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THE CONCISE UNIVERSAL ENCYCLOPEDIA

Edited by
J. A. HAMMERTON
EDITOR OF THE UNIVERSAL ENCYCLOPEDIA



VOLUME TWO

THE STANDARD LITERATURE CO., LTD.
CALCUTTA AND RANGOON

ABBREVIATIONS USED IN THIS WORK

abbrev., abbreviation.	E., east, eastern.	ib., ibid, ibidem (in the same place).	M.P., Member of Parliament.	R.C., Roman Catholic.
A.D., Anno Domini.	eccles., ecclesiastical.	id., idem (the same, or as mentioned before).	MS., MSS., manuscript—s.	Rly—s., railway—s.
agric., agricultural.	ed., edited, edition.	i.e., id est (that is).	mt—s., mountain—s.	Rt. Hon., Right Honourable.
alt., altitude.	e.g., exempli gratia (for example).	i.h.p., indicated horse-power.	mun., municipal.	R.V., Revised Version.
a.m., ante meridiem (before noon).	E.M.F., electromotive force.	illus., illustration—s.	N., North.	S., South.
anc., ancient, anciently.	Eng., English.	in—s., inch—es.	N.C.O., non-commissioned officer.	S., Saint.
A.R.A., Associate of the Royal Academy.	episc., episcopal.	isl., island.	N.O., number.	sec—s., second—s.
A.S., Angle-Saxon.	E.R., East Riding (Yorkshire).	Ital., Italian.	N.R., North Riding (Yorkshire).	Skt., Sanskrit.
A.V., Authorised Version	etc., et cetera.	J.P., Justice of the Peace.	N.T., New Testament.	Span., Spanish.
b., born.	et seq., et sequens (and the following).	jr., junior.	N.Y., New York.	sp. gr., specific gravity.
Bart., Bt., Baronet.	F., Fahrenheit.	kg., kilogram.	O. Fr., Old French.	sq., square.
B.C., Before Christ.	fig., figure.	km., kilometre.	O.T., Old Testament.	S.R., Southern Rly.
bor., borough. [dies.	Fr., French.	lat., latitude.	oz., ounce, ounces.	SS., Saints.
B.W.I., British West India.	F.R.S., Fellow of the Royal Society.	Lat., Latin.	p., page.	S.S., screw stenmor.
C., Centigrade.	ft., feet.	lb., pound.	parl., parliamentary.	sth., station.
c., circa (about).	gall., gallery, gallon.	Lieut., Lieutenant.	p.c., per cent.	temp., temperature.
Capt., Captain.	Gen., General.	lit., literally.	p.m., post meridiem (afternoon).	terr., territory.
cf., compare.	Ger., German.	L.M.S., London, Midland & Scottish Rly.	pop., population.	trans, translation, translated.
ch., chapter.	govt., government.	L.N.E., London & North Eastern Rly.	Port., Portuguese.	U.S.A., United States of America.
co., county, company.	gr., grain.	long., longitude.	pr., pounder.	v., verse, versus (against), voltage.
C.N.R., Canadian National Rlys.	Gr., Greek.	Ltd., Limited.	Prof., Professor.	viz., videlicet (namely).
C.O., Commanding Officer	gs., guineas.	m., miles.	pron., pronunciation.	vol., volume.
col., college.	Gt., Great.	Met. R., Metropolitan Rly.	prov., province.	W., West.
C.P.R., Canadian Pacific Rly.	G.W.R., Great Western Rly.	min—s., minute—s.	publ., published.	W.R., West Riding (Yorkshire).
cwt., hundredweight.	Heb., Hebrew.	mod., modern.	q.v., quod vide (which see).	yds., yards.
d., died.	Hon., Honourable.		R., river.	
dept., department.	h.p., horse power.		R.A., Royal Academy.	
dist., district.	hrs., hours.			
div., division.				
dols., dollars.				
Dr., Doctor.				

HILL, ROWLAND (1744-1833). English preacher. Born at Hawkstone Park, Aug. 12, 1744, the son of Sir Rowland Hill, Bart. (d. 1783), he was educated at Eton and S. John's College, Cambridge. In 1773 he became curate at Kingston, Somersetshire, being then in deacon's orders. Rejected for the priesthood owing to his eccentricity, he continued to preach about the country as one of the numerous chaplains to Selina, countess of Huntingdon (q.v.). In 1783 he commenced a ministry at Surrey Chapel, Blackfriars Road, London, built by himself, where his preaching attracted huge congregations. He died April 11, 1833.

HILL 60. A low, almost invisible eminence, 2½ m. S.E. of Ypres, near Zillebeke, Belgium. It was of tactical importance in the Great War, as the summit gave the Germans good observation of the British movements. In April, 1915, six mines were exploded under it, and the British seized the top. The British retained their hold, and it remained in their hands without challenge until May 5, when the Germans seized it. Until June, 1917, the crest remained in German hands. It was recovered by the British in the operations for the capture of the Messines Ridge, but it once more passed to the Germans in April 1918. It was recovered in Sept., 1918.

HILL 70. Hill of France, overlooking Loos on the S.E. and dominating Lens. It was an important British objective in the battle of Loos (q.v.), Sept., 1915.

HILLSBOROUGH. Town of co. Down, Northern Ireland. It is 12 m. from Belfast, and is served by the Great Northern of Ireland Rly. and the Lagan Canal. The town arose around Hillsborough Castle, the residence of the Hills, marquesses of Downshire. Pop. 540.

HIMALAYA MOUNTAINS (Sanskrit, abode of snow). Mountain system of Central Asia, stretching from the confines of Afghanistan to Upper Burma, and containing some of the loftiest peaks in the world. From the Hindu Kush and the Pamirs the mountains trend S.E. through the state of Kashmir, and along the frontiers of the United Provinces, Nepal, Sikkim, and Bhutan, forming a barrier between N. India and the high plateau land of Tibet. The extreme length is about 1,550 m., and the breadth averages 200 m. There is a marshy, wooded region known as the Terai extending about 500 m. along the N. frontier of India and Nepal, separated from the foothills by a boulder-strewn and scrubby belt called the Bhabar.

The average alt. of the Himalayas has been estimated at between 16,500 ft. and 18,000 ft., but there are many summits over 24,000 ft. The highest known point on the globe, Mt. Everest, reaches the immense alt. of 29,141 ft. Other high summits are Dhaulagiri, 26,795 ft., Kinchinjunga, 28,146 ft., and Chumalhari, 23,930 ft. The principal rivers taking their rise in the Himalayas are the Ganges, Indus, Jumna, Sutlej, and Brahmaputra. Sanatoria and hill stations have been established at Darjeeling, Simla, Dalhousie (alt. 7,680 ft.), Naini Tal, and elsewhere. A recent explorer of the Himalayas is C. G. Bruce. See Bruce, C. G.; Darjeeling; Everest.

HINCHINBROOK. Island off the coast of N.E. Queensland, Australia. S. of Rockingham Bay, it is separated from the shore by a narrow channel. The island contains Mt. Hinchinbrook.

HINCHINGBROOKE. Village of Huntingdonshire, just outside the town of Huntingdon. Here is Hinchingbrooke House, once the residence of the Cromwells. They kept the estate until 1627, and it now belongs to the earl of Sandwich. See illus. p. 752.

HINCKLEY. Market town and urban district of Leicestershire. It is on the L.M.S. Rly., 14 m. S.W. of Leicester. The chief

building is the restored Gothic church of S. Mary. The industries are mainly the manufacture of hosiery, boots and shoes, and bricks. Market day, Mon. Pop. 13,644.

HINDENBURG. German battle cruiser. Built at Wilhelmshaven in 1915, she was engaged in the Great War. She was 610 ft. long, 96 ft. in beam, displaced 28,000 tons, and had engines of 100,000 horse-power, giving a speed of 28 knots. She carried eight 12-in. and twelve 5.9-in. guns. Other ships of her type were the Bismarck and the Lutzow. Hindenburg was one of the ships handed over to the British, Nov. 21, 1918. Scuttled by its crew at Scapa in that month, it was salvaged in 1930.

HINDENBURG, PAUL VON (b. 1847). German soldier. A member of a Prussian Junker family, he was born Oct. 1, 1847, at Posen. He joined the Prussian army in 1865, and served throughout the Austro-Prussian War of 1866 and the Franco-Prussian War of 1870-71. Rising in rank till he became general of infantry and commander of an army corps, he retired from the army in 1911. On the Russian invasion of East Prussia in Aug., 1914, he was appointed to the command of the German forces in that province and before the month closed defeated the Russians disastrously at the battle of Tannenberg.



Paul von Hindenburg. German soldier

On Sept. 25 Hindenburg was put in chief command of the Austro-German forces which invaded Poland. He defeated the Russians at Kutno on Nov. 15-16, and for this victory was made a field-marshal. From then until Aug., 1916, he was German generalissimo on the Eastern front, and then was appointed chief of the general staff of the field army. From that time to the signing of the armistice on Nov. 11, 1918, Hindenburg was the German generalissimo. After the German Revolution he remained in command of the army until he retired into private life in June, 1919. He was elected president of the republic in 1925. Consult his *Out of My Life*, 1920.

HINDENBURG LINE. German fortified system in France in the Great War. Known to the Germans as the Siegfried line, it consisted of trenches strengthened by concrete shelters and gun emplacements. Roughly, it ran from Arras to Laon. The line included the dry bed of the Canal du Nord and the tunnels of the Schelde canal. Behind it was a fortified area called the Siegfried zone, while farther to the rear, covering Cambrai, were the Hunding and the Brunhilde lines, completed in 1918. To the N. from E. of Lens to Quéant was the Wotan line or "switch" covering Douai, and the Hermann line (Le Cateau to Ghent) guarding the German right flank. The battle of Epéhy (q.v.) was fought to clear the approaches to the Hindenburg line, which was finally stormed by the Allies in Sept.-Oct., 1918. See Arras; Cambrai.

HINDHEAD. District, hill, and common of Surrey. It is on the Portsmouth Road, 2 m. N.W. of Haslemere. On Gibbet Hill, 895 ft., was the gallows on which the murderers of an unknown sailor, Sept. 24, 1786, were hanged. Near is the glen known as the Devil's Punchbowl. Excepting only Leith Hill, Hindhead and its neighbour, Blackdown, 918 ft., are the highest points of the Greensand ridge, which here abuts upon the Wealden plain. The Wey rises to the S. on Blackdown circles around Hindhead on the W. and N., and receives eight small streams which radiate from the plateau.

HINDLEY. Urban dist. of Lancashire. It is situated 2½ m. S.E. of Wigan on the L.M.S. and L.N.E. Rlys. The chief industries

are cotton manufactures and iron founding. There are coal mines in the neighbourhood. Pop. 23,574.

HINDLIP. Village of Worcestershire, 3½ m. from Droitwich. Here is Hindlip Hall, the seat of Lord Hindlip. In 1886 Sir Henry Allsopp, Bart. (1811-87), the head of the firm of brewers at Burton-on-Trent, was made a baron and took his title from here.

HINDUISM. Term used for the new Brahmanism which came into being in India after the decline and banishment of Buddhism from that country. Two things remain as prominent in Hinduism as in original Brahmanism—the supreme position of the Brahman, and the rigid observation of caste.

The Vedas and the Brahmanas are still regarded as the ultimate authority in religion, though the former are little read and exercise but slight influence upon the religious beliefs and practices of the people. The Vedanta Sūtras, or aphorisms, belong in their present form to about A.D. 700, and may be regarded as the standard work of Hindu philosophy. The Eighteen Puranas (archaeological treatises) are very much read by the common people. They have much to say about the worship of Siva and Vishnu and the gods and goddesses who follow in their train, and constitute the principal source and authority for modern Hinduism.

The Tantras, manuals of religion.



Hinduism. Vishnu, one of the principal deities. Above, Indra, king of heaven

of magic, of counter-charms, etc., are of late date, some no older than the 18th century. They are the product of Sivaism in its most revolting form.

At least three-fourths of the population of modern India belong ostensibly to one or other of the two great sects, the Vishnuites or the Sivaites. There are two Vishnuite sects, the Krishnaites, the most

numerous though the least intellectual, who regard Krishna, and the Ramaites, who regard Rama, as the principal Avatar or Incarnation of Vishnu. They are strongest in middle India.

The Sivaites worship as their supreme deity Siva (the propitious one), the modern representative of the Vedic Rudra, the destroyer. Only that Siva is regarded as the preserver as well as the destroyer of life. The headquarters of Sivaism are the extreme north and the southern part of India. The principal subdivisions are the Sakta and the Thugites.

HINDU KUSH (anc. Paropamisus). Mountain range of Central Asia. It extends from the Pamir mountain knot in a S.W. direction, as far as lat. 34° 30' N and long. 67° 40' E. The range lies partly in Afghanistan, and separates Badakshan on the N. from Kafiristan on the S., and has many peaks exceeding 20,000 ft. It has a length of some 500 m.

The Amu Daria has its source in these mountains, from which many tributaries of the Kabul river originate.

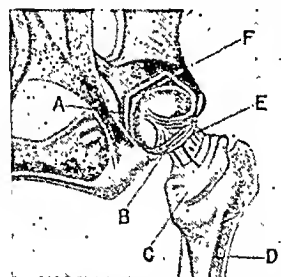
HINDUSTANI. Name given by Europeans to one of the Aryan languages of India. Forming the general official and commercial medium of communication throughout India, Hindustani contains a large admixture of Arabic and Persian words, and is rather a corrupt form of Hindi than a separate language. The literature, which in the earliest times consisted chiefly of translations from Sanskrit, Arabic, and Persian, greatly developed during the 19th century.

HINGE. Device consisting of plates, bars, or flaps pivoted upon pins, on which they turn relatively to each other. In ordinary types there are two flaps. Hinges are usually made of cast iron, wrought iron, steel, or brass. The following are some of the principal patterns; butt hinges, as used for doors; tee hinge, with one long tapered flap and one short flap; and box hinge, with two long tapered flaps.

HINGHAM. Village of Norfolk. It is 6 m. W. of Wymondham. The 14th century church of S. Andrew has a fine tower, stained glass, and monuments, including a bust of Abraham Lincoln, an ancestor of whom was a native of this place. Pop. 1,413.

Hingham, in Massachusetts, U.S.A., is a residential district and summer resort on Massachusetts Bay, 17 m. S.E. of Boston.

HIP JOINT. Ball and socket joint in the body the ball being the rounded head of the femur, or thigh-bone, and the socket the cup-shaped hollow, or acetabulum, on the outer side of the pelvis. It is a very strong joint, being surrounded by tough ligaments, and it permits of a considerable range of movement of the thigh in every direction.



Hip-joint. Anatomical diagram of the ball and socket joint. A. Ligamentum teres. B. Acetabulum ligament. C. Capsular ligament, turned back. D. Femur or thigh-bone. E. Cotyloid ligament. F. Acetabulum removed.

The hip joint is not infrequently the seat of chronic tuberculosis in young children. There is wasting of the muscles of the thigh and the affected leg appears longer than the sound limb. If the case is treated early the outlook is hopeful.

HIPPARCHUS (fl. c. 146-120 B.C.). Greek astronomer. Born at Nicaea in Bithynia, he chiefly carried out his observations in the island of Rhodes and in Alexandria. His only extant work is a Commentary on the Phaenomena of Eudoxus and Aratus. His chief title to fame rested upon his catalogue of 1,080 stars. He invented trigonometry and originated the method of fixing terrestrial positions by means of circles of latitude and longitude. See Astronomy.

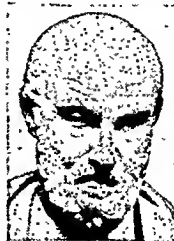
HIPPER. FRANZ VON (b. 1863). German sailor. Born Sept. 13, 1863, he entered the navy and held the rank of rear-admiral at the outbreak of the Great War. He was in charge of the German naval raid on Scarborough and the Hartlepool, Dec. 16, 1914, and commanded the cruiser squadron at the battles of the Dogger Bank, 1914, and Jutland, 1916.

HIPPERHOLME. Urban district of Yorkshire (W.R.). It is 2 m. from Halifax, of which it is practically a suburb, and has a station on the L.M.S. Rly. The industries include tanning and quarrying, while in the neighbourhood are coal mines. Pop. 4,800.

HIPPIAS. Greek sophist. A native of Elis and contemporary of Socrates, he was famous for his extensive knowledge and remarkable memory. He regarded law as opposed to nature and driving man to act contrary to his natural instincts.

HIPPO or **HIPPO REGIUS.** Ancient city of N. Africa, which occupied the site of the present Bona, Algeria. Founded by the Phoenicians, it was the favourite residence of the Numidian kings. Under Rome, Hippo Regius flourished as a trading centre, and became the see of Augustine, who died here in 430. Hippo was sacked by the Vandals and destroyed by the Moslems in the 7th century.

HIPPOCRATES (c. 460-377 B.C.). Greek physician, commonly called the Father of Medicine. One of the first scientific medical men, he was born in the island of Cos, a member of the famous family of priest-physicians, the Asclepiadæ (see Aesculapius). An acute and indefatigable observer, he practised both as physician and surgeon. More than 70 of his essays are extant.



Hippocrates, Greek physician. Bust in Brit. Mus.

HIPPODROME (Gr. hippos, horse; dromos, running, course). Course for chariot or horse racing in ancient Greece. It was oblong in shape with rounded ends.

The London Hippodrome, in Cranbourne Street, W.C., was built in 1899 with special arrangements for converting the stage into a circus arena, or a large water tank. It was reconstructed in 1909, its former arrangements being modified. See Amphitheatre; Circus.

HIPPOGRIF. Fabulous animal. It is represented in art as a winged horse with the head of a griffin, but the word is sometimes used for a winged horse.

HIPPOLYTE. In Greek legend, queen of the Amazons. She wore a famous girdle, the gift of her father Ares, to obtain which was one of the twelve labours of Hercules. Refusing to give it up, she was slain by him. According to another legend, Hippolyte invaded Attica at the head of her Amazons, but was defeated by Theseus and became his wife. See Amazon.

HIPPOLYTUS. In Greek legend, son of Theseus. He rejected the advances of his step-mother, Phaedra, who thereupon took her own life, leaving a letter in which she accused Hippolytus as the offender. Theseus called upon Poseidon to destroy his son, but he was restored to life by Aesculapius and afterwards ruled, under the name of Virbius, in the grove of Egeria near Aricia. See Phaedra.

HIPPOPHAGY (Gr. -hippos, horse; phagein, to eat). Practice of eating horseflesh. An enormous mass of fossil bones found at Solutrè in the Rhône valley supports the view that in palaeolithic Europe the wild horse was habitually hunted for food before its domestication for riding and traction. In the 8th century Pope Gregory III declared it to be unclean and execrable for human food. During the Crimean campaign of 1855, the siege of Paris in 1870-71, and throughout the Great War, horseflesh was of great dietetic importance. It is sold in Belgium, and is a primary ingredient in some forms of French sausage.

HIPPOTAMUS (Gr. hippopotamos, river-horse). Large herbivorous mammal of the family Hippopotamidae. There are two

species, both confined to tropical Africa. The body is bulky and piglike in form, with large head and gaping mouth armed with large tusks and incisor teeth. The nostrils are on the top of the muzzle. The common hippopotamus (*H. amphibius*) attains a length of 14 ft., and the height at the shoulder is about 4 ft. A fine male will weigh from four to five tons. The skin is usually blackish brown or slate colour. It is found only in Central Africa.

The smaller species (*H. liberiensis*), known as the pigmy hippopotamus, is found in Liberia, the Guinea Coast, and Sierra Leone. It is black in colour, about 6 ft. long, and weighs about 400 lb. In habits the hippopotamus is the most aquatic of all the larger land mammals. Slow and clumsy on land, it is a fairly rapid swimmer. It leaves the rivers at night to graze, and in cultivated districts does much damage to crops.

HIRE PURCHASE SYSTEM. Method of purchasing goods by instalments. The instalments are treated as payments for the hire of the goods, which remain the lender's property; but with a proviso that if all instalments are punctually paid, the ownership passes to the hirer. Meantime the latter has no right to dispose of the property.

HIROSHIMA. City of Honshu, Japan. It is picturesquely situated at the head of a bay, on the S. coast of the island, 190 m. W.S.W. of Kobe. Facing the city is the sacred islet of Itakushima (Island of Light), famous for its beautiful Shinto temple, a resort of pilgrims. Hiroshima trades in lacquered ware, bronze goods, and other objects of art. Ujina, 4 m. away, is a busy port. Pop. 195,731.



George Hirst, English cricketer.

HIRST, GEORGE HERBERT (b. 1871). English cricketer. Born Sept. 7, 1871, at Kirkheaton, he became a member of the Yorkshire county eleven in 1892. He was a fine batsman and a fast left-hand bowler, with a most deceptive swerve. His best batting season was 1904, when he scored 2,501 runs for an average of 54.36 per innings, and his best bowling season was 1906, when he took 208 wickets for an average of 16.5. He has scored 1,000 runs and taken 100 wickets on 14 occasions, and in 1906 he scored over 2,000 runs and captured over 200 wickets, the exact totals being 2,385 runs and 208 wickets. Altogether he played 60 innings of 100 and upwards. In 1920 he became cricket coach at Eton College.



Hippogriff, a fabulous animal.



Hippopotamus, the great river hog of Central Africa. Gambier Bolton, F.Z.S.

Hispaniola. Meaning little Spain, this word was used at one time for the island of Haiti (q.v.), in the W. Indies.

HISTON. Village of Cambridgeshire. It is 4 m. N.N.W. of Cambridge on the L.N.E. Rly. The cultivation of fruit and jam manufacture are the chief industries. Pop. 1,521.

HITCHIN. Urban district and market town of Hertfordshire. It is 32 m. N. of London and is a junction on the L.N.E.R. The fine old parish church contains a groined roof, an ancient font, mosaics, effigies, brasses, and other features of interest. Near is Golden Square, where Eugene Aram lived. The Priory, a seat of the Radcliffe family, is on the site of a Carmelite monastery, and almshouses include remains of a Gilbertine nunnery. Hitchin grows lavender and peppermint for distillation, and engages in malting and straw-plaiting. Pop. 13,535.

HITHER GREEN. Residential district and suburb of S.E. London. It is in the met. bor. of Lewisham, 7 m. S.E. of Charing Cross on the Southern Rly. Here is Park Hospital, a large fever hospital of the London County Council. It overlooks Mountsfield Park, a pleasure ground of 12 acres.

HITTITES. Ancient people in W. Asia. Denoting primarily a dominant tribe in the Halys plain, the name sometimes embraces the confederacies of city states whereof this tribe usually formed the head. Originating in prehistoric times in Cappadocia, they subjugated Eastern Asia Minor, aided by a knowledge of implements and weapons of the early copper-age culture. They also bred and harnessed the horse, which long afterwards was imported from them by Solomon (1 Kings 10).

Well established by the end of the 3rd millennium B.C., they overturned the first dynasty of Babylon about 1925 B.C. About 1400, a dynasty was founded by Subbiluliuma, who welded his neighbours into a close-knit kingdom, organized into principedoms and prefectures. This kingdom made treaties on equal terms with Egypt, maintained relations with Babylon, and lasted until overthrown in 1200 by the Mushki. By 1000 Hittite activities had revived under the spur of an early iron-age culture until Carchemish, in 717, and Marash in 709, were overthrown. Examples of their distinctive sculptural art are seen at Boghazkeui, Carchemish, Hamath, Marash, Sakjegeuzi, Sinjerli, Karabel, and elsewhere.

HIVITES. One of the tribes driven out of their territory by the Hebrews on their invasion of Palestine. Gibeon and Shechem were two of their chief centres. See Palestine.

HOAR CROSS. Village of Staffordshire. On the edge of Needwood Forest, 4 m. E.S.E. of Abbots Bromley, it is noted for its magnificent church, built by Mrs. Meynell-Ingram in 1892, from the design of G. F. Bodley. Hoar Cross Hall is the seat of the Meynells.

HOARE, SIR SAMUEL JOHN GURNEX (b. 1880). British politician. Born Feb. 24, 1880, the eldest son of Sir Samuel Hoare. Bt., he was educated at Harrow and Oxford. In 1910 he was elected M.P. for Chelsea as a Unionist, and in 1915 he



Sir Samuel Hoare, British politician
Russell

for Chelsea as a Unionist, and in 1915 he

father's baronetcy. He was secretary for air in the Unionist Ministry of 1922-24 and again occupied that position 1924-29.

HOARFROST (A.S. har, white). Deposition of ice particles on surfaces when the dew point is below 32° F. The ice particles or crystals readily form on the branches of trees, leaves of grass, etc., and the heaviest hoar frosts are formed when the heaviest dews occur, on clear, calm nights. See Dew; Frost.

HOATZIN (Opisthocomus cristatus). South American bird. It is about the size of a pigeon, and resembles a small, broad-tailed pheasant with an erectile crest on its head. The plumage is olive with white markings above and reddish below, and there is a naked patch on the breast.

HOBART. Capital of Tasmania. It lies on the S. side of the island at the foot of Mt. Wellington, on the Derwent, 12 m. from its mouth. It is a port of call for European mail steamers and for Australian interstate steamship liners. Its beautiful harbour gives a fine setting to the city and its government house, parliament, university, and other fine public buildings. The industries include tanneries, foundries, saw-mills, breweries, flour mills, and fruit-preserving factories. Its climate and scenery attract many visitors from the mainland. Pop. 52,600.

HOBBEMA, MEINDEERT (1638-1709). Dutch painter. The friend and possibly the pupil of Salomon and Jacob Ruysdael, he was born and died in Amsterdam. Little appreciated by the patrons of his day, he had many artistic friends, Philip Wouverman, Lingelbach, and the van de Velde collaborating in his productions. Typical of his work is The Avenue, Middel-harnis, with six other paintings, in the National Gallery.

Hobbes, JOHN OLIVER (d. 1906). Pen-name of the British novelist, Pearl Mary Teresa Craigie (q.v.).

HOBBES, THOMAS (1588-1679). English philosopher. Born at Malmesbury, April 5, 1588, and educated at Magdalen Hall, Oxford, he became in 1610 tutor to the grandson of the duke of Devonshire, thus forming his longstanding connexion with the Cavendish family.

His first objects of study were classics and mathematics, but he is chiefly remembered as a political philosopher. In 1640 he wrote a defence of monarchy, published later as two separate treatises entitled Human Nature and De Corpore Politico (On The Body Politic). In 1651 his greatest work, The Leviathan, appeared, and though the political theories were acceptable to the



Thomas Hobbes, English philosopher
After Dobson

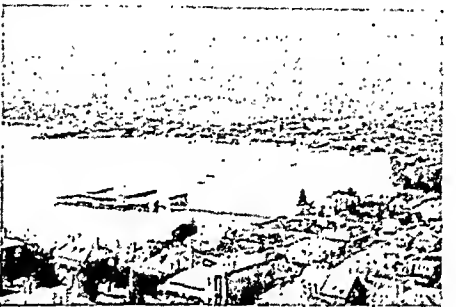
restored monarchy, the Church accused him of atheism. He died Dec. 4, 1679.

HOBBES, JOHN BERRY (b. 1882). English cricketer. Born at Cambridge, Dec. 16, 1882, he first played county cricket for Cambridgeshire in 1903, but qualified by residence to play for Surrey, for which county he first appeared in 1905. In 1920 he aggregated 2,827 runs for the season. He has several times represented his country against the Australians, and played for the M.C.C. team in Australia, 1920-21 and 1928-29. He also played for England against Australia in 1930.



John B. Hobbs, English cricketer

HOBBY HORSE. Old-time feature at fairs, pageants, and other popular festivities. It consisted of a gaudily coloured pasteboard of a caparisoned horse girt round the waist of a performer, who imitated the curvettings of the animal. See Bicycle.



Hobart, Tasmania. Sandy Bay, showing the low wooded hills rising behind the capital
Courtesy of the Commonwealth of Australia

HOBGOBLIN. Traditional elf or goblin, generally of terrifying appearance. The prefix Hob is probably a corruption of Robin, and the name may have originally represented only the Robin Goodfellow who was widely noted in English folklore.

HOBOKEN.

City of New Jersey. It stands on the W. side of the Hudson river, adjoining Jersey City, and is served by the Lehigh Valley and other rlys. On the opposite shore is New York, with which Hoboken is connected by ferries and tunnels. Hoboken is an important port for the shipment of coal. Pop. 68,166.

HOESON, THOMAS (c. 1544-1631). Cambridge carrier and livery-stable keeper. His refusal to allow any horse to be taken from his stables except in its proper turn is said to have given rise to the proverb Hobson's choice, i.e. take it or leave it. A street and conduit in Cambridge are named after him.

HOCHE, LAZARE (1768-97). French soldier. Born June 25, 1768, he became a soldier in the Guard before the Revolution. In 1793 he was made a general, and in the winter of 1793-94 he won several brilliant victories over the Austrians and Russians, but was soon imprisoned as a traitor. Speedily released, he was successful against the royalists



Hobby Horse. Popular figure at old English fairs
From a print published by T. Fagg, 1839

who were in arms in La Vendée, but his expedition to invade Ireland in 1796 failed. He was later in a command on the Rhine. Hoche died Sept. 18, 1797. Pron. Ohsh.

HOCHELAGA. Name of a suburb of Montreal and of a county in the island of Montreal. It preserves the name of a native village inhabited by the Hochelaga or Beaver Indians, which stood where is now the city of Montreal. This was seen by Jacques Cartier when he visited the place in 1532, but it had disappeared 80 years later. See Montreal.

HOCK. Gorman white wine. Grown in the Rhine district and locally known as Hochheimer, from Hochheim, on the Main, the anglicised name hock is now applied to all Rhine white wines, either still or sparkling.

HOCKEY (Eng. hook; Fr. hoquet, crook). Outdoor game that has been played for centuries in various countries under various names. In Ireland a similar game is known as hurley, in Scotland as shinty, in Wales as bandy.

As now played, hockey became a recognized game about 1883, when a standard set of rules was framed by the Wimbledon Club. It is played between two teams of eleven players, each player having a stick

with a curved blade with which a ball is driven, the object being to force the ball into the opponents' goal. The ball is a leather cricket ball, the case painted white or made of white leather. The sticks are made of ash, and may not weigh more than 28 oz. The correct formation of a team is five forwards, three half-backs, two backs, and a goalkeeper. The game is of 70 mins duration, the teams changing ends after 35 mins. play. The dimensions of the ground are: length, 100 yds.; breadth, from 55 yds. to 60 yds. The goals are 4 yds. wide and 7 ft. high.

HOCKING, SILAS KITTO (b. 1850). British novelist. Born in Cornwall, March 24, 1850, he was ordained minister of the United Methodist Church in 1870, retiring in 1896. In 1879 he published *Her Benny*, this being the first of a long sequence of novels, chiefly of a religious tendency, many of which have enjoyed wide popularity. Hocking's *My Book of Memory* appeared in 1923.

His brother Joseph (b. 1855) became a Methodist minister in 1884. He also is the author of many popular novels.

HOCKTIDE. Old English holiday observed on the second Monday and Tuesday after Easter. Formerly celebrated by various rough games and forfeits, the festival was popularly supposed to commemorate Saxon victories over the Danes. The custom apparently originated about the 12th century, and died out early in the 18th. It is still, however, observed at Hungerford, Berks.

HODDESDON. Urban dist. and market town of Hertfordshire. It is on the river Lea, 4 m. S.E. of Hertford, on the L.N.E.R., and was a fishing resort of Izaak Walton. Market day, Wed. Pop. 5,410.

HODGE. Character in William Stevenson's comedy, *Gammer Gurton's Needle*, 1575. He is Gammer Gurton's servant, and his name, a nickname for Roger, has since served as a conventional designation for an English farm labourer or countryman.

HODGE, JOHN (b. 1855). British politician. Born at Muirkirk, Ayrshire, Oct. 29, 1855, he became a leading trade unionist. He formed a society of workers in the steel, iron and tinplate trades, of which he became secretary. In 1892 he was president of the Trade Union Congress. In 1906 he entered Parliament as Labour M.P. for Gorton, retaining his seat until 1923. In 1916 he was made minister of labour in the coalition ministry, and from 1917-19 he was minister of pensions.

HODGES, FRANK (b. 1887). British Labour politician. Born at Woolaston, Glos., April 30, 1887, he worked as a collier until the age of twenty-one. He was general secretary of the Miners' Federation of Great Britain, 1918-24, and of the Miners' International Federation, 1925-27. He took a leading part in negotiations connected with mining disputes, and was M.P. for the Lichfield div., 1923-24. He became a member of the Central Electricity Board in 1927.

HODSON, WILLIAM STEPHEN RAKES (1821-58). British soldier. Born at Maisemore Court, near Gloucester, March 19, 1821, he entered the army and proceeded to India. During the Indian Mutiny, Hodson distinguished himself as commander of a body of irregular cavalry, known as Hodson's Horse, and as chief of the intelligence department. He died March 12, 1858.

HOENIR. One of the three gods in Norse mythology, the long-logged one, the lord of the ooze, synonymous with stork. After Midgard, the abode of mankind, was formed, Odin, Hoenir, and Lodur made man and woman from an ash and an elm, Hoenir's gift being speech.

HOER, ANDREAS (1767-1810). Tiroler patriot. Born at St. Leonard in the Passer valley, Tirol, Nov. 22, 1767, he inherited his father's business as an innkeeper. Hoer was devoted to Austria, and violently opposed to the treaty of Pressburg, 1805, whereby Tirol passed into the power of France and was joined to Bavaria. He raised troops and headed several risings against Bavarian rule, being finally captured and shot by the French at Mantua, Feb. 20, 1810.

HOFFMANN, ERNST THEODOR AMADEUS (1776-1822). German author. Born at Königsberg, Jan. 24, 1776, he studied law, and eventually, in 1816, became chancellor of the court of appeal at Berlin. During his early life music was his main interest, and it was not till 1814 that the short stories and essays in *Phantasiestücke* appeared. His works occupy a prominent place in the romantic literature of the period. Hoffmann died June 25, 1822.

HOFMANN, JOSEF CASIMIR (b. 1876). Polish pianist. Born at Cracow, Jan. 20, 1876, he studied under Rubenstein, and as a youthful prodigy went on tour in Europe and America. In 1888 he retired for six years from public life, but after a further period of study

reappeared and took a high place among contemporary musicians.

HOFMEYER, JAN HENDRIK (1845-1909). S. African politician. Born in Cape Town, July 4, 1845, he took up journalism, and in 1879 was elected M.P. for Stellenbosch in the Cape parliament, where his strong Dutch sympathies brought him into notice. In 1878 he organized the Dutch farmers and, by means of the Afrikaner bond, welded the Dutch element into a strong political entity. He dissociated himself from Kruger's anti-British policy, and took no part in the struggle of 1899-1902, but when it was over he returned to S. Africa and was again an influential personage until his death, Oct. 16, 1909.



J. H. Hofmeyr,
S. African politician

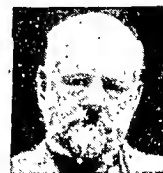
HOGARTH, WILLIAM (1697-1764). English painter, engraver, chronicler, and moralist. Born in Bartholomew Close, City of London, Nov. 10, 1697, he began his career as apprentice to a silversmith in Leicester Fields, but amused himself with painting, and paid some attention to engraving. In 1726 he became known by some copper-plates, for Butler's Hudibras. In 1733 he commenced his long series of didactic chronicles in pictorial art, beginning with *The Harlot's Progress*. This group of works, which includes *The Rake's Progress*, *The Enraged Musician*, *Marriage à la Mode*, *Beer Street and Gin Lane*, *The Lady's Last Stake*, *Industry and Idleness*, and others, takes high position as an exposition of the life of the day.

As a portrait painter Hogarth had few rivals. He became serjeant painter to the king in 1757. He died Oct. 26, 1764. Several of his best pictures are at the Soane Museum, in Lincoln's Inn Fields; others are at the National Portrait Gallery, Windsor Castle, and Lambeth Palace. In his house at Chiswick, which has been in some measure restored to its original condition, is a collection of his engravings. See illus. pp. 428, 594.

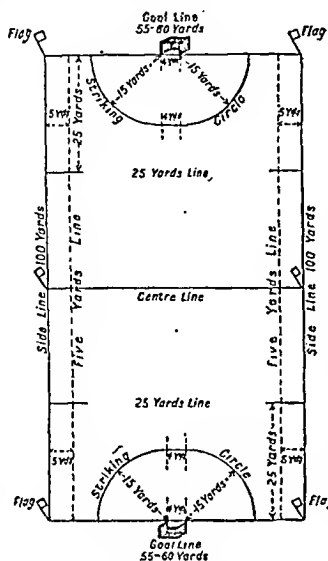
HOGG, JAMES (1770-1835). Scottish poet, known as the Ettrick Shepherd. Born at Ettrick, Selkirkshire, the son of a shepherd, he was inspired with the desire to write poetry at the age of sixteen by a reading of Ramsay's *Gentle Shepherd*. He obtained his first success in 1807, with a volume of poems entitled *The Mountain Bard*. *The Queen's Wake*, 1813, is a work of real merit, with a strong vein of imagination. Hogg died at Altrive in Yarrow, Nov. 21, 1835.

HOGG, QUINTIN (1845-1903). British philanthropist. A son of Sir James Weir Hogg,

he was born in London, Feb. 14, 1845, and educated at Eton. In 1882 he purchased the lease of the Royal Polytechnic Institution, Regent Street, London, and opened it on Sept. 25. His object was to provide young men with instruction, recreation, and social intercourse, and under his direction it developed into a great organization. Hogg died Jan. 17, 1903. His son Douglas was a noted lawyer who in 1929 was made a viscount. See Hailsbam, Viscount.



Quintin Hogg,
British philanthropist
Elliott & Fry



Hockey. Plan of the field as laid out by the Hockey Association



William Hogarth,
English painter

Self-portrait in National Portrait Gallery

HOGHTON. Village of Lancashire. It lies between Preston and Blackburn, on the L.M.S. Rly., and is notable for the seat of the De Hoghton family, Hoghton Tower, originally built in 1565. On his visit here in 1617 James I is said by popular tradition to have "knighted" the loin of beef (sirloin). Pop. 913. Pron. Howton.

HOGMANAY or **CAKE DAY.** Name used in Scotland and the N. of England for New Year's Eve, and the gifts then bestowed. The word is probably of early French origin.

HOG PLUM (Spondias). Genus of trees of the natural order Anacardiaceae, natives of the tropics of both hemispheres. The leaves are divided into long, opposite leaflets, and the flowers are small with four or five each of sepals and petals. The fleshy fruit is plumlike and contains four or five seeds. These fruits vary in flavour, according to species.



Hog Plum. Leaf, flowers and fruit of *Spondias dulcis*

HOG'S BACK. Western termination of the North Downs in Surrey. It is so called on account of its outline. It runs from Guildford to Farnham, about 10 m.; the height of the chalk elevation is from 350 to 500 ft., and its breadth at the top about 500 yds. See Downs.

HOGSHEAD. English measure of liquid capacity. In 1483 it was fixed at 63 wine galls., equal to 52½ impl. galls., but now it equals 54 galls. for beer, cider, etc. As a large cask, its capacity varies according to commodity and locality, as for molasses, sugar, etc.

Hogue. British cruiser, one of the three torpedoed by the German submarine U 9 off the Dutch coast, Sept. 22, 1914. See Cressy.

Hog-weed. Variant name of the cow-parsnip (q.v.), *Heracleum sphondylium*.

HOHENLINDEN, BATTLE OF. French victory over the Austrians, Dec. 3, 1800. While attempting to cut off the French army under Moreau, the Austrians were themselves caught between Ney and Grouchy in the van and Richempanse in the rear. They lost heavily, suffering 10,000 casualties.

HOHENSTAUFEN. Name of a famous German family, members of which were rulers of the medieval empire from 1138-1254. Frederick and Conrad of Hohenstaufen were nephews of the emperor Henry V; and when he died, in 1125, Frederick, his heir, just failed to secure his throne. In 1138, however, Conrad was chosen German king. Frederick I, Barbarossa, succeeded him in 1152, and then came Henry VI in 1190. After a period of decline the position of the Hohenstaufens was restored by Frederick II, but the male line became extinct in 1268. See Empire; Frederick I; Frederick II.

HOHENZOLLERN. Name of the family that supplied kings to Prussia from 1701 to 1918 and German emperors from 1871 to 1918. The family was first heard of in S. Germany, its earliest members being nobles who called themselves counts of Zollern, the hill in Swabia on which their castle stood. In 1227 the family lands were divided, and two main branches of the Hohenzollerns came into existence. The elder kept Zollern and the lands there, and was known as the Swabian; the younger supplied burgraves to Nuremberg, and was known as the Franconian.

The European importance of the Hohenzollerns began in 1415. Brandenburg was without a ruler, and the emperor Sigismund gave it to Frederick of Hohenzollern, who

became its margrave and one of the seven electors. Henceforward the Hohenzollerns were identified closely with Brandenburg, which under the great elector Frederick William became a European power. In 1701 his son Frederick became king of Prussia. A later king, William I, was crowned German emperor in 1871.

The Swabian Hohenzollerns continued to rule in comparative obscurity until, in 1848, their territories became the property of the king of Prussia. A member of this branch, Charles, became king of Rumania in 1881. See Germany; Prussia; William II.

The Hohenzollern redoubt was the name given to an intricate trench fortress in the German line at the battle of Loos (q.v.), 1915.

HOKKAIDO. Term applied to the northern section of Japan that includes Yezo and the Kurile Islands (q.v.). Yezo, to which the name Hokkaido is frequently restricted, has an area of 30,500 sq. m., and is separated from Sakhalin (Karafuto) by Soya Strait, and from Honshu, the Japanese mainland, by Tsugaru Strait. The country is mountainous. The chief rivers are the Teshio and Ishikari. Sapporo is the capital, and Hakodate the chief port. Fishing, lumbering, and mining are the principal industries. There is very little agriculture, as the soil is unsuitable. The chief exports are canned salmon, dried fish roe, salt, sulphur, and fish oil. Pop. 1,500,000. See Japan.

HOLBEACH. Urban dist. and market town of Lincolnshire. It is 3 m. E. of Spalding, on the L.M.S. and L.N.E. Rlys. All Saints' Church is a fine example of the Late Decorated style. Roman remains have been excavated. Holbeach Marsh, between the town and the Wash, has been reclaimed from the sea. Market day, Thurs. Pop. 5,381.

HOLBEIN, HANS (c. 1497-1543). German painter and engraver. Born at Augsburg, he was the son of Hans Holbein the elder (c. 1460-1524). After working at Basel, where he decorated the Rathaus, Holbein came to London with letters of introduction to Sir Thomas More in 1526. Except for visits abroad, he settled in England for the remainder of his life, becoming principal painter to Henry VIII. He died in London, probably of the plague, Oct.-Nov., 1543.



Hans Holbein, German painter. After a self-portrait

Holbein's chief fame rests on his portraits, where he excels in simplicity and in accuracy. His greatest paintings in England are those in the National Gallery, at Windsor Castle, Longford Castle, and Lambeth Palace, but some of his finest portraits can be seen at The Hague, in Berlin, Vienna, Paris, Munich, and Basel. See illus. pp. 92, 202, 391, 546, 558, etc.

HOLBORN. Borough and district of London. The bor. covers 405 acres and extends from Tottenham Court Road on the W. to Farringdon Road, E., mainly N. of New Oxford Street and High Holborn. Near Staple Inn two obelisks mark the site of Holborn Bars, destroyed in 1867, indicating the W. boundary of the city. The district includes the British and Soano Museums, Lincoln's Inn, Gray's Inn, Staple Inn, the churches of S. Alban (1858), S. Andrew (1686), S. George, Bloomsbury (1731), S. Giles-in-the-Fields (1731-33), the Hospital for Sick Children; Bedford, Russell, Queen, and Red Lion Squares; Hatton Garden and Saffron Hill.

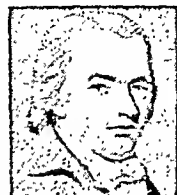
Holborn Viaduct, 1,400 ft. long and 80 ft. wide, was constructed in 1867-68, at a cost of £1,571,000, to carry the roadway over the valley of the Hobbourn. Pop. 43,200.

HOLBROOK, NORMAN DOUGLAS (b. 1884). British sailor. In the submarine branch he

served in the Mediterranean in the early days of the Great War, and on Dec. 13, 1914, commanding submarine B 11, he dived beneath five rows of mines in the Dardanelles and torpedoed the Turkish battleship *Messudiyeh*. Pursued by torpedo boats, he returned safely, having on one occasion been submerged nine hours. He was awarded the V.C., the first awarded to the Navy in the Great War.

HOLBROOKE, JOSEF CHARLES (b. 1878). British pianist and composer. Born at Croydon July 6, 1878, he studied at the Royal Academy of Music. In 1901 he produced his tone poem *The Raven*, and has since written several operas, more than a hundred songs, and much chamber and orchestral music.

HOLCROFT, THOMAS (1745-1809). English dramatist. He was born in London, Dec. 10, 1745. After a chequered early life, he became connected with the stage, and his first novel, *Alwyn, or the Gentleman Comedian*, 1780, embodies many of his own experiences. In the following year appeared his first play, *Duplicity*. He wrote four novels in all, and wrote, translated, or adapted some 30 plays. The most notable of the latter is *The Road to Ruin*, 1792. He died in London, March 23, 1809.

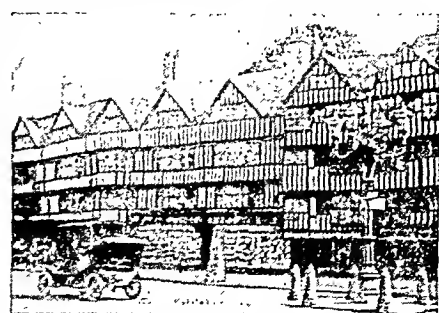


Thomas Holcroft, English dramatist

HOLDA. Goddess of Teutonic mythology. Represented as benignant and merciful, she is regarded as a being of the sky, and when it snows is said to be making her bed. She is the goddess of spinning and agriculture.

HOLDEN, SIR EDWARD HOPKINSON (1848-1919). British banker. Born in Manchester, May 11, 1848, he entered the Manchester County Bank in 1866. Later he became accountant, and then general manager of the Birmingham and Midland Bank, which in 1891 took over the Central Bank of London. In 1898 the City Bank was absorbed, and the London, City and Midland Bank was formed. Of this Holden was made managing director, and later chairman. From 1906 to 1910 Holden was M.P. for the Heywood division of Lancashire. In 1909 he was made a baronet. He died July 23, 1919.

HOLDEN, SIR ISAAC (1807-97). British manufacturer. Born at Hurler, near Paisley, May 7, 1807, he invented a wool-combing machine which proved the foundation of his fortune. He founded the firm of Isaac Holden & Sons, a wool-combing concern at Bradford with a factory in France. He was Liberal M.P. for Knaresborough, 1865-68; for the W.R., Yorkshire, 1882-85; and for Keighley, 1885-95. He was made a baronet in 1893, and died Aug. 13, 1897. His son, Sir Angus Holden, was made Baron Holden of Alston in 1908.



Holborn, London. Old houses at Staple Inn, dating from Elizabethan days, restored in 1886

HOLDERNESS. District of Yorkshire (E.R.). In the S.E. portion of the county, it contains Beverley, Hedon, Hornsea, and

Pattingham. The division returns one member to Parliament. The family of Daroy were earls of Holderness from 1682 to 1778, when the estate passed to the duke of Leeds.

HOLE SAMUEL REYNOLDS (1819-1904) British divine. Born Dec. 5, 1819, the son of a brewer at Newark, he went to Oxford and was ordained. For many years he was vicar of Cauntton, near Newark. In 1887 he was made dean of Rochester, and he was there until he died, Aug. 27, 1904. Dean Hole was a sportsman of the old school, a famous grower of roses, and a great friend of John Leech and other members of the Punch staff. His books include *A Book about Roses*, 1869, *Memories*, 1892, and *More Memories*, 1894.

HOLE, WILLIAM (1846-1917). British painter and etcher. Born at Salisbury, Nov. 7, 1846, he executed important mural paintings in the National Gallery and Municipal Buildings, Edinburgh. He became A.R.S.A., 1878, and full member, 1889. He died Oct. 24, 1917.

HOLFORD, SIR GEORGE LINDSAY (1860-1926). British art collector. Born June 2, 1860, the son of Robert S. Holford, he inherited from his father in 1892 the art collections at Weston Birt, Gloucestershire, and Dorchester House, London. In 1923 the prints and drawings were sold for £28,000; in 1927 the Italian pictures for £156,000; and in 1928, in one day, Dutch and Flemish pictures fetched £364,000. These included a Rembrandt which fetched 44,000 guineas. The chief books were sold to an American for £200,000.

HOLINSHED, RAPHAEL (c. 1520-80). English chronicler. He was employed as translator by Reginald Wolfe, printer to Queen Elizabeth. Wolfe planned a universal cosmography, and Holinshed became responsible for the form in which it appeared (in two folio volumes), in 1577, as *The Chronicles of England, Scotland, and Ireland*. A second edition, in three folio volumes, appeared in 1587, and there was a reprint in six volumes in 1807-8. The work, known as Holinshed's *Chronicles*, was used by Shakespeare for his historical plays.

HOLKHAM HALL. Seat of the earl of Leicester. In Norfolk, near the coast, it is a great 18th century Palladian house of white brick. Kent was the architect, and it was erected by Thomas Coke, 1st earl of Leicester. It contains some fine rooms, especially the picture gallery. The estate was bought in 1659 by John Coke, a son of Sir Edward Coke. Here Coke's nephew and successor, the earl known as Coke of Norfolk, carried out his agricultural experiments. Pron. Ho-kum.

HOLL, WILLIAM (1771-1838). British engraver. Taught his trade by Benjamin Smith, he made a speciality of portrait work, and was largely employed by Lodge in his *Portraits*, 1821. His son William (1807-71) was a steel engraver of considerable merit. He worked for Lodge and engraved pictures by Frith, Baxter, Faed, Richmond, Goodall, and others. He died in London, Jan. 30, 1871. See illus. pp 291, 463, 465, 579.

HOLLAND. District of Lincolnshire, the region around the Wash. It is an administrative co. with its own county council, which meets at Boston.

HOLLAND. Country of Europe, the nucleus of the kingdom of the Netherlands. The name means lowland and was first given in 1064 to a county which grew from a small district round Dordrecht till it included all the land between the Texel and the Maas. It had its own rulers from about 920. In the 15th century Holland and Zeeland were ceded to Philip the Good of Burgundy. They then passed with the rest of the Burgundian lands to Mary, daughter of Charles the Bold, and next to her son Philip, a Hapsburg. Philip's successor was his son, Charles V, and then came Philip II of Spain. Holland

and the northern provinces of the Netherlands threw off the sovereignty of Spain and were later recognized as the Dutch republic. The name is now borne by two provinces of the kingdom of the Netherlands (q.v.).

HOLLAND, BARON English title borne 1763-1859 by the family of Fox. Its founder was Sir Stephen Fox (1627-1716). In 1763 his younger son, Henry (1705-74), the politician, was made Baron Holland. In 1767 Lord Holland bought the residence he named Holland House. His eldest son, Stephen, succeeded to the title, and in 1774 Stephen's son, Henry Richard Fox (1773-1840), became 3rd baron Holland. A famous Whig politician, he and his wife, Elizabeth Vassall (1770-1845), made Holland House a great social centre. The title expired on the death of their son Henry Edward (1802-59).

HOLLAND, HENRY SCOTT (1847-1918). British divine. Born Jan. 27, 1847, he was



H. Scott Holland,
British divine
Elliott & Fry

educated at Eton and Oxford and for twelve years (1872-84) was an influential figure in the university. In 1872 he was ordained and in 1884 he was made canon residentiary of St. Paul's, where he remained until 1910. From 1910 until his death, March 17, 1918, he was regius professor of divinity at Oxford. Holland was

an advocate of social reform and politically an advanced Liberal.

HOLLAND, SIR THOMAS HENRY (b. 1868). British scientist. Born Nov. 22, 1868, of Canadian parentage, he was director of the geological survey of India 1903-09 and professor of geology in the university of Manchester in 1909-18. He was rector of the Imperial College of Science and Technology, 1922-29; president of the British Association, London, 1928; and was chosen principal of Edinburgh University in 1929. He was elected F.R.S. in 1904 and knighted in 1908.

HOLLAND HOUSE.

Historic London mansion between Kensington Road and Uxbridge Road, Kensington. A notable example of Jacobean architecture, its centre building and turrets, 1607, were built by John Thorpe for Sir Walter Cope. The house was bought by Henry Fox, 1st Baron Holland, and on the death of Lady Holland, widow of the 4th baron, in 1889, the property passed by purchase to the earl of Ilchester. Joseph Addison died in Holland House in 1719 three years after his marriage to the widow of the 3rd earl of Warwick.



Holland House, London. The Jacobean mansion seen from the garden

HOLLAND PARK. District of West London situated between Notting Hill and Kensington, with a station on the C.L.R. In Holland Park Road is Leighton House, the property of the nation.

HOLLANDS. Variety of gin sometimes called Schiedam or Schnapps. It is manufactured near Schiedam in Holland, from barley, malt, and rye. See Gin.

HOLLAR, WENCESLAUS (1607-77). Bohemian engraver. Born at Prague, July 13, 1607, he became drawing-master to the prince of Wales (afterwards Charles II), and is remembered especially for his map of London after the Great Fire and his views of Oxford, Cambridge, Hull, Richmond, Greenwich, and a number of German towns. He died March 28, 1677. See illus. p. 218.

HOLLES, DENZIL HOLLES, 1ST BARON (1599-1680). English politician. A younger son of John Holles, 1st earl of Clare, he was born Oct. 31, 1599, and, entering parliament in 1624, had a hand in most of the great events that preceded the Civil War. Holles was one of the Five Members and a member of the committee of safety. He went to The Hague to invite the king to return. In 1661 he was made a peer. From 1663 to 1666 he was ambassador in Paris; in 1667 he arranged with Holland the treaty of Breda. Later he took up an attitude of opposition to Charles II. He died Feb. 17, 1680. The title became extinct when the 3rd baron died in 1694.



1st Baron Holles,
English politician

HOLLINGSHEAD, JOHN

(1827-1904). British journalist and theatrical manager. Born in Hoxton, London, Sept. 9, 1827, he was a voluminous writer for many years, and assisted many public movements such as that for the better government of London and the agitation for copyright reform.

After three years as stage director of the Alhambra, in 1868 he became manager of the Gaiety Theatre in the Strand, where he had many successes. He died Oct. 10, 1904.

HOLLOWAY. Name of a district in the met. hor. of Islington, London, N. The district includes the Caledonian (Metropolitan Cattle) Market, 1855, enlarged 1907; Northern Polytechnic, opened 1897; and Holloway prison, a castellated structure built in 1853-54, mostly for women serving short sentences. There are stations on the L.M.S., L.N.E., and Piccadilly (Tube) Rlys.

HOLLOWAY, THOMAS (1800-83). Patent medicine maker. Born at Devonport, Sept. 22, 1800, the son of a Plymouth baker, he came to London in 1828, and nine years later concocted an ointment and a pill which he advertised extensively. He acquired a handsome fortune, and, on Lord Shaftesbury's advice, set aside a large sum of money to found a sanatorium, which was opened at Virginia Water in 1855. He also, at a cost of £600,000, founded at Mount Lee, Egham, Surrey, Holloway College for the higher education of girls, and formed a picture gallery on which he spent more than £83,000. He died at Tittenhurst, Berkshire, Dec. 26, 1883.

HOLLY. Hardy evergreen tree of the order, Aquifoliaceae, and genus *Ilex*. *Ilex aquifolium* is a native of Britain, but foreign species were introduced from N. America as far back as the year 1726. The leaves are



Holly. Leaves and berries of *Ilex Hendersoni*. Top, leaves and berries of the British species

usually spiny and dark green, though there are smooth and variegated sorts, and the red or yellow berries are borne in winter. Holly makes one of the best hedges, but needs constant care. Its branches are much used for decorations at Christmas. *Ilex paraguayensis* yields maté, or Paraguay tea.

HOLLYHOCK (*Althaea rosea*). Hardy perennial herb of the order Malvaceae. A native of China, it was introduced in 1573. The leaves are large, rough and rounded, and it bears a single spike (8 ft. to 10 ft.) of white, pink, yellow, or purple flowers, either single or double. It will thrive in any soil not too light.



Hollyhock, leaves and flowers; bottom, right, the "cheese" containing seeds, and a single seed

HOLLYWOOD. District in California, U.S.A., part of the city of Los Angeles and the headquarters of the film industry. It lies to the west of Los Angeles proper, quite near the coast, and owes its prosperity largely to its clear climate and beautiful surroundings. The town covers 26 sq. m., and here are the studios and other buildings of over 50 firms engaged in the production of motion pictures. There are other industries, and the buildings include stores, hotels, and banks. See Film.

HOLMBY HOUSE. Northamptonshire mansion. The existing Holmbury (or Holdenby) House was built in the 19th cent., its predecessor being one of the great 16th cent. domestic palaces. Here Charles I was detained after his surrender at Newark-on-Trent. There are a few remains of the earlier building.

HOLME CULTRAM. Urban dist. (Holme Abbey) of Cumberland. It is 5 m. N.W. of Wigton. The church of S. Mary occupies the site of a 12th cent. Cistercian abbey and was restored in 1885. Pop. 4,724.

HOLME LACY. Village of Herefordshire. It is 5 m. S.E. of Hereford, on the G.W.R. Holme Lacy House is a fine 17th cent. building containing a splendid collection of pictures and wood carvings. In 1929 the estate was presented to the Herefordshire County Council. In the Norman church, dedicated to S. Cuthbert, are monuments of the Scudamore family.

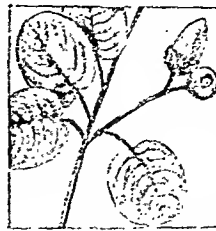
HOLMES, OLIVER WENDELL (1809-94). American essayist and poet. Born at Cambridge, Mass., Aug. 29, 1809, he was the son of a Unitarian minister. Educated at Andover and Harvard, he began to study law, but later turned to medicine. After 1849 he devoted himself to literature. The best of his prose and poetry is included in the series *The Autocrat of the Breakfast Table*, 1858; *The Professor at the Breakfast Table*, 1860; and *The Poet at the Breakfast Table*, 1872. In these works humour, fancy, and poetry are blent into a fascinating whole which is informed with a broad humanitarianism. His novels, *Elsie Venner*, 1861, *The Guardian Angel*, 1867, and *A Mortal Antipathy*, 1885, occupy a subsidiary position. His other works include biographies of J. L. Motley and R. W. Emerson, *Our Hundred Days in Europe*, and *Over the Teacups*. He died Oct. 7, 1894.



O. W. Holmes, American writer After A. Scholl, 1879

HOLMFIRTH. Urban dist. and market town of Yorkshire (W.R.). It is 6 m. S. of Huddersfield, on the L.M.S. Rly. Stone is quarried and woollens are manufactured. Market day, Tues. Pop. 10,500.

HOLMIUM. Rare-earth metal, symbol Ho; atomic weight 163.5, atomic number 67. With thulium it was isolated from erbium earth by Cleve in 1879, and is found in gadolinite, samarskite, and other minerals.



Holm Oak. Leaves and acorn of the evergreen tree

HOLM OAK (*Quercus ilex*). Evergreen tree of the order Amentaceae, a native of S. Europe and N. Africa. The leathery leaves, which last for two years, vary in form from oblong to lance-shape, and may be toothed or not. The underside is whitish with a downy covering. The long, slender acorns ripen in their second year.

HOLOFERNES. Personage mentioned in the apocryphal book of Judith as the chief captain of the army of Nebuchadnezzar; also a pedantic schoolmaster in Shakespeare's *Love's Labour's Lost*.

HOLSTEIN. District of Germany. Forming the S. portion of the Prussian prov. of Slesvig-Holstein, it stretches from Mecklenburg to the Eider, with the Elbe as its S.W. boundary. It contains several large lakes, and is famous for its horses and cattle. Kiel is the largest town. In the 14th century a count of Holstein became also ruler of Slesvig, and in 1460 Christian I of Denmark obtained possession of both. Severed from Germany in 1806-15, Holstein was, in 1864, occupied by Prussian and Austrian troops, and with Slesvig was formally surrendered. After the war of 1866, the two passed to Prussia. See Denmark; Slesvig-Holstein.

HOLSWORTHY. Urban district and market town of Devonshire. It is 46 m. W. by N. of Exeter, on the S.R. An agricultural trade is carried on. The annual horse fair is held in July. Market day, Wed. Pop. 1,416.

HOLY ALLIANCE, THE. Treaty concluded at Paris in 1815, after the final abdication of Napoleon, by Alexander I of Russia, Francis II of Austria, and Frederick William III of Prussia. They bound themselves to be guided by the principles of Christianity. The compact was a recrudescence of the notion of divine right, and its political motive was to maintain the settlement made in Europe after Napoleon's fall. The treaty was subscribed to by other European monarchs, but became an instrument for resisting revolutionary tendencies. See Europe.

HOLY CARPET. Popular name for the kisveh, or outer covering of the Ka'aba, a building in the centre of the Mahomedan temple at Mecca. Manufactured in Cairo, it is sent annually with the caravan of pilgrims to the holy city. It is of black brocade ornamented with inscriptions worked in gold. After having remained on the Kaaba for nearly a year, the kisveh is taken off, cut into pieces and sold to the pilgrims. After 15 days the new covering is put up. See Ka'aba; Mecca.

HOLY COAT. Relic, preserved in the cathedral at Treves (Trier). It is alleged to be the seamless coat of Christ for which the soldiers cast lots at the

Crucifixion, and to have been brought from Palestine by S. Helena when she discovered the Holy Cross. It is first mentioned in history in 1106.

HOLYHEAD. Urban dist., seaport, and market town of Anglesey, Wales. It stands on the N. side of Holy Island, a terminus of the L.M.S. Rly., and is the port of departure for steamers to Dublin. It has a fine harbour of 267 acres. Market day, Sat. Pop. 11,608.

Holy Island, or Holyhead Island, is an island to the W. of Anglesey, Wales, connected with the county by an embankment over which passes the L.M.S. Rly. See Anglesey.

HOLY ISLAND OR LINDISFARNE. Island (at certain states of the tide) off the coast of Northumberland. S. Aidan founded a monastery here in 635, and a Benedictine priory church was erected on its site in 1093. Pop. 359.

Holy Land. Name given by Christians to Palestine (q.v.) because of its association with Jesus Christ.

HOLYOAKE, GEORGE JACOB (1817-1906). British secularist. Born April 13, 1817, at Birmingham, he early identified himself with the Chartist movement. In 1842 he was imprisoned for blasphemous utterances in a lecture. He invented the word secularism. He wrote a *History of Co-operation*, *Lives of Tom Paine*, *Robert Owen* and *J. S. Mill*. Sixty Years of an Agitator's Life, and *Bygones Worth Remembering*. He died at Brighton, Jan. 22, 1906.



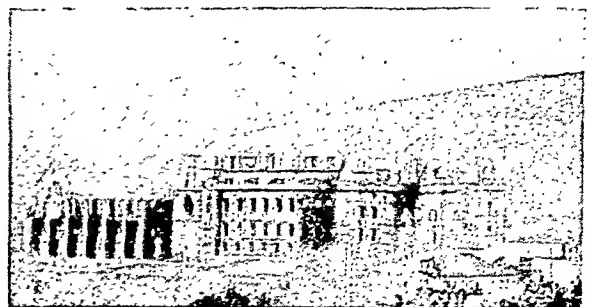
G. J. Holyoake, British secularist Elliott & Fry

HOLY OF HOLIES. Inner chamber of the Jewish Tabernacle (Ex. 26) and of Solomon's Temple (I Kings 6). The Holy of Holies contained the Ark of the Covenant See Tabernacle; Temple.

HOLY ORDERS. Name given to the estate or degree of those admitted to the Christian ministry by the laying on of hands of a lawfully ordained bishop. As recognized in the Church of England there are three grades: bishops, priests, and deacons. In the Roman Church, Holy Orders include bishops, priests, deacons, subdeacons, acolytes, exorcists, readers, and door-keepers.

HOLYROOD. Name of abbey ruins and palace, Edinburgh, Scotland. The abbey, founded by David I in 1128 for Augustinian canons regular, was the scene of the marriage of James II, James III, James IV, and of Mary and Darnley. Charles I was crowned, and David II, James II, James V. and Darnley were buried here. It was reduced to ruins in 1768.

The palace was built by James IV in 1498-1503, burnt by accident Nov. 13, 1650.



Holyrood, Edinburgh. The palace from the north-west, with the abbey ruins on the left and Arthur's Seat in the background

restored by Cromwell, 1651-58, and rebuilt by Charles II, 1671-79. Prince Charles Edward held his balls and levées in the picture gallery.

1745-46, and here the lord high commissioner to the general assembly of the Church of Scotland holds his levee each May, and Scottish representative peers are elected for each new Parliament. The chief features of interest are the apartments of Queen Mary, Darnley's rooms, and the audience chamber. A dark stain on the floor outside the private apartments is said to have been made by the blood of Rizzio the Italian secretary of Mary Queen of Scots, who was murdered here, Mar. 9, 1566.

Much care has been taken to keep the structure of the palace in repair. On several occasions when King George and Queen Mary have visited Scotland the Court has been transferred to Holyrood, as in 1923 and 1927, when its ancient splendour and pageantry have been revived.

Holy Rood is the ancient name for the Holy Cross. Holy Cross Day is Sept. 14.

HOLY SPIRIT. In Christian theology, the third person of the Trinity. The evolution of the doctrine goes back to the O.T., in which the term Spirit is used to denote the Divine Activity of God in Action. The term itself, both in Hebrew and Greek (ruach and πνεῦμα), originally meant "breath" or "wind," the underlying idea being that of invisible force. The governing adjective Holy, which in the O.T. is only used on two occasions (Ps. 51 11. Isaiah 63, 10) became in the N.T. an almost inseparable element in the idea. The result was that the activity of the Spirit was almost entirely restricted to the moral and spiritual sphere.

HOLY WATER (Lat. aqua benedicta). In the R.C., Greek, and Russian Churches, water blessed by bishop or priest. It is placed in a basin or stoup at church entrances. The original idea seems to have been that worshippers should wash their hands and so be able to lift up pure hands in prayer. Its modern use is symbolical. In the Anglican communion the use of holy water was abandoned at the Reformation. See Baptism.

HOLY WEEK. To Christians, the week before Easter. The application to it of the name Passion Week is incorrect, that being the week following Passion Sunday, or the 5th Sunday in Lent. See Easter.

HOLYWELL. Urban dist. and market town of Flintshire, Wales. It stands on the Dee estuary, 4 m. N.W. of Flint on the L.M.S. Rly. The water of S. Winifred's Well is said to have curative powers. The well is covered by a Gothic chapel erected by the countess of Richmond, mother of Henry VII. Market day Mon. Pop. 3,000.

HOLYWOOD. Urban dist. and seaport town of co. Down, Northern Ireland. Situated on Belfast Lough, 4 m. N.E. of Belfast, it is a favourite seaside resort. A solemn league and covenant for the defence of the kingdom was signed here in 1644. Pop. 4,035.

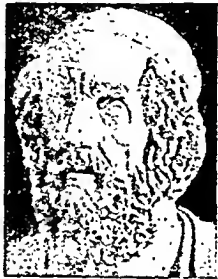
HOMBURG. Town of Germany. Situated 9 m. N.N.W. of Frankfurt, it is principally known as a pleasure resort and for its chalybeate and saline springs. The town gave its name to a kind of soft felt hat. Pop. 16,412.

HOME, DANIEL DUNGLAS (1833-86). Scottish spiritualist medium. He was born near Edinburgh, March 20, 1833, and inherited psychic gifts from his mother, Elizabeth McNeill. Taken to America as a child and adopted by an aunt, his first manifestations of occult influence were so disturbing to her that she turned the boy out of her house. Home came to England in 1855 and acquired a prodigious reputation, but Browning pilloried him in *Sludge the Medium* (1864). He died at Auteuil, June 21, 1886.

HOME COUNTIES. Name given to the counties round London. Their names are Middlesex, Surrey, Kent, Essex, Hertfordshire, Buckinghamshire, and Berkshire.

HOME OFFICE. The A government department in Great Britain. Through its head, the home secretary, the king issues all communications to his people, and on his advice exercises his right of pardon. The home secretary and his staff supervise all matters connected with prisons and prisoners and are responsible for the police and the administration of justice. Factories and mines are inspected by officials of this department, which also deals with immigration, licensing laws and burial laws. In many countries the corresponding department is called the ministry of the interior. The offices are situated in Whitehall, London, S.W.

HOMER. Homer (Gr. Homēros) is the reputed author of two famous Greek epics, the Iliad and the Odyssey. Some scholars regard him as a mythical figure. There seems, however, no reason to doubt that a poet named Homer existed and tradition describes him as blind. Seven cities, Smyrna, Chios, Colophon, Salamis (in Cyprus), Rhodos, Argos, and Athens, claimed to have been his birthplace. His period is variously placed between 1200 B.C. to 850 B.C. or later. The original home of the poems was the west coast of Asia Minor.



Homer, from the bust in the National Museum, Naples

wandering Odysseus (Ulysses) on his way back from the Trojan war, and the vengeance he exacted from the suitors of his wife Penelope. The first printed edition of Homer appeared in 1488. Many scholars think that the Iliad and Odyssey are not by the same author and that they belong to different periods of time.

The literature of Homer is vast. For the English reader, the Introduction to Homer, R. C. Jebb, 6th ed. 1896, and the English prose translations by A. Lang, W. Leaf, and E. Myers (Iliad), S. H. Butcher and A. Lang (Odyssey), are recommended. See Troy.

HOMERTON. Part of the met. bor. of Hackney, London, E. In the E. it borders Hackney Marsh. It has a station on the L.M.S. Rly. See Hackney.

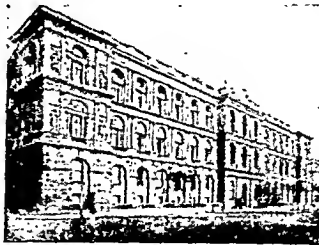
HOME RULE. Name given to the Irish movement for self-government, on constitutional lines, between 1870 and 1920.

The Home Rulers formed a party in Parliament, led by Isaac Butt and then by C. S. Parnell. They became about 80 strong, kept themselves quite free from political alliances and office holding, and carried out steadily a policy of obstruction. In 1885 Gladstone took up their cause and split the Liberal party. His first Home Rule bill (1886) was thrown out by the Commons; the second (1893) suffered the same fate in the Lords.

The question remained suspended from 1893 till 1912, when another Home Rule Bill was introduced by H. H. Asquith's government. Passed through the Commons by 367 votes to 257 (Jan. 16, 1913), it was thrown out by the Lords by 326 to 69. Re-introduced on May 7, 1913, the bill was again rejected by the Lords on July 15. The final fight for the bill

began in the Commons on March 5, 1914, when modifications affecting Ulster were introduced. The third reading was carried by 351 against 274; and after a deadlock caused by the Lords' amendments received the royal assent on Sept. 18, 1914.

The outbreak of the Great War altered the situation and the Act was not put into operation, and for the time being Home Rule passed out of the sphere of practical politics. The Easter rising of 1916 and the growth of Sinn Féin made Home Rule as such a controversy of the past, and a new Government of Ireland Act was passed in Dec., 1920. See Ireland; Parnell, C. S.



Home Office, London. The offices in Whitehall, built in 1875

HOMICIDE (Lat. homo, man; caedere, to kill). In law, the taking of a human life. Homicide may be (1) felonious, murder, manslaughter, or suicide; (2) justifiable; or (3) excusable. Justifiable homicide is where the life is taken in execution of a legal duty. Excusable homicide is by misadventure or in self-defence. The former is where a man doing a lawful act by accident kills another; the latter covers acts in defence of wife, children, etc. See Manslaughter; Murder.

HOMINY (W. Indian). Inner part of the maize berry, coarsely ground. Porridge is made with it as well as croquettes, fritters, and puddings.

HOMOEOPATHY (Gr. homoios, like; pathos, feeling). System of curing diseases by giving drugs in minute quantities to produce in the patient symptoms similar to those the same drugs produce in a healthy person. The term homoeopathy, and the scientific investigation on which it is based are due to Samuel Hahnemann (1755-1843) who was the first to think of the possibility of using the virus of a disease as a remedy. This led to vaccination, inoculation, and serum treatment. In many ways the discoveries of Hahnemann have profoundly influenced the medical practice of the present day. Homoeopathy constitutes the acme of individualism in the use of medicine. See Medicine.

HOMOLOGY. Morphological term for an affinity of structure. All organs of animals and plants which are based upon a similar morphological or structural type are termed homologous. The trunk of an elephant is the homologue of, or homologous to, the nose of other mammals. The arms of a human being are homologous both to the wings of birds and to the fore limbs of quadrupeds. See Analogy; Embryology.

HONDURAS. Republic of Central America. It lies between lat. 13° and 16° N., and long. 83° and 89° W. Area, 44,275 sq. m. The surface is mainly mountainous, but the coastal regions are low-lying and swampy. The chief ports are Amapala on the Pacific, Puerto Cortés on the Gulf of Honduras, Trujillo, and Omoa. The capital is Tegucigalpa. The forests are extensive, the mineral wealth is great, but transport is difficult.

Among the principal products are bananas (the chief crop), lemons, oranges, corn, beans, rice, wheat, coffee, tobacco, rubber, copaiba, valuable woods, sugar, coconuts, hides, copal, ipecacuanha, vanilla, indigo, and sarsaparilla. The castor oil plant and henequen are being cultivated. Eighty per cent of the foreign trade is with the United States.

Honduras is governed by a president and a council of six. Congress consists of 43 members. A permanent commission of five meets when congress is not sitting. The religion is mainly Roman Catholic. Education is free, compulsory, and secular. There is a central

university at Tegucigalpa. The language is Spanish. The pop. is 773,000, chiefly Indians, with Spanish admixture, but there are large numbers of negroes in the N. The first settlement was established in 1524, and Honduras remained a Spanish possession for three centuries. See Central America.

HONDURAS, BRITISH. Crown colony of Central America, on the Caribbean Sea. Its area is 8,590 sq. m. The chief exports are cedar, mahogany, log-wood, bananas, sponges, and tortoiseshell. Coffee, cacao, and plantains are extensively cultivated, and stock-raising is carried on. The capital and only port is Belize. The colony is administered by a governor assisted by executive and legislative councils. The pop. (50,000) includes about 1,000 whites, the rest being negroes, half-breeds, and Indians. The colony was settled towards 1800, but it was not until 1836 that Great Britain secured its possession. See Maya.

The Gulf of Honduras is a wide inlet of the Caribbean Sea between Honduras, Guatemala, British Honduras, and Yucatan. It contains Turneffe and Bay Islands, besides a large number of small islands.

HONE, WILLIAM (1780-1842). British bookseller and author. Born at Bath, June 3, 1780, he wrote a number of successful political satires: *Ancient Mysteries Described*, 1823, dealing largely with the old miracle plays; *Every-day Book*, *Table Book*, and *Year Book*, issued serially, 1826-27; *Facetiae and Miscellanies*, 1827; and edited *Strutt's Sports and Pastimes*, 1830. He was a friend of Charles Lamb, and worked for the freedom of the press and the promotion of cheap literature. He died at Tottenham, Nov. 6, 1842.

HONESTY (*Lunaria annua*). Annual or biennial herb of the order Cruciferae. It is a native of Europe, and has heart-shaped,



Honesty. Left, stalk with foliage and flowers. Right, seed-vessels

toothed leaves, and terminal sprays of lilac flowers. The seed-vessels are flattened out to a broad oval-oblong disk, from which, when ripe, the two valves fall off, leaving the seeds attached to a thin, silvery partition. They are then dried and used for decorations, as "everlastings."

HONEY. Semi-fluid substance produced by certain species of bees for the nourishment of their larvac. In general use the word refers to honey produced by the domesticated hive or honey-bee (*Apis mellifica*), which obtains as raw material the nectar of flowers. Honey consists chiefly of levulose and dextrose, the former being the fluid portion. Fresh honey should be of a bright straw-colour, and have a pleasant, delicate flavour and aroma.

Honeycomb is the name given to the series of hexagonal waxy cells used by bees to store their honey and pollen and to contain their brood. See illus. p. 220.

HONEYCOMB MOTH. Name given to small moths of the genus *Galleria*, better known as wax moths. In the larval stage they

live in beehives and in the nests of wild bees, feeding upon the wax of the combs. They thus ruin the comb for commercial purposes.

HONEY EATER.

Name given to the various species of Australasian birds included in the family Meliphagidae. They have beautiful plumage, long, curved beaks and cleft tongues, and feed on insects and nectar. Their plumage is greatly in demand.



Honeysuckle. Flower of *Lonicera periclymenum*

HONEYSUCKLE. Graceful climbing shrub of the order Caprifoliaceae and genus *Lonicera*. It has fragrant, tubular flowers of white, yellow, and all shades from rose to crimson, with the corolla generally two-lipped. The leaves are smooth and opposite, and the fruit is a two-celled many-seeded berry. Another name for the common British species is woodbine.

HONFLEUR. Seaport of France, in the dept. of Calvados, nearly opposite Havre. Overlooking the town on the W. is the chapel of Notre Dame de Grâce, a favourite shrine of pilgrims for sailors. Pop. 8,707.

HONG KONG. Island and British Crown colony off the coast of Kwangtung prov., China. It was ceded to Great Britain in 1841 and is 11 m. long and from 2 m. to 5 m. wide.



Hong Kong. General view of the harbour from Victoria Peak

The colony also includes Kowloon, a strip of territory on the mainland ceded in 1860. To this was added in 1898, under lease for 99 years, the peninsula S. of a line drawn between Deep Bay and Mires Bay, together with the islands of Lantau and Lamma. The whole colony comprises an area of about 345 sq. m. with an estimated pop. of 1,075,000. Hong Kong is a free port and an important distributing centre, and the harbour is one of the finest in the world. The colony is administered by a governor, assisted by executive and legislative councils. Local industries include shipbuilding and engineering works. There is a university, founded in 1911.



Hong Kong. Map of the important British Crown colony on the coast of China, showing the island and the Kowloon extension on the mainland

HONITON. Borough and market town of Devonshire. It is 16 m. from Exeter on the S.R., and since Elizabethan days has been celebrated for lace-making. Honiton gives its name to a co. div. returning one member to Parliament. The grammar school of All Hallows dates from 1614. A three days' fair, dating back to 1221, is held on the feast of S. Margaret. Market day, Sat. Pop. 3,090.

HONLEY. Urb. dist. and village of Yorkshire (W.R.). It is 3½ m. S. of Huddersfield on the L.M.S. Rly. There is a large woollen industry. Pop. 4,700.

HONOLULU. City, commercial centre, seaport, and capital of the Hawaiian Islands. It stands on the S. coast of Oahu Island. Built on modern lines, with electric lighting and electric tramways, it is charmingly placed among fruit-bearing and other trees, and the climate is healthful and temperate. Several



Honolulu. The beach, looking towards Diamond Head, an extinct crater

lines of steamships call, and wireless communication has been established. The products include sugar, rice, pineapples, bananas, tobacco, coffee, sisal hemp, and rubber. Machinery is manufactured and shipbuilding carried on. The pop. of 113,000 is cosmopolitan, but largely consists of Polynesians, Japanese, and Chinese. See Hawaii.

HONORIUS, Roman emperor of the West, 395-423. He was a son of Theodosius the Great and brother of Arcadius, emperor of the East. During his reign Britain secured virtual independence, the Vandals settled in Spain, and Gaul was occupied by Visigoths, Franks, and Burgundians. In 410 Alaric king of the Visigoths took and

sacked Rome. Honorius spent most of his time in poultry-breeding in the marshes of Ravenna, where he died Aug. 27, 423.

HONORIUS. Name of four popes. Honorius I, pope 625-638, was notable for his condemnation as a heretic, 630-631. By his advice S. Birinus evangelised the West Saxons. Honorius II, pope 1124-30, while holding the office of cardinal-bishop of Ostia, concluded the concordat of Worms, 1122, with Henry V. Honorius III, pope 1216-27, was distinguished for personal learning and his zeal for the spiritual reform of Europe and the recovery of Jerusalem. Honorius IV was 75 when elected pope in 1285, and died two years later.

Honor Oak. Residential district and park in the S.E. of London. It is in the met. bor. of Lewisham, with stations on the S.R.

HONOUR. Name given in the Middle Ages to a large estate held by one lord. It consisted of two or more manors, and its owner was known as the lord of the honour. One of the largest and most famous honours in England was that of Clare. See Feudalism.

HONOURABLE. Title of honour. In the United Kingdom it is applied to the younger sons of earls and to the children of viscounts, barons, and life peers, to maids of honour, the lord provost of Glasgow, justices of the high court except lords justices and lords of appeal, the House of Commons collectively and individually, to some Indian and Colonial officials, and to the Honourable Artillery Company and the Inns of Court.

HONOURABLE ARTILLERY COMPANY. British regiment. It was founded in 1537 and since 1641 has held the training ground near Bunnhill Fields. The regiment, which includes infantry, forms part of the Royal Regt. of Artillery, but heads the list of Territorials. Four of its members who emigrated founded in 1638 the Ancient and Honourable Artillery Company of Boston, U.S.A., the oldest military unit in America. In the Great War the were 5,961. Over 4,000 were granted commissions. The orders and decorations won by the members totalled 225, including two V.C.'s.



Honourable Artillery Company badge

HONSHU or **HONDO.** Largest island of Japan. It has a coastline of over 4,700 m. Including 167 adjacent small islands, its area is 87,426 sq. m. Many of the peaks are volcanic in origin. Fuji is probably the most perfect volcanic cone in the world. In the S. is the celebrated lake of Biwa. The numerous rivers are all short. Earthquakes are prevalent. At the close of the summer typhoons occur. The capital is Tokyo; other large towns are Yokohama, Kyoto, Hiroshima, Kobe, Osaka, and Nagoya. The minerals include gold, silver, copper, lead, and iron. Pop. 59,736,822.

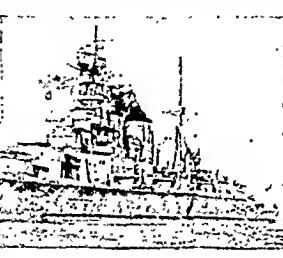


Honourable Artillery Company uniforms. Left, gunner; right, infantryman

HONTHORST, GERARD VAN (1590-1656). Dutch painter. Born at Utrecht, Nov. 4, 1590, his earlier work was largely inspired by Caravaggio. In his last years he virtually confined himself to portraiture. He died at Utrecht, April 27, 1656.

HOOGH, PIETER DE (c. 1632-81). Dutch painter. He was born at Rotterdam, and his composition and drawing are masterly, his colour cool and brilliant. There are fine examples of his art in the National Gallery, London, and the Rijks Museum, Amsterdam. He died at Haarlem.

HOOD (A.S. hōd; cf. Eng. hat). Originally a covering for the head, but now mainly an addition to an academic robe. In England in the Middle Ages it was worn by men and women, rich and poor alike, until, in the 15th century, its place was taken by the hat. Every minister when officiating in church, if a graduate, is required to wear the hood proper to his degree. Receivers of



H.M.S. Hood, British battle-cruiser completed in 1919
S. Cribb, Southsea

Lambeth degrees wear the hood of such degrees as are worn at the university of the archbishop who gives them. Distinctive hoods have been adopted also by various theological colleges.

HOOD. British battle cruiser. Completed in 1919, she cost approximately £6,000,000, is 860 ft. long and 104 ft. in beam, displaces 41,200 tons, and has engines of 140,000 h.p., giving a speed of 31 knots. Her armament consists of eight 15-in., twelve 5.5-in., and four 4-in. anti-aircraft guns. See diagram, p. 210.

HOOD, SAMUEL HOOD, VISCOUNT (1724-1816). British sailor. Born at Thorneombe, Dorset, Dec. 12, 1724, he entered the navy in 1741. In 1780 he was dispatched in command of a squadron to the W. Indies and N. America to reinforce Rodney. He vainly attempted to prevent De Grasse from blockading the Chesapeake, 1781, and made a futile attempt to eject the French from St. Christopher, 1782; but he outwitted De Grasse off St. Kitts and took part in the victorious action off Dominica. Made an Irish baron in 1782, he was M.P. for Westminster in 1784, and commander-in-chief in the Mediterranean in 1793, when he blockaded Toulon and reduced Bastia, 1794. Made a viscount in 1796, he became governor of Greenwich Hospital, holding this post till his death, Jan. 27, 1816.

HOOD, HORACE LAMBERT ALEXANDER (1870-1916). British sailor. Second son of 4th Viscount Hood, he was born Oct. 2, 1870, and joined the Britannia training ship in 1883. He was in command of the 3rd British battle-cruiser squadron in the battle of Jutland, and distinguished himself according to Sir D. Beatty's dispatch, "in a manner worthy of the spirit of his great ancestors." His flagship Invincible sank with all hands save six, and Hood went down with her, May 31, 1916.



Viscount Hood, British sailor
After Reynolds



H. L. A. Hood, British sailor

HOOD, SIR SAMUEL (1762-1814). British sailor. Born Nov. 27, 1762, he served in the W. Indies and the Mediterranean under his cousin, Lord Hood, and under Nelson at Santa Cruz and at the battle of the Nile, 1798. As commander-in-chief of the Leeward Islands, 1802, he distinguished himself in actions against French cruisers. Vice-admiral in 1811, in 1812 he was commander-in-chief of the East Indies. He died at Madras, Dec. 24, 1814.

HOOD, THOMAS (1799-1845). British poet. Born in London, May 23, 1799, of Scottish descent, he began life in a city office at the



Thomas Hood, British poet
Nat. Port. Gall.

age of 13. He learnt the art of engraving, but gave it up in 1821 for a post on The London Magazine, and came in contact with De Quincey, Hazlitt, and Lamb. In 1829 Hood became editor of an annual called The Gem, in which was published his poem of Eugene Aram. In 1840 he was made editor of The New Monthly Magazine, and then edited Hood's Magazine. He died in London, May 3, 1845. In some of his poems, such as The Song of the Shirt, 1843, and The Bridge of Sighs, there is a noble simplicity associated with the finest poetry.

HOOD, TOM (1835-74). British humorist. He was the only surviving son of Thomas Hood. Born at Wanstead, Essex, Jan. 19, 1835, he was educated at Pembroke College, Oxford. Taking to journalism, in 1865 he became editor of Fun, to which he contributed jokes, verse, and caricatures. He also wrote one or two novels. He died at Peckham, Nov. 20, 1874.

HOOGHE. Village of Belgium, in the prov. of W. Flanders. Situated on the Ypres-Menin road, 3 m. E. of Ypres, it was destroyed in the Great War. It was the headquarters of Sir J. French in the first battle of Ypres, and from its château he watched the temporary break in the British line at Gheluvelt and the recapture of the latter. The first and second battles of Ypres brought the Germans nearer to Hooge, which they took in the gas attack of May, 1915. It was here in the July following that the Germans for the first time used flame-throwers against British troops. The site of Hooge was retaken by the 8th division on July 31, 1917. See Flanders, Battle of; Hill 60; Ypres.

HOOGHLI, or HOOGHLY. Western arm of the Ganges delta, India. It is the most important channel by which that river flows into the Bay of Bengal. The name is given to a dist., subdivision, and town in the Burdwan division, Bengal. Of the total area of 1,188 sq. m., about half is under cultivation. Hooghli town forms a municipality with Chinsura. Pop., dist., 1,080,142; town, 29,938.

HOOK OF HOLLAND (Dutch, Hoek van Holland). Point and village of the Netherlands in the prov. of S. Holland. The passage by steamer from Harwich (Parkeston Quay), 120 m., takes about seven hours, and trains to Rotterdam, Amsterdam, Cologne, and Berlin run in connexion with the boats.

HOOK, THEODORE EDWARD (1788-1841). British wit, novelist, and dramatist. Born in London, Sept. 22, 1788, he was educated at Harrow and Oxford. In 1820 he started John Bull, a Tory journal which, conducted with astonishing vigour, overflowing wit, and incredible scurrility, brought him a substantial



Theodore E. Hook, British writer

income. His nine volumes of novels, under the title of *Sayings and Doings*, appeared in 1826-29. His other novels include *Maxwell*, 1830, perhaps his best; *Jack Brag*, 1837; and *Births, Deaths, and Marriages*, 1839. He was notorious for playing practical jokes. He died at Fulham, Aug. 24, 1841.

HOOKAH (Arab. huggah, vase, bottle). Oriental water tobacco-pipe. Its chief essential feature is a vase containing water, sometimes scented, through which the smoke is passed and cooled. The smoke is drawn from the bowl through a tube into the water, and thence by a long, flexible tube into the mouth of the smoker. Hookahs are made of porcelain, glass, or metal, etc., and are often richly decorated.

HOOKER, SIR JOSEPH DALTON (1817-1911). British scientist. Son of Sir W. J. Hooker, he was born at Halesworth, Suffolk, June 30, 1817 and educated at the university of Glasgow. He accompanied Sir James Ross to the Antarctic, took part in botanical expeditions to N. India and other places, was director of Kew, 1865-83, and president of the Royal Society. 1872-77, being knighted in the latter year. Awarded the O.M. in 1907, he died Dec. 10, 1911.



Sir Joseph Hooker,
British scientist

He published *Student's Flora of the British Islands*, 1870; and the important *Genera Plantarum* (with Bentham), 1862-83. His other writings include *Botany of the Antarctic Expedition*; *Handbook of the New Zealand Flora*; and *Himalayan Journal*.

HOOKER, RICHARD (c. 1553-1600). English theologian. Born at Heavitree, a suburb of Exeter, he was educated at Exeter and at Corpus Christi College, Oxford. His *Treatise on the Laws of Ecclesiastical Polity*, 1594, is the earliest important work of the kind in English, and won for its author the epithet "judicious." It was designed to fill eight books, but only five were printed in the author's lifetime. The treatise is a masterpiece of logical argument and a classic in respect of the beauty of its English prose. The best edition is that of Keble, revised by Dean Church and Canon Paget, 1888, including Izaak Walton's *Life of Hooker*. He died at Bishopsbourne, Nov. 2, 1600.

HOOKER, SIR WILLIAM JACKSON (1785-1865). British botanist. Born at Norwich. July 6, 1785, at 35 he had produced four important works, including *British Jungermanniac*, 1816; *Musculologia Britannica* (with T. Taylor), 1818; *Musci Exotici*, 1818-20. In 1819 he was elected prof. of botany at Glasgow. He was knighted in 1836 and in 1841 appointed director of Kew, where he died, Aug. 12, 1865.

HOOLE. Urban dist. and parish of Cheshire. It is virtually a residential suburb of Chester, from which it is 2½ m. distant. Pop. 5,990. Another Hoole is in Lancashire, being 8 m. from Preston.

HOOLEY, ERNEST TERAH (b. 1859). British financier. Born at Snettinton, Nottingham, Feb. 5, 1859, he became a stockbroker at 22, and came to London in 1896. By company promoting he acquired an immense fortune, at the height of his career commanding over £18,000,000 of capital. His success, however, was short-lived.

HOOPER, JOHN (c. 1496-1555). English divine and Protestant martyr. Born in Somerset and educated at Oxford, he was



Hookah as used in Turkey, showing the long tube through which the smoke passes

for some years a Cistercian monk at Gloucester, but became a zealous leader of the reformers. In 1552 he was given the see of Worcester to hold "in commendam" jointly with Gloucester, to which he had been nominated in 1550. Under Queen Mary he was deposed and burnt at Gloucester, Feb. 9, 1555.

HOOPOE. Genus of birds found in Europe, Asia, and Africa. The common hoopoe (*Upupa epops*) is the size of a thrush, has sandy-brown plumage with black and white bars, a crest of erectile feathers, and a long, curved, black and slender beak. It nests in hollow trees and feeds mainly on worms and insects. Its name represents its curious call.

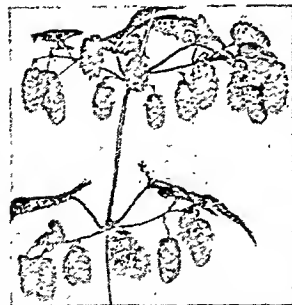
HOORN. Town and harbour in the prov. of N. Holland. It lies on the Zuider Zee, 25 m. by rly. N. of Amsterdam, has industries in tobacco and timber, is an important agricultural centre, and possesses many beautiful 17th century houses. Hoorn gives its name to Cape Horn, first rounded by Willem Schouten, a native of the town. Pop. 11,728.

HOOVER, HERBERT CLARE (b. 1874). United States president. Born at West Branch, Iowa, Aug. 10, 1874, he was educated at the Leland Stanford University, graduating as a mining engineer. In 1897 he went out to Western Australia, and afterwards to China, as an engineer. In 1900 he was in Tientsin during its siege by the Boxers. In 1914 he was chairman of the American Relief Committee in London and commissioner for relief in Belgium. He returned to the U.S.A. as food administrator when that country entered the Great War. Later he was director of European relief, and in 1921 became secretary of commerce. Elected president June 14, 1928, he took office in March, 1929.



Herbert Hoover,
American president

HOP (*Humulus lupulus*). Perennial plant of the order Urticaceae, native of temperate Europe, Asia, and N. America. It grows



Hop. Leaves and cone-like heads of hops ready for picking

wild in English hedgerows as far N. as Yorkshire, and has a stout, branching, underground root-stock, from which arise the annual stems (hoppines or hopvines), rough with small hooks, which twine with the sun round any available support to a height of 15 ft. to 20 ft. The large, rough, heart-shaped, lobed and toothed leaves are produced in opposite pairs. Each plant is either male or female. The small green male flowers, which consist of sepals and stamens only, are clustered in

branching sprays, while the females form spikes in which the flowers are bidden by overlapping bracts. After pollination by the wind these develop into cone-like heads—the hops of commerce. At the base of each scale of the cone there are glands which exude a resinous substance known as lupulin, to which the importance of the hop is due.

The cultivation of the hop for brewing dates back in Europe to the Middle Ages, but the industry was not known in England until 1524, when it was introduced from Flanders. To-day some 40,000 acres are devoted to its cultivation in Kent, Sussex, Surrey, Hants, Hereford, and Worcestershire, while additional supplies are imported from Europe and British Columbia. In medicine hop products are regarded as tonic, stomachic, and moderately narcotic. See Beer.



Hoopoe. Specimen of the crested bird W. S. Berridge, F.Z.S.

HOPE, ANTHONY Pen-name of Sir Anthony Hope Hawkins (b. 1863). British novelist. Born in London, Feb. 9, 1863, son of the Rev. E. C. Hawkins, vicar of St. Bride's, Fleet Street, he was educated at Marlborough and at Balliol College, Oxford. He was called to the bar at the Middle Temple in 1887. Of his numerous works his romantic novel *The Prisoner of Zenda*, 1894, had an immediate success, as did *Rupert of Hentzau*, 1898, *Sophy of Kravonia*, 1906, and many others. Another successful experiment was the witty social satire *The Dolly Dialogues*. He was knighted in 1918.



Anthony Hope,
British novelist
Hoppe

HOP HORNBEAM (*Ostrya carpinifolia*). Tree of the order Amentaceae, a native of S. Europe. Its leaves resemble those of the hornbeam, but in the fruit the flower-bracts as they overlap present much the appearance of the hop. An American species (*O. virginiana*) is called ironwood and leverwood.

HOPKINS, EDWARD JOHN (1818-1901). British organist and composer. Born in London, June 30, 1818, he became a chorister in the Chapel Royal. He was organist of the Temple Church from 1843-98, raising the musical service to a high degree of perfection. He died Feb. 4, 1901. Hopkins composed anthems and much other church music.

HOPPER. Name given to the hop flea, a destructive plant-eating beetle, and the larva of the cheese fly. The name is also used in the compound grasshopper.

In engineering a hopper is an enclosed chamber or vessel with sides which slope downwards for discharging purposes to a trap-door or panel. Hopper barges and hopper dredgers work on this principle.

In brewing a hopper is the vat used for infusing hops, and hopper is also a popular name for a hop picker.

HOPPNER, JOHN (1758-1810). Portrait painter. Born at Whitechapel, of German parents, April 4, 1758, he became a boy chorister in the royal chapel. George III made the boy a small allowance to enable him to study art at the R.A. schools, 1775. In 1782 he gained the gold medal for an historical painting; he was elected A.R.A. in 1792, and R.A. in 1795. His colouring is individual and brilliant, and his landscape backgrounds are



John Hoppner,
Portrait painter
Self-portrait

specially effective; his drawing, however, is often defective. He died in London, Jan. 23, 1810. See illus. pp. 4, 152, 570, 653, etc.

HORACE (65-8 B.C.). Roman poet, whose full Latin name was Quintus Horatius Flaccus. He was born Dec. 8, 65 B.C., at Venusia in Southern Italy, and died at Rome, Nov. 27, 8 B.C. After six years' schooling in Rome he was sent to Athens to complete his studies. During the civil war he served as an officer in the Republican army, and was present at its defeat at Philippi in 42. About the year 38 he was introduced by Virgil to Maecenas, the generous patron of letters. The crowning achievement of Horace's life is found in his immortal odes. The maturity of his genius is also reflected in his epistles (including the *Ars Poetica*), which, like the satires, are cast in hexameter verse. As a literary artist he is unsurpassed, and hundreds of the phrases in which he has crystallised his thoughts have passed into the currency of the educated of all time.

The most useful edition for the general student is that by E. C. Wickham with English notes, 1903, the best English verse translation being that of J. Conington, 1863.

HORATII. In Roman legend, three brothers born at one birth, who, in the war against Alba in the reign of Tullus Hostilius, were chosen to fight three brothers of the Alban army named Curiatii, also born at one birth. After two of the Horatii had been killed, the third slew the Curiatii singly, and then in anger, slew his sister, who was betrothed to one of the Curiatii. He was pardoned on account of his valour.

HORBURY. Urban dist. of Yorksire (W.R.). It is 4 m. S.W. of Wakefield, on the L.M.S. Ry. There are manufactures of woollens, worsteds, yarns, and railway wagons, and stone is quarried. Pop. 7,940

HORDER, SIR THOMAS JEEVES (b. 1871). British physician. Born Jan. 7, 1871, the son of a Swindon resident, he was trained as a doctor at St Bartholomew's Hospital, becoming assistant physician and then physician there. He made his name as a specialist, and in 1918, having served with the R.A.M.C. in France, he was knighted. In 1923 he was made a baronet and physician to the Prince of Wales.

HOREB. Another name for Sinai. It is identified with Jehel Musa. Horeh and Musa are twin peaks of Mt. Catherine, one of the traditional heights claimed as Mt. Sinai.

HOREHOUND (*Marrubium vulgare*). Perennial herb of the order Labiatae. It is a native of Europe, N. Africa, and Asia, and has heart-shaped, leathery, wrinkled leaves with rounded teeth, and white flowers in dense whorls. The whole plant is woolly and aromatic. A bitter decoction of the leaves of the horehound herb is used in domestic medicine as a remedy for coughs.

HORIZON. Circle which bounds that part of the earth's surface visible from any given point. The higher the point is above the sea level, the more extended will be the circular horizon.

HORLEY. Market town of Surrey. It stands on the Mole, 5 m. from Reigate and has a station on the Southern Railway. Market day, Wed. Pop. 6,100.

HORMONES (Gr. *hormaein*, to excite). Substances secreted by glands, like the pituitary and the thyroid, which pass into the blood and excite secretion in other glands, thus acting as chemical messengers.

HORMUZ or **ORMUZ**. Ancient city built partly on an island and partly on the mainland, in the strait connecting the Persian Gulf with the Gulf of Oman. It was founded in the 3rd century, and soon became a great centre of commerce. The island has deposits of red ochre. The name Hormuz is now held by an inland village, some 70 m. N.W. of Bandar Abbas.

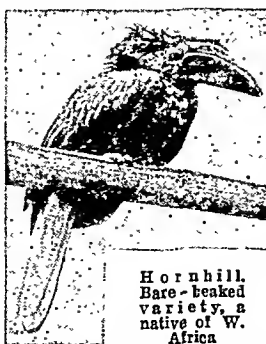
HORN or **FRENCH HORN** (Fr. *cor*; Ital. *cornò*; Ger. *Horn*). Brass instrument of tenor compass, derived from the primitive hunting-horn. When horns began to be made of metal it was found that a long tube would furnish more notes than a short one. The tubes were coiled for convenience of handling. The horn appeared in the orchestra soon after 1700. The final revolution in horn playing came with the addition of pistons on the system adopted for military brass instruments. These have given the horn a complete chromatic scale. See Clarinet; Flügel Horn.

HORN, CAPE. Southernmost point of S. America. It is the terminal point of Horn Island, in the archipelago of Tierra del Fuego, and belongs to Chile. A steep, bare, black rock, 1,390 ft. high, with pointed peaks, it was discovered by the Dutch navigator Schouten in 1616, who named it Cape Hoorn after his birthplace. Drake sighted it in 1578



Hornbeam. Specimen of a sapling of the British tree

HORNBEAM (*Carpinus betulus*). Native British tree of the natural order Amentaceae.



Hornbill. Bare-beaked variety, a native of W. Africa

Its average height is 60 ft. It is an excellent hedge plant, and forms a strong fence against horses and cattle. The timber is hard and much esteemed by the natives. **HORNBILL**. Popular name for the birds of the family Bucerotidae, which have hornlike growths at the base of their great beaks. They vary in size from about that of a rook to the dimen-

sions of a turkey, and are found especially in India and Africa. They feed chiefly on fruit and insects.

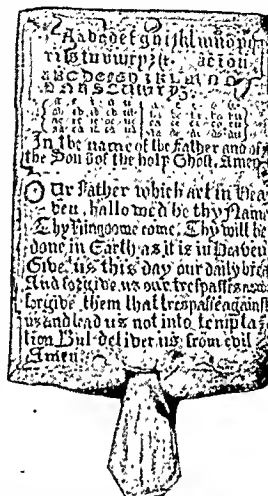
HORNBLLENDE. Mineral constituent of many igneous rocks. A greenish-black to black variety of amphibole. It is a mixture of silicate of magnesia and lime and silicate of iron and lime, and is found both in granular and crystalline masses in the Alps, Ardennes, Harz, Scottish highlands, and the lake districts of N. America. Hornblende schist is a variety of hornblende containing felspar and iron oxides. Hornblende is the name given to an igneous granite rock containing a large proportion of hornblende.

HORNBOOK. Early form of school primer used in England down to the time of George II. It was usually a flat piece of wood with a handle, on which was a sheet of paper or parchment containing the alphabet, numerals, combinations of the vowels with b, c, and d, and the text of the Lord's Prayer, protected by a layer of transparent horn. The first hornbook was made about 1450.

HORNBY, SIR GEOFFREY THOMAS PHIPPS (1825-95). British sailor. Son of Admiral Sir Phipps Hornby, he was born Feb. 20, 1825. In 1878, soon after his appointment as commander-in-chief in the Mediterranean, the Russo-Turkish War assumed so unfavourable an aspect for the Turks that Constantinople was in danger. Hornby took his fleet through the Dardanelles and anchored a few miles from Scutari. For this action he was knighted. He was commander-in-chief at Portsmouth 1882-86, and died March 3, 1895.

HORNCASTLE. Urh. dist. and market town of Lincolnshire. It is 21 m. E. of Lincoln by the L.N.E.R. and is noted for a great horse fair held annually in Aug. A Roman ditch and parts of the Roman wall are the sole reminders of the Roman station, Banovallum. Horncastle gives its name to a co. div. returning one member to Parliament. Market days, Thurs. and Sat. Pop. 3,451

HORNE, HENRY SLOAIR HORNE, BARON (1861-1929). British soldier. He was born in Caithness, Feb. 1, 1861, and was educated at Harrow and the R.M.A., Woolwich, and in 1880 obtained a commission in the Royal Artillery. He served in the S. African War, and in Aug., 1914, went to the front in charge of an artillery brigade. In Jan., 1915, he took over the 2nd division. In the following year, after commanding the 15th corps, he became leader of the 1st army and was knighted. The only artillery officer among the army commanders in the Great War, he is believed to have been the inventor, or at



Hornbook found at Middleton in 1828. The black-letter alphabet and prayer is protected by transparent horn pinned to the wood. By courtesy of the Leadenhall Press



Lord Horne, British soldier. Russell

least the improver, of the creeping barrage. Raised to the peerage, Aug., 1919, and awarded a grant of £30,000, he took the title of Baron Horne of Stirkoke, county of Caithness. He retired in 1926 and died Aug. 14, 1929.

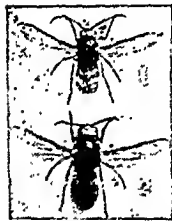
HORNE, SIR ROBERT STEVENSON (b. 1871). British politician and lawyer. Born Feb. 28, 1871, a son of the manse, he had a brilliant university career at Glasgow, was lecturer in philosophy at Bangor, was called to the Scottish bar in 1896, and became a K.C. He did valuable work in transport and at the Admiralty during the war, and having been returned as M.P. for the Hillhead division of Glasgow, was in succession minister of labour, president of the board of trade, and chancellor of the exchequer in the coalition ministry. Knighted in 1920, he retired in 1922 to take up business appointments. He was re-elected for the Hillhead division in 1924 and 1929.

HORNED VIPER (*Cerastes cornutus*). Snake found in N.E. Africa. It frequents sandy places, where it lurks half buried, leaving only the eyes, characteristic horns, and nostrils to be seen. It is very venomous, and specimens range up to 30 inches in length.



Horned viper. Specimen of the venomous N. African snake

HORNET (*Vespa crabro*). Largest of the British wasps. It is reddish in colour and nearly an inch long. It constructs its nest on the beams of outhouses or in holes in thatch or hollow trees. Its larvae are partly fed on captured bees and wasps. See Wasp.



Hornet. 1. Male. 2. Queen. One-third natural size

HORNET MOTH (*Trochilium apiformis*). Largest British representative of the clearwing moths. The wings are transparent and the margins have a narrow border of brown scales. The stout, elongated body is a clear yellow with bands of blackish brown. The forebody is dark brown also. The large, orange-coloured hind legs are extended backward. The yellow-white, maggot-like caterpillar feeds on the wood of poplar trees. See Clearwing Moth.

HORNING, LETTERS OF. Term in Scots law applied to an instrument used in process of recovery of debt. Letters running in the king's name are issued instructing officers to call upon the debtor to pay, and if he fails to obey, a caption or warrant for his arrest is granted. The process of horning and caption is now largely superseded by a simple warrant.

HORNPIPE. Name of an obsolete reed instrument popular in the Middle Ages, and also of a lively dance, which probably derived its name from the instrument. A well-known example is the sailors' hornpipe.

HORN POPPY (*Glaucium flavum*). Large annual or perennial herb of the natural order Papaveraceae. It is a native of Europe, N. Africa and W. Asia, growing on sandy seashores. Its yellow flowers are as much as 4 ins. across, and are followed by pods about 12 ins. long.



Horn Poppy. Flower of the seaside plant

HORN REEF OR HORNS REEF. Reef in the N. Sea lying off the coast of Jutland, Denmark. The battle of Jutland was fought in the vicinity, May 31, 1916. See Jutland.

HORNSEA. Urban dist. and watering place of Yorkshire (E.R.). It stands on the North Sea, 16 m. from Hull, and has a station on the L.N.E. Rly. There is a large sheet of water called Hornsea Mere covering 400 acres, while the sea has made considerable inroads on the coast. There is an old church dedicated to S. Nicholas. Pop. 6,000.

HORNSEY. Borough of N. London. It is in the co. of Middlesex, 4 m. from King's Cross on the L.N.E.R. It includes the residential districts of Crouch End, Fortis Green, Harringay, the old name of the district, and Muswell Hill. Finchbury Park and Alexandra Palace are within its borders. In the time of Henry VI the lodge in Hornsey Great Park was a residence of the duke of Gloucester, and the scene of the alleged witchcraft referred to in Shakespeare's King Henry VI. The church of S. Mary was rebuilt, excepting the tower, in 1832-33. Pop. 89,850.

HORSE. Family of the odd-toed group of the zoological order Ungulata, or hoofed animals. The horse family (Equidae) includes the horse, ass, zebra, and quagga, all closely related anatomically. All are distinguished by the peculiarity that they stand on a single toe of each foot. Originally they had five toes, but two toes have quite disappeared and the other two are now represented by the splint bones. The horse now occurs in the wild state only in Mongolia.

The domesticated breeds chiefly met with in Great Britain consist of riding, carriage, and cart horses. Riding horses include the thoroughbred, the hackney, and the pony; carriage horses are mainly Cleveland bays and coach horses; while the Shire, Clydesdale, and Suffolk punch are the three strains used for cartage and heavy work. Of agricultural horses, the Shire horse heads the list for size and weight. It stands 17 hands high, and often attains a weight of 2,000 lb. The Clydesdale takes the place of the Shire horse in Scotland, and is similar in appearance, but smaller and of rather more slender proportions. The Suffolk punch is the agricultural horse of E. Anglia. It has a short head, deep and high-arched neck, short legs, and a generally chubby shape. It stands 16 hands high, and may weigh as much as the Shire horse.

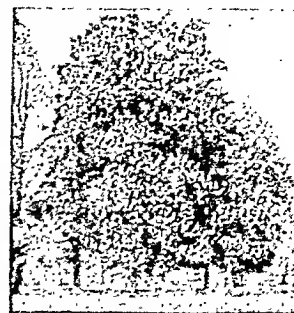
Of carriage horses the Cleveland bay may be regarded as the foundation. Standing 16 hands high, it is notable for its fine appearance and high-stepping action. It has long been bred in Yorkshire. Of saddle horses the thoroughbred, the most graceful of the British breeds, heads the list. It stands about 16 hands. The hunter is often a thoroughbred, but is more frequently a cross between that breed and the Cleveland bay. The pony is a small breed ranging in height from the nine hands of the

Shetland to about 14 hands. The term cob is applied to a sturdy short-legged horse which is suitable for saddle work.

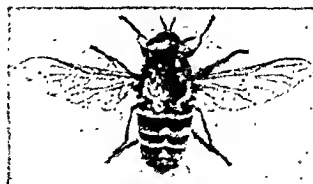
Among the annual horse shows are the one held at Ball's Bridge, Dublin; the International Horse Show, held generally at Olympia, London; and the Shire Horse Show at the Agricultural Hall, Islington. See Bit; Driving; Hippophagy; Reins.

HORSE CHESTNUT (*Aesculus hippocastanum*). Tree of the order Sapindaceae.

Native of Asia and E. Europe, it averages 60 ft. in height, and bears pyramidal spikes of pink or white blossoms. After blooming the resulting seed, or nut, encased in its green spine-covered case, becomes the conker, dear to schoolboys. See Chestnut.

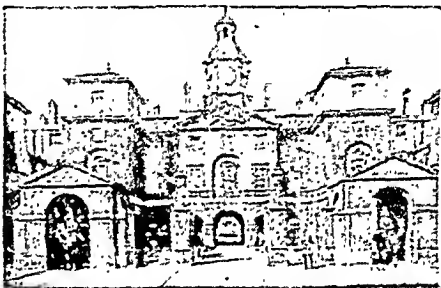


Horse Chestnut in full bloom



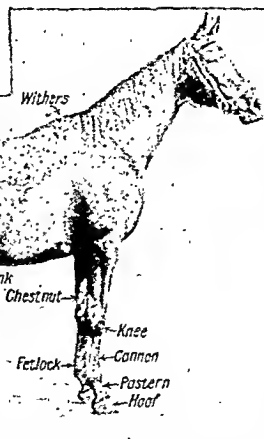
Horse Fly. Enlarged specimen of this dipterous insect

HORSE FLY OR FOREST FLX (*Hippobosca equina*). Dipterous insect found mainly in the New Forest, England.



Horse Guards, London. The frontage in Whitehall, showing the guard in the gateway

It is nearly $\frac{1}{2}$ in. long, brown and marked with yellow spots. It lives by sucking the blood from horses' flanks, causing great irritation.



Horse. Diagram illustrating the points taken into consideration when judging the quality of a horse

Paraffin rubbed on the coat will keep away the pest. It is remarkable in that the female does not lay eggs, the larval state being passed in the body of the mother, and the young extruded as a pupa.

HORSE GUARDS. Government building between Whitehall and St. James's Park, London, S.W. Erected 1750-

51, it took the place of a structure built in 1641 to serve as a guard-house for the palace of Whitehall. It contains the old offices and the audience-room of the commander-in-chief, and since 1904 has been the headquarters of the commander-in-chief of the home forces. It is also the guard-house of the Household Cavalry. There are two wings, with a clock-tower over an

arch in the centre, the archway opening upon the Horse Guards Parade, a large open space, once the Old Tilt Yard, and where the ceremony of trooping the colour now takes place on the king's birthday. There is a memorial to the Guards on the west side. (See illus. p. 686.)

The mounting and dismounting of the guard (1st or 2nd Life Guards or Royal Horse Guards) at 11 a.m. (10 a.m. on Sundays) and 4 p.m. is a familiar London sight.

HORSE GUARDS, ROYAL Regiment of the British army. Known as the Blues, it is one of the three regiments of household cavalry. It originated in a royal warrant of Jan. 6, 1661.



Horse Guards.
Trooper in full
dress

ponds and streams, where it preys upon tadpoles, newts, molluscs, and its own kind. The name belongs properly to *Haemopsis vorax*, of Europe and N. Africa, which attaches itself to the pharynx of horses, cattle, and men who may drink direct from streams. See Leech.

Horse Mackerel (*Caranx trachurus*) Popular name for the scad (q.v.).

HORSE POWER. Unit of the rate for doing work. In British units one horsepower is defined as the power required to raise 33,000 lb. one foot in one minute. One horse power equals 746 watts. The actual working power of a good horse is about $\frac{2}{3}$ of a horse-power, and that of the average man is about $\frac{1}{4}$ horse-power. Brake horse-power is the power of an engine to do outside work, and is measured by a dynamometer (q.v.).

HORSE RACING. National sport of England. Racing was both a popular and a royal sport in the reigns of the early English kings. Henry VIII kept running horses. Charles I introduced the first Cup race at Newmarket, and Charles II was a constant visitor. The present thoroughbreds descend almost exclusively from three imported African horses known respectively as the Godolphin Arabian, the Darley Arabian, and the Byerly Turk.

Racing begins at Lincoln, usually in the week which includes the 25th of March, and ends in the week which includes the 22nd of November. The five classic races for three-year-olds are considered to stand alone. These start with the Two Thousand Guineas; the

One Thousand Guineas, the Derby, the Oaks, and the St. Leger. Enormous prestige attaches to winning the Derby. Other valuable races are the Ascot Gold Cup, Eclipse at Sandown, and the Princess of Wales's Stakes and the Jockey Club Stakes at Newmarket.

Two-year-old racing begins in the first week of the season and is a feature of every meeting. The Champagne Stakes at Doncaster is one of the cheap two-year-old races of the year: the National Breeders' Foal Stakes at Sandown and the Imperial Stakes at Kempton remain among the richest.

All racing is governed by the Jockey Club. Three stewards, one of whom retires annually and selects his successor, control the whole business of racing. Race meetings are generally controlled by what are called local stewards, gentlemen of position with an intimate knowledge of racing and a familiarity with the rules, of which there are in all 184. On July 2, 1929, totalisator betting began for the first time on an English racecourse.

Important race meetings in England include those held at Alexandra Park, Ascot, Bath, Beverley, Birmingham, Brighton, Carlisle, Catterick Bridge, Chepstow, Chester, Derby, Doncaster, Dunstable Park (Wolverhampton), Epsom, Gatwick, Goodwood, Gosforth Park (Newcastle), Haydock Park, Hurst Park, Kempton, Leicester, Lewes, Lincoln, Lingfield, Liverpool, Manchester, Newbury, Newmarket, Nottingham (Colwick), Pontefract, Redcar, Ripon, Salisbury, Sandown Park, Stockton, Warwick, Westernhanger Park (Folkestone), Windsor, Worcester, Yarmouth, and York. Some half dozen are held in Scotland, and there is much racing in Ireland. See Ascot. Betting: Derby: Goodwood; Jockey: Steeplechasing, etc.

HORSE RADISH (*Cochlearia armoracina*). Edible-rooted perennial of the order Cruciferae. It has flower stems about 2 ft. high surmounted by white flowers, large oblong root leaves on long stalks, and lance-shaped stem leaves. Its cylindrical white root is used as an adjunct to roast beef, and in sauces.

HORSFORTH. Urban dist. of Yorkshire (W.R.). It stands on the Aire, 5 m. N.W. of Leeds, on the L.N.E. Ry. Quarrying, bleaching, and the manufacture of woollen goods are carried on. Pop. 12,800.

HORSHAM. Urban dist. and market town of Sussex. It stands near the head of the Arun, 38 m. S.S.W. of London on the Southern Ry. The church of S. Mary, an Early English structure, contains several fine monuments, including some of the Shelley family. At Carfax, in the centre of the town, is an iron ring, a relic of the bull-baiting once carried on here. Tanning and milling are industries. At West Horsham is Christ's Hospital (q.v.). Market day, Wed. Pop. 12,220.

Horsham, a town of Victoria, Australia, stands on the Wimmera river, and on the main line between Melbourne and Adelaide, 203 m. W.N.W. of the former. It is the commercial centre of the district and has irrigation works. Pop. 4,650.

HORSLEY, SIR VICTOR ALEXANDER HADEN (1857-1916). British surgeon. Born at Kensington, April 14, 1857, he was Fullerton professor at the Royal Institution, 1891-93, and professor of pathology, University College, 1893-96. He was surgeon to the National Hospital for Paralysis and Epilepsy, 1896-1916, and consulting surgeon at University College Hospital, 1906-16. Horsley specialised in facial surgery, including the brain, and was also a pioneer in the field of scientific medicine. He was knighted in 1902. In March, 1916, he went to Mesopotamia as consultant with the British forces, and issued a strong indictment of the medical and transport organization there. He died of heart-stroke, July 16, 1916.

HORT, FENTON JOHN ANTHONY (1828-92). British theologian. Born in Dublin, April 23, 1828, he became fellow of Trinity in 1852. Having been ordained in 1854, he was vicar of S. Ippolyts, Hertfordshire, from 1857-72. In 1872 he became fellow and lecturer of Emmanuel College, Cambridge, in 1878 Hulsean professor of divinity, and in 1887 Lady Margaret lecturer in divinity. He died Nov. 30, 1892. Hort is chiefly known for his work on the New Testament, in which he was associated with Westcott and Lightfoot.

HORTHY DE NAGYBÁNYA, NICHOLAS (b. 1868). Hungarian statesman. Born June 18, 1868, at Kenderes, Hungary, of an old family, he entered the



Admiral Horthy,
Regent of Hungary

Austrian navy. In the Great War he did good work in command of some cruisers, being wounded, and in 1918 he was commander of the Austro-Hungarian fleet. Then a popular figure, he took the lead in checking the revolutionary movement led by Bela Kun, and, with a national force, he entered Buda in Nov., 1919. Having restored order in the country, he was elected regent on March 1, 1920, and he still held that office in 1930. In spite of his early friendship with the imperial family, Horthy opposed the attempts of Charles to regain his lost throne. See Hungary.

HORTICULTURE. Scientific name for gardening. It includes the more intensive cultivation of fruit and vegetables for utilitarian purposes and of flowers, shrubs, and ornamental trees for decorative ones. See Flower; Garden.

The Royal Horticultural Society is an association established in 1804 to collect information about the cultivation of plants and trees and to encourage every branch of horticulture. It was incorporated in 1809. Its offices and hall are in Greycoat Street, Westminster. The society publishes a journal, and has fellows, members, and associates.

These are in connexion with the society gardens at Wisley, Surrey, where experiments are carried out in its laboratory and research station. Noted horticultural colleges are those at Swanley, Kent, and Glynde, in Sussex, the latter founded by Viscountess Wolsley.

HORTON, ROBERT FORMAN (b. 1855). British Nonconformist. Born in London, Sept. 18, 1855, he had a brilliant career at Oxford, becoming fellow of New College. In 1880 he accepted an invitation to become minister of a new church, formed by the Congregationalists at Hampstead, where he soon won a reputation as a preacher and as an organizer of social activities among his congregation. He remained there until his retirement in 1930.

HORUS. Egyptian deity. Hawk-headed, he was perhaps the totem of a hawk clan, whose victory originated the Horus-name borne by the dynastic kings, afterwards being deemed a sun-god, the son of Hathor. As Horus the child, the Greek Harpocrates, he appears in human form. See Dendera.

HORWICH. Urban dist. and market town of Lancashire, England. It is 5 m. W. by N. of Bolton, on the L.M.S. Ry., which has large locomotive works here. Other industries include coal mining, stone quarrying, bleaching, cotton spinning, and dyeing. Near are the Rivington Reservoirs and Rivington Pike (alt. 1,545 ft.). Market day, Fri. Pop. 15,616.

HOSANNA. Word derived from the Hebrew *hoshēa* na anna, Save (us) we pray (Ps. 118). The word Hosanna, which acquired a kind of liturgical use as an exclamation of



Horse Guards'
badge



Horse Leech
amid water reeds

praise, was shouted by the assembled crowd as our Lord entered Jerusalem on Palm Sunday (Matt. 21, Mark 11, John 12)

HOSEA. One of the minor prophets. He was born in the Northern kingdom of Israel, and flourished in the reigns of Uzziah, Jotham, Ahaz, and Hezekiah, and of Jeroboam, king of Israel. The first three chapters of his book consist of a parable which symbolises the exile of Israel and its restoration. The remaining chapters contain a series of prophecies.

HOSPITAL. Institution for the treatment of the sick and injured. In A.D. 380 the first hospital in Europe was founded by a Christian patrician, Lady Fabiola; and more than 100 years later Justinian built the celebrated hospital of S. John at Jerusalem.

In medieval times, in Britain, the sick were treated and housed in monastic institutions, and the medical treatment was closely supervised by the priests. After the dissolution of the monasteries, hospital service in England was in abeyance. Before his death, Henry VIII restored S. Thomas's, founded in 1200, and determined to give back S. Bartholomew's (1108), which was refounded in 1553. Bethlem, Christ's Hospital, and Bridewell were also restored about the same date. Among those founded in the 18th century were: Guy's, 1724; S. George's, 1734; Edinburgh Royal Infirmary, 1736; and Middlesex, 1745.

In 1928 in Great Britain there were 928 voluntary hospitals with 65,831 beds. These hospitals, as a rule, receive general cases of illness and accident, but a number are provided for the treatment of special diseases and conditions. The total income for 1928 was £14,006,585, of which 88.2 per cent was derived from voluntary contributions.

Institutions controlled by public authority include fever and smallpox hospitals and asylums for the insane. By the Local Government Act of 1929 the poor law hospitals were transferred from boards of guardians to the local authorities. In addition there are naval hospitals at Haslar and elsewhere. The chief military hospitals are the Royal Victoria at Netley and that at Aldershot.

In France, Germany, the Scandinavian and other European countries a number of voluntary hospitals are provided by religious and philanthropic bodies. In the U.S.A. the general scheme is of hospitals taking in all classes of the community, the wealthy contributing a sum which with other resources helps to meet the main charges of the institution. In Canada many hospitals are maintained on the same lines as in the U.S.A., but a number receive a state grant and payments are made by municipalities towards the maintenance of patients.

King Edward's Hospital Fund for London was originated Feb. 5, 1897, by Edward VII while Prince of Wales, to commemorate the 60th anniversary of Queen Victoria's reign. In 1928 grants amounting to over £290,000 were distributed. The offices are at 7, Walbrook, London, E.C.4.

The Hospital Saturday Fund is raised from collections made annually upon a Saturday at factories, workshops, and in the streets for the support of hospitals.

The Hospital Sunday Fund is derived from the offertories collected annually at churches and chapels of all religious denominations for the benefit of all the medical charities in the district concerned. The Metropolitan Hospital Sunday Fund, founded in 1873, has its headquarters at the Mansion House. In 1928 its total receipts amounted to over £85,000. See Ambulance; Guy's Hospital; St. Bartholomew's Hospital; Red Cross; etc.

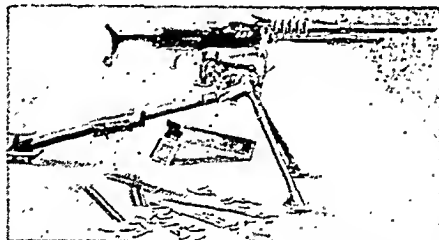
HOSPITALERS, KNIGHTS, OR KNIGHTS OF ST. JOHN OF JERUSALEM. Order founded or sanctioned by Pope Paschal II in 1113. See St. John of Jerusalem.

HOST (Lat. *hostia*, victim). Term used in the Vulgate or Latin version of the Bible for the animal offered as a sin offering, burnt offering, or peace offering. In the Roman Catholic Church the term is applied to the consecrated wafer, believed to be the Body of Christ, which in the Mass is offered as a sacrifice. It is used also of the bread before its consecration. See Communion, Holy; Eucharist; Mass; Transubstantiation.

HOST. Animal or plant upon which a parasite lives. Parasites usually produce disease in the host, either completely destroying it or impeding its growth. The mistletoe is a well-known plant parasite, its host being usually the apple tree. In the case of wheat rust, the wheat is the host the rust a parasite. See Parasite.

HOTCHKISS, BENJAMIN BERKELEY (1826-85). American inventor. Born Oct. 1, 1826, he gained his mechanical knowledge as a workman in a gun factory, and turned his attention to improvements in the manufacture of ordnance. His inventions included a magazine gun, the Hotchkiss quick-firing gun, and various forms of projectiles. He died March 14, 1885.

The Hotchkiss machine gun is an automatic gun of the "gas-engine" type, the movement of the breech mechanism being obtained by allowing a portion of the explosion gases to pass through a hole in the barrel, and so actuate a piston in a cylinder below the barrel.



Hotchkiss Gun. Type of heavy pattern gun and tripod, with loading strips and ammunition box

HOTCHPOT (Fr. *hocher*, to shake, pot. pot). Term of English law. It means the bringing of property into a common fund or account so as to entitle the person bringing it in to share in the common fund which has been increased by his addition. In wills and settlements the testator or settlor frequently directs that on a general division of the estate certain beneficiaries who have received previous benefits shall bring them into hotchpot. See Will.

HOTEL. Modern term for a superior kind of inn or tavern. The palatial hotels of today, such as the May Fair and the Ritz in London, are growths of the 20th century. Most hotels are licensed houses, but there exist temperance hotels and residential hotels which are not. The business of hotel keeping is a large one with its own organ, *The Hotel Review*, and trade organizations. See Inn.

Hôtel de Ville is the French name for a town hall. *Hôtel Dieu* is the name given in France and elsewhere to a hospital, in the older sense of the word. The most noted is the one in Paris, said to have been founded in the 7th century. There is a fine one at Beaune.

HOTSPUR. Name by which Sir Henry Percy, eldest son of the 1st earl of Northumberland, was known. He was killed at Shrewsbury in 1403. See Percy.

HOTTENTOT (Dutch, *quaeker*). Primitive people in S. Africa. They apparently represent an early intermingling of semi-

Hamite negroids with bushwomen, perhaps in Somaliland. Now mainly in the N.W. they comprise Cape Hottentots and upper Orange river Koranas, besides Namaqua in the S.W. Africa protectorate. Brownish-yellow, long-headed, 5 ft. 3 ins., with pointed ehins and matted hair, their women frequently present certain anatomical peculiarities, including steatopygia, and practise finger-joint mutilation. Their magic-religious customs, of bushman character, dominated by witch-doctors, include ceremonial dancing at the new moon.

Racial purity has been affected by Boer and Bantu contact. Much of the population ranked as Hottentot, except in Namaqualand, is half-breed, speaking a debased taal, and employed as herdsmen or wagon-drivers.

HOTTENTOT BREAD (*Testudinaria elephantipes*). Climbing herb of the order Dioscoreaceae, native of S. Africa, more usually known as Elephant's Foot (q.v.).

HOTTENTOT FIG (*Mesembryanthemum edule*). Prostrate succulent shrub, a native of S. Africa. It has three-sided fleshy leaves, pointed at each end, and large yellow solitary flowers. The fruit, shaped like a small fig, contains a pleasantly acid mucilage which forms the basis of a preserve.

HOUDAN. Domestic breed of fowls with black and white plumage, a peculiar branched comb and long red wattles. They have short, white legs like Dorkings, which they also resemble in having five toes. The birds are hardy, easily reared and managed, and begin laying early.

HOUDIN, ROBERT (1805-71). French conjuror. Born at Blois, Dec. 6, 1805 he became known in Paris as a maker of mechanical toys and automata. On July 3, 1845, he opened a Theatre of Magic at the Palais Royal, 164, Galerie de Valois, afterwards transferring it to the Boulevard des Italiens. His application of the then little-known powers of electricity attracted attention almost all over the world. He wrote *The Secrets of Conjuring and Magic*, which has been translated into English.

HOUDINI, HARRY (1873-1926). American entertainer. Born at Appleton, Wisconsin, April 6, 1873, he went on to the variety stage as an expert in escaping from bandouffes, locked chambers, etc. A keen student of psychic manifestations, he so ingeniously reproduced, by secret methods of his own, the most astonishing forms of so-called phenomena that spiritualist writers hailed him as a medium endowed with powers of dematerialising and rematerialising at will, despite his own assurance that no supernatural agency was associated with his acts. He frequently appeared in London. He died Oct. 31 1926.

HOUGHTON, ALANSON BIGELOW (b. 1868). American diplomatist. Born at Cambridge, Mass., Oct. 10, 1868, he entered Congress in 1919. From 1922-25 he was the U.S.A. ambassador in Berlin, and from 1925-29 he was ambassador in London.



Hottentot: Girl and man of this primitive South African race

HOUGHTON, RICHARD MONCKTON MILNES, 1ST BARON (1809-85). British poet and politician. Born in London, June 19, 1809, he was educated at Trinity College, Cambridge, where he became a member of the coterie known as the Apostles, and a friend of Tennyson, Hallam, and Thackeray. He travelled in Germany, Italy, and Greece 1832-36, and represented Pontefract in the House of Commons, 1837-63. He was created Baron Houghton in 1863, and died Aug. 11, 1885. He was succeeded by his son, who became later the marquis of Crew (q.v.).



1st Baron Houghton
After A. D'Orsay

Lord Houghton's works include Memorials of a Tour in Greece, chiefly Poetical, 1834; Memorials of a Residence on the Continent and Historical Poems, and Poems of Many Years, 1838; Palm Leaves, 1844; Monographs, Personal and Social, 1873; Collected Poetical Works, 1876.

HOUGHTON, WILLIAM STANLEY (1881-1913). British dramatist. Born at Manchester, he wrote dramatic criticism for The Manchester Guardian, and became associated with Miss Horniman in the repertory theatre movement. His own fame as a dramatist rests chiefly on one of several plays, Hindle Wakes, 1912, a powerful study of life in a Lancashire cotton town, which aroused much discussion. He died Dec. 10, 1913.

HOUGHTON-LE-SPRING. Urban dist. and market town of Durham. It is 6 m. from Durham with a station on the L.N.E. Ry. and is a coal mining centre. Market day Sat. Pop 11,127.

HOUSDITCH. London thoroughfare. It runs N.W. from Aldgate High Street to Bishopsgate, parallel with Duke Street, Bevis Marks, and Camomile Street. Part of what was once known as the City Ditch or Townsditch, it has the church of St. Botolph at its E. corner. When filled in, paved and built over in the 16th century it became a sort of Jewry. It is a centre for dealers in secondhand clothing.

HOUSD'S-TONGUE (Cynoglossum officinale). Biennial herb of the order Boraginaceae. A native of Europe, N. Africa, N. and W. Asia, it has a fleshy, tapering root, and the whole plant is clothed with soft hairs. The leaves are oblong-lance-shaped; the funnel-shaped flowers are dull red-purple, in short sprays from the axils of the upper leaves. The fruits are four flattened oval nutlets.

HOUNSLOW. District of Middlesex. Within the control of the Heston and Isleworth urban district council, it is 1½ m. W.S.W. of London, on the District and Southern Ry. It is the principal military depot for the county. The Royal Military School of Music, formerly Kneller Hall, Osterley Park, seat of the earl of Jersey, and Cranford Church, where Fuller, author of The Worthies of England, is buried, are in the vicinity. Hounslow Heath, which once extended W. from Hounslow for over 5 m., was in the 18th century infested with highwaymen.

HOURLY. Twenty-fourth part of a civil day, divided into 60 mins. each of 60 secs. The solar hour is the twenty-fourth part of the solar day. In ancient times the hour's length varied.

An hour glass is an instrument for measuring approximately intervals of time, more particularly an hour. It consists of a pair of glass bulbs united by a narrow tube; one of the bulbs contains dry sand, water, or mercury, which in passing through the tube into the other bulb will occupy approximately the time to be measured.

HOURI. Promised female companion for faithful Mahomedans when they reach Paradise. According to Saie, translator of The Koran, seventy-two of these houris, besides the wives he may have had in this world, await even the meanest of the faithful. Pron. boori. See Koran.

HOUSE, EDWARD MANDELL (b. 1858). American politician. Born at Houston, Texas, July 26, 1858, he exercised remarkable influence in the political affairs of that state, but his wider career was due to his friendship with President Wilson. In 1914 the president sent House to Europe to gather information about affairs in the belligerent countries. Later he was American representative at the various conferences in Paris, then at the Peace Conference in Paris and at the Mandates Commission, London, 1919. He published The Intimate Papers of Colonel House, 1926-28.

HOUSE FLY (Musca domestica). Two-winged insect of the order Diptera. The body is of a grey tint, liberally studded with curved stiff hairs. Many of the flies that haunt living rooms in summer belong to other species. The house fly has large, reddish, compound eyes that almost meet at the top of the head, short antennae, and the principal mouth-parts form a large two-lobed proboscis with many channels and perforations through which the fly sucks up its food. It is an active agent in the spread of disease germs. See Fly; Insect.

HOUSEHOLD CAVALRY. British military force consisting of three regiments—the 1st and 2nd Life Guards and the Royal Horse Guards. See Horse Guards; Life Guards.

Household Troops is the name given to regiments which have a special association with the sovereign.

HOUSELEEK (Semper vivum tectorum). Perennial succulent herb of the order Crassulaceae, native of Europe and W. Asia. The flat fleshy leaves form a dense rosette, and have a purple edge, the flat tip sharp spine. The leafy, flowering shoots rise straight to a height of 1 ft. or 2 ft., ending in a spreading cluster of red-purple flowers.

HOUSEMAID'S KNEE. Chronic inflammation of the bursa which lies over the lower half of the kneecap. This bursa is a small sac containing fluid which serves to diminish friction between the bone and the tendon of the muscles attached to the bone. As a result of frequent kneeling, or following injury or chronic gout, it becomes swollen and enlarged. The treatment usually consists in resting the limb and applying fomentations, but removal of the fluid by tapping may be necessary if other forms of treatment prove ineffective.

HOUSE SPARROW. Full name of the small bird usually known as the sparrow (q.v.).

HOUSING. In Great Britain in the 19th century the rapid rise of industries brought about a serious shortage of houses in the towns and urban areas. In 1843 a royal commission enquired into the subject and a series of Housing Acts was passed. In 1884 another royal commission sat, and the result of its labours was the Housing of the Working Classes Act, 1885, followed by the comprehensive Act of 1890, which consolidated all previous legislation, and which, together with two later amending Acts, was until 1919 the chief legislative measure for housing reform. This divided the housing problem into the three parts: the clearing and improving of slum areas; the closing or repair of insanitary houses; and the erection of new houses by local authorities.

A Housing and Town Planning Act was passed early in 1919. The outstanding feature of this was the absolute obligation cast upon local authorities to provide such new houses as were needed in their area, if no other agencies were prepared to do so.

Financial assistance was given in respect of housing schemes completed before July 31, 1922, or such later date as sanctioned by the Ministry of Health, the Government undertaking to relieve the local authority of the burden of any annual deficit on housing schemes in so far as it exceeded the produce of a penny rate. Financial assistance was also given to public utility societies, and, later, grants of from £230 to £260 per house were given to private individuals.

The important Housing Act of 1923 introduced a new principle and incidentally put a limit on the cost to the state of the various schemes. Under it a subsidy of £6 per house was paid to local authorities for 20 years, provided the houses were of a certain size and cost and were finished within a certain time. In 1924 the Labour Government, by a further Act, increased the subsidy to £9 a house for 40 years. All housing legislation was consolidated in an Act passed in 1925.

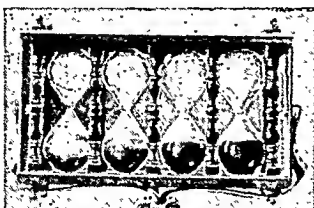
These Acts gave the Minister of Health power to revise the amount of the state subsidy at the end of each two years. Under this provision it was reduced in 1926 and a further reduction announced in 1928. This, however, did not come into force, as the Labour Government, having taken office in May, 1929, reversed the decision of its predecessors.

In 1930 it was stated that 1,459,000 new houses had been built in England and Wales since 1918.

In 1930 a new housing bill intended to deal with the slum problem was introduced into Parliament. This altered the basis of the state grants. Instead of being a certain sum per house it was made a certain sum for every person rehoused. This was fixed at 45s. per person for 40 years in urban areas; at 50s. in agricultural districts, and at 70s. in London.

HOUSMAN, LAURENCE (b. 1865). British poet, novelist, and artist. Born July 18, 1865, he first attracted attention as an artist by his illustrations to George Meredith's poem, Jump-to-Glory Jane. In 1900 his anonymous volume An Englishwoman's Love Letters had an immense vogue. His other books, beautiful, contemplative poetry and individual fanciful fiction, include A Farm in Fairyland, 1894; Prunella, 1906; Ironical Tales, 1926; and Uncle Tom Pudd, 1927.

His brother, Alfred Edward Housman, born March 26, 1859, was professor of Latin at University College, London, 1892-1911. In 1911 he was elected professor of Latin at Cambridge. He is best known, however, by his volume of verse, A Shropshire Lad, 1896. He published Last Poems in 1922.



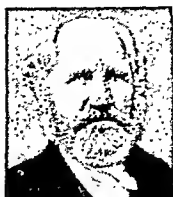
Hour Glass. Set of glasses in Greenwich parish church



Houseleek. The plant as it appears about July

HOUSTON. City and port of Texas, U.S.A. It stands on the Houston Ship Channel, Galveston Bay, 48 m. N.W. of Galveston. Its buildings include the Houston Lyceum, a Carnegie library, the municipal auditorium, the Masonic temple, and the city high school. It has large cotton and lumber interests, as well as rly. wagon and machine shops and foundries. Pop. 250,000.

HOUSTON, SAMUEL (1793-1863). American soldier. Born in Virginia, March 2, 1793, he lived for a time among the Indians, became a lawyer and was governor of Tennessee. Later he settled in Texas, then part of Mexico, and commanded the troops of that district in the conflict with Mexico which ended in its independence. He was president of the new republic, 1836-38 and again 1841-44 and when it joined the United States was one of its representatives in Congress. In 1859 he was chosen governor, but he was deposed in 1861. Houston died July 26, 1863.



Samuel Houston,
American soldier
and politician

HOVE. Borough and watering place of Sussex. To the W. of and adjoining Brighton, it is 51 m. from London, and has a station on the Southern Rly. The attractions include the esplanade and lawns, St. Ann's Well Gardens, tennis courts, and howling greens, while here is the ground of the Sussex county cricket club. In 1928 the boundaries were extended, the area of the borough being increased to 4,100 acres. In 1921 it adopted the French village of Bournemouth. Pop. 48,000.

HOWARD. English family, now represented by the duke of Norfolk, the earl of Carlisle, the earl of Effingham, the earl of Suffolk and Berkshire, Lord Howard of Glossop, and other peers and commoners. The descent is traced to William Howard, or Haward, a lawyer and landowner in Norfolk in the 13th century. His son John became a knight, a soldier, and the owner of further Norfolk lands.

Sir Robert Howard, who lived early in the 15th century, married Margaret, daughter of Thomas Mowbray, duke of Norfolk. Their son, John, was made a baron in 1470. Having inherited the bulk of the estates of the Mowbrays, he was in 1483 created duke of Norfolk and earl marshal. From his son, the 2nd duke, the English leader at the battle of Flodden, are descended most of the existing lines. See Arundel, Earl of; Carlisle, Earl of; Norfolk, Duke of; Suffolk, Earl of; Surrey, Earl of.



Catherine Howard,
wife of Henry VIII
After Holbein

HOWARD, CATHERINE (c. 1522-42). Fifth wife of Henry VIII of England. Daughter of Lord Edmund Howard and granddaughter of the 2nd duke of Norfolk, she used her influence over the king to advance the cause of the papal party. In Nov., 1541, Cranmer adduced evidence against her, a commission of inquiry was appointed, and she was executed on Tower Green, Feb. 13, 1542.

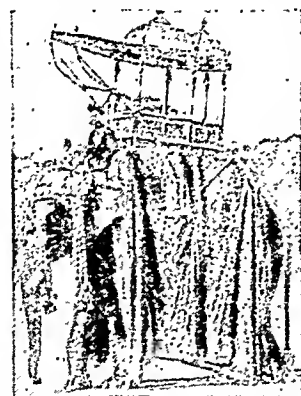
HOWARD, SIR ESMÉ WILLIAM (b. 1863). British diplomatist. Born Sept. 15, 1863, a son of Henry Howard of Greystoke Castle, Cumberland, he was educated at Harrow. From 1885-92 he was in the diplomatic service, to which he returned in 1903. After having been consul-general in Crete and then in Hungary, Howard was minister to Sweden,

1913-19, and to Spain, 1919-24. In 1924 he went as British minister to Washington and remained there until 1929. The first of his knighthoods dates from 1916. In 1930 he was made a peer.

HOWARD, JOHN (1726-90). British philanthropist. Born in Hackney, Sept. 2, 1726, he visited, between 1773 and 1776, all the county prisons, town goals, and hridewells in Great Britain and Ireland, and many in France, Germany, Flanders, and Holland, and in 1777 published his *State of the Prisons in England and Wales, with an Account of some Foreign Prisons*. He died Jan. 20, 1790.

HOWARD DE WALDEN, BARON. English title borne with intervals since 1597 by the families of Howard and Ellis. In 1597 Lord Thomas Howard, a son of the 4th duke of Norfolk, was made a peer; his mother was the daughter and heiress of Lord Audley of Walden, hence the new title. Howard became earl of Suffolk in 1603, and when the 3rd earl died in 1688 the barony went into abeyance. It was held in 1797 by the 4th earl of Bristol, a descendant of the 1st lord. Bristol's great-grandson, Charles Augustus Ellis (1799-1868), succeeded as 6th lord in 1803. In 1899 his descendant Thomas Evelyn Scott-Ellis (b. 1880) became the 8th baron.

HOWARD OF EFFINGHAM, WILLIAM HOWARD, 1ST BARON (c. 1510-73). English diplomatist. Eldest son of Thomas Howard, 2nd duke of Norfolk, he was made a peer for crushing the Wyatt rebellion, and made a K.G., 1554. He protected the princess Elizabeth against Gardiner, and became her lord chamberlain, 1558, and was appointed



Howdah on the state elephant
of the Gaekwar of Baroda

lord privy seal, 1572; from 1554 to 1573 he was lord high admiral. He died Jan. 12, 1573. His son, Charles, the leader against the Spanish armada, was made earl of Nottingham (q.v.).

Howdah. Seat placed on the back of an elephant. It may hold two or more persons, and is sometimes covered. It is a Hindu word. **HOWDEN.** Market town of Yorkshire (E.R.). It is 21 m. by rly. W. of Hull on the L.N.E. Rly. It has an interesting 13th century church, and also an aerodrome. Roger of Hoveden, the English chronicler, was a native of Howden, and a statue of him is outside the market hall. Market day, Sat. Pop. 2,052.

HOWE, RICHARD HOWE, EARL (1726-99). British sailor. The second son of the 2nd Viscount Howe, he was born in London, March 8, 1726. Entering the navy, he

held various commands against the French. In 1758 he succeeded his brother as 4th Viscount Howe, an Irish peerage. Commander-in-chief in N. America, he saw much service there during the Revolution. In 1782 he was appointed commander-in-chief of the Channel, and carried out the relief of Gibraltar. In 1783 he was appointed first lord of the admiralty, and in 1788, on retirement, was given an earldom. He was again, 1790, made commander-in-chief of the Channel fleet, and on June 1, 1794, he engaged the French off Cape Ushant, where he won a splendid victory. He died Aug. 5, 1799.



Earl Howe,
British sailor
After Gainsborough

His daughter married Assheton Curzon, son of the 1st Viscount Curzon, and Assheton's son, Richard, was made Earl Howe in 1921. The 4th earl (1861-1929) was chamberlain to Queen Alexandra. The 5th earl (b. 1884), when Viscount Curzon, was a Unionist M.P. and a motorist. The earl's eldest son is known as Viscount Curzon.

HOWE, JULIA WARD (1819-1910). American poet. Born at New York, May 27, 1819, she married Samuel Gridley Howe (1801-76), the philanthropist. Before the outbreak of the Civil War she edited *The Boston Commonwealth*, the anti-slavery organ, and wrote the *Battle Hymn of the Republic*. Afterwards she became an advocate of votes for women and of prison reform. Her writings include *Life of Margaret Fuller*, 1883; and *Representative Women of New England*, 1905. She died Oct. 17, 1910.

HOWELLS, WILLIAM DEAN (1837-1920). American man of letters. He was born at Martin's Ferry, Ohio, March 1, 1837, and worked as a compositor in his father's printing office, 1848-58; was a journalist, 1858-61; U.S. consul at Venice, 1861-65; editor of *The Atlantic Monthly*, 1866-81; and editor of *Harper's Magazine*, 1886-91. He was associated also with *The New York Times*, *The Nation*, and *The Cosmopolitan Magazine*. He died in New York, May 11, 1920.

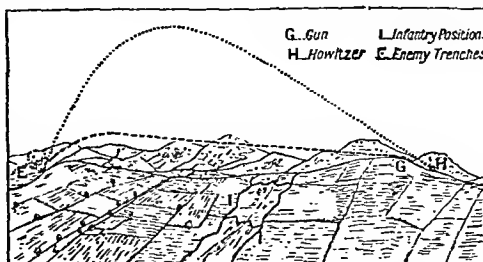
Howells' 70 works include poems, travel books, essays, plays, and criticism. Of his travel books, *Venetian Life*, 1866, and *Italian Journeys*, 1867, are delightful transcripts of personal experience.

HOWITT, WILLIAM (1792-1879). British writer. Born at Hecnor, Derbyshire, he was educated at the Friends' school at Ackworth, Yorkshire, and at Tamworth, near Lichfield. He married, in 1821, Mary Botham, with whom he collaborated in *The Literature and Romance of Northern Europe*, 1852, and other works.

He wrote a number of books, which were very popular in their day. Howitt died in Rome, March 3, 1879.

His wife was well known as a writer of tales for children.

HOWITZER. Gun having a comparatively short barrel, and discharging heavy projectiles at a low muzzle velocity, consequently firing at a high angle of elevation to attain the desired range (see illus.). On account of the



Howitzer. Diagram illustrating the difference between the principles of howitzer and field-gun ranging, showing higher trajectory of former

high angle the projectile strikes its target at a correspondingly steep angle of descent, and this factor is of great value in the attack of troops and armament behind earthworks or other protection, and for the demolition of buildings and fortifications. The high trajectory makes it possible for the howitzer to fire over obstacles of considerable height, as a range of hills, when indirect laying is adopted. During the Great War howitzers were used with a length of 25 calibres or more, and 8 in., 9.2 in., 12 in., 15 in., and 18 in. weapons were constructed. See Gun.

HOWRAH. District and town of India, in the Burdwan Division, Bengal. The area of the district is 510 sq. m. Rice is the most important crop. The district is a great industrial centre. Howrah city, on the Hooghli, opposite Calcutta, was a small village in the 18th century, but is now an important manufacturing town. It is the terminus of the E. Indian and the Bengal-Nagpur rlys. Pop., dist., 997,403; town, 195,301.

HOWTH. Urban district and watering-place of co. Dublin, Irish Free State. It is situated on a promontory forming the N. side of Dublin Bay. 8 m. N.E. of Dublin by the G.N.R. The Hill of Howth is 562 ft. high. Pop. 4,029. Pron. Hoath.

HOXTON. Suburb of North London, included in the borough of Shoreditch (q.v.). Aske's Haberdashers' School marks the site of almshouses and schools founded by Robert Aske, a London alderman and haberdasher, in 1688. A mansion known as Balme House in the 17th century was once the residence of Richard de Beauvoir, whose name is preserved in that of De Beauvoir Town. The Geffrye Museum (q.v.), in the Kingsland Road, occupies the site of almshouses founded in 1715 by Sir Robert Geffrye. Hoxton is a centre of the cabinet-making industry.

HOY. One of the Orkney Islands, Scotland, about 2 m. S.W. of Pomona. Its length is 13½ m., extreme breadth 8 m., and area 53 sq. m. The highest summit is Ward Hill (1,564 ft.), 2 m. from which is the Dwarfie Stone, referred to in Scott's *Pirate*, 6½ ft. high, with hollowed-out chambers. Long Hope, on the S. coast, is a good natural harbour. The Old Man of Hoy (450 ft.) is a detached pillar-shaped rock off the coast. Pop. 1,100.

HOYLAKE. Watering-place of Cheshire on the Dec. at the entrance to the estuary, on the peninsula of Wirral, it is 8 m. from Birkenhead on the L.M.S. Rly. Here are the golf links of the Royal Liverpool Club. With West Kirby, also a watering-place, it forms an urban district. Pop. 19,000.

HOYLAND, NETHER. Urban dist. of Yorkshire (W.R.). It is 5½ m. S. by E. of Barnsley on the L.M.S. Rly., and has collieries and rolling mills. Pop. 14,904.

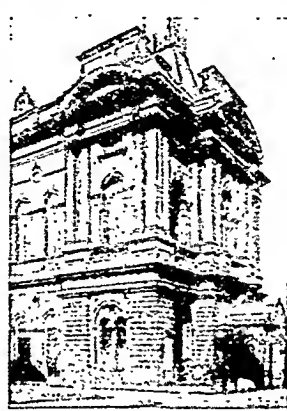
HSUAN TSANG (c. 605-664). Chinese traveller. Born near Honan Fu, he became a Buddhist monk and undertook alone the perilous journey to India in order to visit the sacred scenes and procure Indian books of devotion. After several years spent in travel in India he passed on to Assam and thence made his way to Kabul. At the command of the emperor Tai Tsing, he wrote an account of his travels in 648.

HUBERT (656-727). Saint and bishop. A nobleman of Aquitaine, he spent his youth at the court of King Theodoric III. One day, when hunting, he saw a stag with a cross growing between his antlers, which brought about his conversion. Later he was successively bishop of Maestricht and Liège. He is regarded as the patron saint of hunters, and his festival is kept on Nov. 3.

HUCKLEBERRY. Fruits of several low shrubs of the genus *Gaylussacia*, of the order Ericaceae. Natives of N. America, the plants resemble and are nearly related to the whortleberries and cranberries (*Vaccinium*).

HUCKNALL TORKARD. Market town and urban dist. of Nottinghamshire. It is 8 m. from Nottingham, on the L.N.E. and L.M.S. Rlys. There is an aerodrome. Around are coal mines. Near is Newstead Abbey (q.v.), the home of Lord Byron (q.v.), and the poet is buried in the parish church of Hucknall. Market day, Fri. Pop. 16,835.

HUDDERSFIELD. County borough and market town of Yorkshire (W.R.). It stands on the Colne, 16½ m. S.W. of Leeds and 190 from London, on the L.M.S. and L.N.E. Rlys. It is also served by canals. The buildings include the church of S. (1904), Afoot in England (1909), and Far Peter, the town hall and municipal buildings, the cloth hall, market hall, art gallery and public library. There is a technical college.



Huddersfield. The Town Hall built in 1832
Valentine

Huddersfield's staple industry is the making of cloth and worsted. Others are the manufacture of machinery, iron founding and engineering. Here are large dye works, the production of aniline dyes for local use being an important industry. In 1920 the corporation acquired the Ramsden estate, consisting of some 4,300 acres in the heart of the town. Market days, Tues. and Fri. Pop. 112,100.

HUDSON. River of New York State, U.S.A. Rising in the Adirondack Mts., it flows S. for about 300 m., entering New York Bay by an estuary called North river. It is tidal and navigable to Troy, 150 m. from its mouth. Tributaries are the Mohawk, Sacandaga and Wallkill. It is connected by the Erie Canal with Lake Erie, by the Champlain Canal with Lake Champlain, and by the Delaware and Hudson Canal with the Delaware river. It was explored in 1609 by Henry Hudson, after whom it is named.

The city of Hudson, in New York State, stands on the left bank of the Hudson river, 28 m. S. of Albany. Pop. 11,745.

HUDSON, GEORGE (1800-71). British financier. Son of a Yorkshire farmer, on the strength of a legacy he began to interest himself in railway undertakings. More than 1,000 miles of line were under his control during the railway mania of 1844, and at this time his holdings amounted to £320,000. In 1847, when the inevitable slump followed the railway boom, various dishonest transactions on his part were brought to light. No prosecution followed, but Hudson decided to go abroad. He died in London, Dec. 14, 1871.

HUDSON, HENRY (d. 1611). English sailor. The son probably of a London merchant, he sailed in 1607 in search of a N.E.



Henry Hudson, English sailor

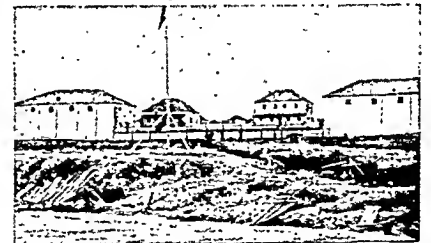
passage to the Spice Islands. In 1609 he crossed the Atlantic, and explored the Hudson river. In 1610 he sailed again to find a North-West passage, investigated the bay later called after him, and was there caught in the ice. Discontent caused a mutiny, and in June, 1611, Hudson was set adrift in a small boat. Nothing was ever heard of him again.

HUDSON, WILLIAM HENRY (1841-1922). British author and ornithologist. Born at Quilmes, near Buenos Aires, Aug. 4, 1841, he came to England in 1869, and for some years earned a precarious livelihood by secretarial and literary work. Among the many books which later brought him fame—romances, studies of nature and bird-life both in S. America and England, and autobiographical works—are *The Purple Land* (1885), *The Naturalist in La Plata* (1892), *El Omhu* (1902), *Green Mansions* (1904), *Afoot in England* (1909), and *Far Away and Long Ago* (1918). Hudson died in London, Aug. 18, 1922, and is commemorated by the Bird Sanctuary and Epstein's figure of Rima in Hyde Park.



William H. Hudson
British author
Elliott & Fry

HUDSON BAY. Inland sea of N.E. Canada. Named after Henry Hudson (q.v.), who explored it in 1610, it is entered from the Arctic by Fury and Hecla Strait and Fox Channel, and from the Atlantic by Hudson Strait, its southern extremity narrowing into James Bay between Ontario and Quebec. Its length (including James Bay and Fox Channel) is 1,300 m., and its breadth 590 m. The principal rivers flowing into it are the Nelson, Churchill, Albany, Severn, Nottaway, Rupert, and East Main. The rly. from Le Pas (Manitoba) to Fort Churchill, 425 miles, opened in 1929, shortens considerably the route from Edmonton (Alberta) to Liverpool. See Canada.



Hudson's Bay Company post at Chipewyan on Athabasca Lake, 500 miles north of Edmonton

HUDSON'S BAY COMPANY. Company formed for trading for furs with the Indians of British N. America. It originated in a charter granted by Charles II, in 1670, to his nephew, Prince Rupert, and other noblemen and gentlemen. It was given trading privileges over the greater part of the N. area of N. America, the district being called Rupert's Land and also the Hudson's Bay Territories.

In 1869 the Company agreed to surrender its lands to the Dominion Government. As compensation it received £300,000 and a good deal of fertile land, as well as a small piece adjoining each of its trading stations. This land, anything up to 15,000,000 acres, made the company one of the largest landholders in Canada, and since 1872 it has been engaged in developing and selling it. The company has continued its fur trading operations. From 1889 until his death Lord Strathcona (q.v.) was governor of the company. See Canada.

HUÉ (Chinese, Thua-Thien). Capital of Annam, French Indo-China. It stands on the left bank of the river Huong-giang or Hué, a

few miles from its mouth in the China Sea in the vicinity are sarcophagi of ancient Annamite rulers. Hué is connected by rly. with Tourane and with Hanoi. Pop. 41,275.

HUGGINS, SIR WILLIAM (1824-1910) British astronomer. Born Feb. 7, 1824, he early took an interest in astronomy. Taking up spectrum analysis he laid the foundation of astro-physics, and was a pioneer in spectroscopic photography. President of the Royal Astronomical Society, 1876-78, of the British Association, 1891, and of the Royal Society, 1900-5, he received many honours from scientific societies. He received the Order of Merit in 1902, and died May 10, 1910.

HUGH (c. 1135-1200). English saint, known as Hugh of Lincoln, or Hugh of Avalon. Born at Avalon, in Burgundy, he became a monk at the Grande Chartreuse, and in 1186 was made bishop of Lincoln by Henry II. He did much to reform the clergy in his diocese, while he was equally ready to stand up to the king when the rights of his office were assailed. He died in London, Nov. 16, 1200, and his festival is kept on the 17th of that month. He was canonised in 1220.

HUGHENDEN Village of Buckinghamshire. It is 1½ m. from High Wycombe, on the G.W. and L.N.E. Rlys., at the foot of the Chilterns. Hughenden Manor (see illus. p. 213) was long the home of Lord Beaconsfield (q.v.). In the parish church, where he was buried, is Queen Victoria's memorial to the statesman. To the N.W., over Nap Hill, is Bradenham, the Hurstley of Beaconsfield's last novel, where he lived in his youth. Pop. 2,130.

The town of Hughenden in Queensland, Australia, stands on the Flinders River, 236 m. inland by rly. from Townsville. It serves the cattle and sheep-rearing district W. of the Great Dividing Range. Pop. 1,460.

HUGHES, CHARLES EVANS (b. 1862). American politician. Born in Glens Falls, New York, April 11, 1862, he took a degree in law at Columbia in 1884, and began practising in New York. Governor of New York State, 1907-10, in the latter year he became a judge in the Supreme Court. In the presidential election of 1916 Hughes was the Republican candidate selected to oppose Wilson but was beaten by 31 votes. In 1921 he became secretary of state in Harding's administration, resigning in Mar. 1925. In 1926 he became a member of the Permanent Court of Arbitration at the Hague, and in 1928 a judge of the Permanent Court of International Justice there. In 1930 he succeeded Taft as chief justice of the U.S. Supreme Court.

HUGHES, DAVID EDWARD (1831-1900). Anglo-American inventor. Born in London, May 16, 1831, he settled in the United States.



David E. Hughes,
Anglo-American
inventor

He became a professor of music at Bardstown College, Kentucky, and was afterwards professor of natural philosophy at the same college. In 1855 Hughes patented the printing telegraph which bears his name. In 1878 he communicated to the Royal Society his invention of the microphone (q.v.); and in 1879 the induction balance. He died Jan. 22, 1900. See Telegraph.

HUGHES, HUGH PRICE (1847-1902). British Nonconformist. Born at Carmarthen, Feb. 8, 1847, he entered the Wesleyan ministry, and became well-known as superintendent of the wealthy London circuit of Brixton Hill. In 1887 he started the West London Mission, attracting large audiences to his services at St. James's Hall. In 1898 he was president of the Wesleyan Conference, and he edited *The Methodist Times*, which he founded in 1885, until his death, Nov. 17, 1902.

HUGHES, SIR SAMUEL (1853-1921). Canadian politician. Born in Ontario, Jan. 1, 1853, he became a lecturer and then an editor.

In 1870 he served with the Canadian militia against the Fenians and in 1900 he was with the Canadian contingent in S. Africa. In 1892 he entered the Parliament at Ottawa and in 1911 was made minister of defence. He organized the Canadian forces for the Great War and worked with them until differences with his colleagues led to his retirement in 1916, though he remained an M.P. In 1915 he was knighted, and he died Aug. 24, 1921.



Sir Samuel Hughes
Canadian politician
Russell

HUGHES, THOMAS (1822-96). British author. Born at Uffington, Berks, Oct. 20, 1822, he became a barrister, being made a Q.C. in 1869 and a county court judge in 1882. He was also prominent as a Christian Socialist and succeeded his friend F. D. Maurice as principal of the Working Men's College, London. He died March 22, 1896. Hughes is known by his book, *Tom Brown's Schooldays* (1857), based on his own at Rugby.



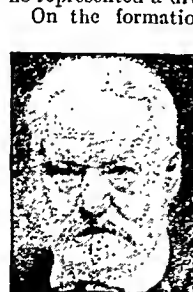
Thomas Hughes,
British author

HUGHES, WILLIAM MORRIS (b. 1864). Australian politician. Born in N. Wales, Sept. 25, 1864, he went in 1884 to Australia.

He settled in Sydney in 1890, and during a great strike among the waterside workers in that year he organized the wharf labourers of Sydney into a powerful union, of which he became general secretary, and took part in the campaign that, in 1891, returned for the first time four labour members to the New South Wales legislature. From 1894-1901 he represented a division of Sydney.



W. M. Hughes,
Australian politician
Vandyk



Victor Hugo,
French writer

On the formation of the Commonwealth Hughes was elected labour member for W. Sydney. In the first labour government, formed in 1904, he became minister for external affairs and then attorney-general. He was prime minister 1915-23, retaining also his legal post. In 1919 he attended the peace conference in Paris.

Hugli. Alternative spelling of the Indian river Hooghli (q.v.).

HUGO, VICTOR-MARIE (1802-85). French poet, novelist and dramatist. Born at Besançon, Feb. 26, 1802, Hugo entered on his literary career in 1822, when his fervent royalism won him a pension from Louis XVIII. He established himself as a great Romantic with his play *Hernani* (1830) and the fine medieval tale *Notre-Dame de Paris* (1831).



H. Price Hughes,
British Nonconformist;
Langlier

Volumes of verse included *Les Chants du Crépuscule* (1835) and *Les Rayons et les Ombres* (1840). In 1841 he was elected to the Académie, and in 1845 created a peer by Louis-Philippe, king of the French.

After the Revolution of 1848 Victor Hugo was a prominent member of the assembly, but his republican opinions led to his banishment by Napoleon III in 1851, when he retired to the Channel Islands. The success of *Les Contemplations* (1856) was followed by the first series of *La Légende des Siècles* (1859) and the great epic-novel *Les Misérables* (1862). In 1871 Hugo returned to Paris in triumph, and was elected senator in 1878. Among his later books were *L'Art d'être Grandpère* (1877), and the second and third series of *La Légende des Siècles* (1879 and 1883). He died in Paris, May 22, 1885, and was buried in the Panthéon.

HUGUENOT. Name given to the French Protestants who adopted the Calvinistic form of the reformed religion. Many nobles placed themselves at the head of the Reformation movement, and Huguenots multiplied also among the humbler classes. Under Francis I and Henry II, heresy was persecuted, and in the reign of Charles IX there was a series of wars of religion. In spite of the Massacre of St. Bartholomew the Huguenots were not crushed, and by the edict of Nantes, 1598, they secured freedom of conscience. This, however, was revoked in 1685. The result, in spite of the severest measures, was the flight of vast numbers of the best industrial population, who took refuge in England, Holland, Brandenburg, and elsewhere. See Protestantism; Reformation.

HULA (*Heteraloea aequirostris*). Bird of the crow family found in the forests of New Zealand, where it nests in hollow trees. The plumage is a glossy, greenish black, the tail tipped with white, and the large rounded wattles are orange-red. The beak of the male is short, straight and stout, while that of the female is long, curved, and slender. The birds work in pairs for their favourite food, the grub of a timber-boring beetle, the differing beaks enabling the birds to reach the grubs either in decayed or hard woods.

HULL. City, seaport, and county borough of Yorkshire (E.R.), its full name being Kingston-upon-Hull. It stands where the river Hull falls into the Humber, 20 m. from the open sea and 175 m. from London. It is served by the L.N.E. and L.M.S. Rlys., and is connected by steam ferry with New Holland across the Humber. Pop. 294,600.

The church of Holy Trinity is a very large building, with a massive central tower, a Perpendicular nave and a number of other features. The city hall and



Hull. 1. Courts of Justice, 2. Monument Bridge, the Wilberforce Monument and the City Hall

the exchange are modern buildings in the Italian style. Other buildings include the guildhall, law courts, and dock office. There is an old grammar school, while Hymers College is a modern public school. There is a university college, which was opened in 1928, technical

schools, art galleries, and museums. The Wilberforce Museum occupies the house in which the philanthropist was born.

The docks cover about 250 acres, and connected with them are large timber yards. Apart from shipping, the industries include shipbuilding, flour-milling, and the manufacture of cement, chemicals, starch, rope, and paint. Hull is the headquarters of a fleet of steam trawlers, and is an important centre for oil seed crushing. It is governed by a lord mayor and corporation and has a suffragan bishop. The aerodrome is at Hedon.

HULL. City of Quebec, Canada. It stands on the Ottawa river, opposite Ottawa. It is a lumbering centre, and has a number of manufactures. Pop. 35,233.

HULTON, LITTLE. Urban dist. of Lancashire. It is 4 m. S.E. of Bolton, on the L.M.S. Rly. Coal-mining is the chief industry. Pop. 8,315. Middle Hulton is 3½ m. S.W. of Bolton; at Over Hulton, 4 m. S.W. of Bolton, is Hulton Park.

HUMANISM. Name given to a phase of the intellectual movement which marked the transition from the Middle Ages to modern times during the period called the Renaissance (q.v.). It looked for an ideal system of culture and found it in the revival of classical learning. Starting in Italy, it may be said to embrace the period from Petrarch (1304-74) to Melancthon (1497-1560).

HUMBER. Estuary on the E. coast of England. Formed by the rivers Ouse and Trent, and separating the cos. of York and Lincoln, its length is 37 m. and breadth from 1 m. to 8 m. The entrance is partly enclosed on the N. by Spurn Head. Grimsby is situated on the S. shore near the entrance, Hull about midway along the N. shore, and Goole at the head of the estuary.

HUMBERT (1844-1900). King of Italy. Born at Turin, March 14, 1844, he was the eldest son of Victor Emmanuel II and Maria Adelaide, archduchess of Austria. In 1868 he married his cousin, Princess Margherita of Savoy (d. 1926), and on Jan. 9, 1878, succeeded to the throne. The great popularity which he earned by his bravery and his deeds of kindness waned towards the close of his life, and on July 29, 1900, he was assassinated at Monza by an anarchist, Bresci. His successor was his only son, Victor Emmanuel III (q.v.).

HUMBERT, CHARLES (1866-1927). French journalist and politician. He was born at Loison, May 28, 1866. Entering politics, he became a senator and vice-president of the Senate army commission. When the Great War broke out, Humbert contributed numerous articles to *Le Journal* in support of the Allied cause. Later, however, suggestions of treason were spread abroad, and Humbert's name was mentioned in the case of Paul Bolo (q.v.). In 1917 it was alleged that he had accepted money supplied from German sources to gain control of *Le Journal*. The trial, which ended on May 9, 1919, resulted in his acquittal. He died Nov. 2, 1927.

HUMBLE BEE OR BUMBLE BEE (Bombus). Genus of wild bees found in nearly all the warm and temperate regions of the world. All are heavily built, covered with thick hair often arranged in coloured bands, and social in habit, though the communities are small. The cells of the humble bee form an irregular mass, unlike the comb of the honey-bee, and the small quantity of honey stored is only for the present use of the queen. See *Bee*.

HUMBOLDT, FRIEDRICH HEINRICH ALEXANDER, BARON VON (1769-1859). German scientist. Born in Berlin, Sept. 14, 1769, in 1799 he sailed to Venezuela,



Baron von Humboldt, German scientist
After Carl Beggs

and made extensive explorations in the region of the Orinoco and the Amazon. In 1802 he ascended Chimborazo to the height of 19,000 ft., travelling thence to Peru and on to Mexico. Later he published the results of his travels in 30 volumes. His great work, *Kosmos*, an encyclopedic account of the physical universe, was published in four volumes between 1845 and 1858. Humboldt suggested the igneous origin of rocks, made a study of terrestrial magnetism and of plant distribution, and left his mark on many branches of science. He died May 6, 1859.

His elder brother, Karl Wilhelm (1767-1835), was employed in diplomatic work between 1810 and 1819, being minister at Vienna and taking part in conferences in Paris, London, Aix-la-Chapelle, and elsewhere. Most of his time, however, was devoted to literary work, especially philology. He devoted special attention to the Basque language, and began a book on that of the Kawi of Java, the introduction to which is regarded as a landmark in the study of philology. He was one of the founders of Berlin University. He died April 8, 1835.

HUME, DAVID (1711-76). Scottish philosopher and historian. Born in Edinburgh, April 26, 1711, of a good Scottish family, he was educated at Edinburgh University. In 1734 he went to France to study philosophy with the Jesuits, and in 1737 appeared his first book, *A Treatise of Human Nature*, written from the standpoint of universal scepticism which was the basis of all Hume's philosophy. His *Essays*, *Moral*, *Social*, and *Political*, published in Edinburgh in 1741-42, were well received.

In 1752 he settled in Edinburgh as librarian to the Advocates' library. Meanwhile he had published *An Enquiry Concerning the Principles of Morals*, 1751, in which he propounds a philosophy with a definite utilitarian note, and *Political Discourses*, 1751, which foreshadowed the free trade ideas of Adam Smith. In 1754 was published the first part of a *History of England*, other parts following in 1756, 1759, and 1762. The work was a great success and passed into a number of editions. Hume died in Edinburgh, Aug. 25, 1776.

HUME, JOSEPH (1777-1855). British politician. Born Jan. 22, 1777, at Montrose, he studied medicine at Edinburgh, and became an army surgeon. He entered the House of Commons in 1812 as Tory M.P. for Weymouth. In 1818, when he was again returned to Parliament, he had become very radical. He remained in Parliament until his death, representing in turn constituencies in Scotland, Ireland, and England, and made a reputation by his untiring zeal for economy and reforms. He died Feb. 20, 1855.

HUMERUS (Lat.). In anatomy, the upper arm bone. The superior extremity consists of a rounded head which forms a ball and socket joint with the glenoid cavity of the shoulder blade, while the inferior extremity forms a hinge joint with the bones of the forearm. See *Arm*; also illus. p. 81.

HUMMING BIRD. Large family of birds, Trochilidae. Mostly of very small size, they are found chiefly in central and tropical S. America. They derive their name from the sound produced by the rapid vibration of their wings as they hover before a flower. There are about 500 known species. In most cases the plumage is extremely brilliant and glistening. The effect is enhanced by the birds' crests, tufts, ruffs, and beards of feathers. Many of them have also elongated and forked tails of elaborate character. The back is long and slender. The popular idea that humming birds live on the nectar of flowers is erroneous, minute insects being their chief food.



Humming Bird (Tame) for its brilliant hue
W. S. Herridge

HUMPERDINCK, ENGLEBERT (1854-1921). German composer. Born at Siegburg, Sept. 1, 1854, he assisted Wagner to produce *Parsifal* at Bayreuth. In 1887 he became a teacher in the conservatoire of music at Frankfurt, and in 1900 was head of the Meister Schule, Berlin. Humperdinck's fairy opera, *Hänsel and Gretel*, 1893, was the cause of his sudden leap to fame. He died Sept. 27, 1921.

HUMPHRY, OZIAS (1742-1810). English painter. Born at Honiton, Sept. 8, 1742, he succeeded Samuel Collins at Bath in his practice as a miniaturist, but in 1763 came to London, where he painted miniatures with great success. He became A.R.A. in 1779, and in 1791 was elected R.A. Failing sight compelled him to abandon miniature in his last years, but he took up portraiture in crayons. He died March 9, 1810. See illus. p. 604.

HUMUS. Decomposed organic matter in soil. When vegetable matter decays the hydrogen, oxygen, nitrogen, and carbon components evaporate as water, ammonia, and carbon dioxide, etc., or sink into the earth in solution. The residue forms the compound-humus, a substance made up of crenic acid, ulmin, etc., constituting a valuable fertiliser.

HUNCHBACK OR HUMPBACK. Deformity due to curvature of the spine, which in severe cases causes an angular mass to project from the back. The condition is nearly always due to tuberculous disease of the vertebrae.

Of historic hunchbacks one of the most notable was Richard III of England, called Richard Crookback. Hunchbacks figure in fairy lore and legend. See *Punch*.

HUNDRED. Name given to a division of most of the English counties. Its origin is doubtful, one theory being that it was the area upon which, in Anglo-Saxon times, a hundred warriors lived, and another that it contained 100 hides. Hundreds varied considerably in size, and are first mentioned in England in the time of Edgar. The hundred had its own court and sent representatives to that of the shire.

HUNDRED DAYS. Name given to the period between Napoleon's return from Elba and his defeat and surrender after Waterloo. See *France*; *Napoleon*.

HUNDRED YEARS' WAR. Struggle between England and France (1338-1453). It began with the claim of Edward III to the crown of France and the English won victories at Sluys (1340); Crécy (1346); and Poitiers (1356). The second period of the war, beginning in 1369, was marked by French successes, but after 1380 French fortunes again failed.

Henry V, reviving Edward III's claims, invaded France, captured Harfleur, and won the victory of Agincourt in 1415. Recognized as heir to the French throne by the treaty of

Troyes (1420), Henry died in 1422. The appearance of Joan of Arc in 1429 revived the French cause, which continued to flourish after her capture and death. In 1453 the English were expelled, having lost all their French possessions save Calais. See Agincourt. Crécy; Joan of Arc; Poitiers; etc.

HUNGARY. Independent kingdom of central Europe, formerly part of the Austro-Hungarian Empire. The old Hungary con-



Hungarian types.
1. Cattleman of the Pustas. 2. Hungarian noble attired in national dress



sisted of a great and a minor plain astride the Danube, with the Carpathians on the N. and E., Alpine foothills on the W., an Adriatic coastline and a Karst mt. system on the S.W., and a river frontier on the S.E. By the Treaty of Trianon, June 4, 1920, Hungary lost the greater part of her forests and coal and iron fields, as well as her coastline, being reduced to little more than the great plain, the Alföld. The N. mts. were given to Czechoslovakia, the E. plateau and mts to Rumania, the W. foothills to Austria, and the S.W. prov. of Croatia-Slavonia to Yugoslavia. Parts of her great rivers, the Danube and the Tisza (Tisa or Theiss), remain to her, and also Lake Balaton. The area is now about 36,000 sq. m., as compared with 126,000 sq. m. The capital is Budapest. Pop. 8,525,725.

During the Great War Hungary's fortunes were wound up with those of Austria. On Oct. 31, 1918, a revolution broke out in Hungary which aimed at making the country independent of Austria, and on Nov. 16 an independent republic was proclaimed, Count Karolyi becoming provisional president. This government lasted until March 22, 1919, and was succeeded by a Bolshevik ministry under Bela Kun. On Aug. 7 a coup d'état resulted in the archduke Joseph being appointed governor of state, but the Supreme Council in Paris intimated that no Hapsburg must have any place in Hungary's constitution, and on Mar. 1, 1920, Admiral Horthy (q.v.) was elected regent. Charles, the ex-emperor, who had abdicated in Nov. 1918, twice attempted to regain the throne.

Since the treaty of Trianon Hungary has made protests against the mutilation of her territories, and powerful interests are at work to endeavour to obtain a revision of the treaty. In 1926 the single chamber National Assembly was replaced by

a Chamber of Deputies and an Upper Chamber. Hungary is regarded as a monarchy with a vacant throne, the regent exercising the functions of a monarch. See Austria-Hungary.

HUNGERFORD. Market town of Berkshire. On the Kennet, 26 m. from Reading, and served by the G.W. Rly. and the Kennet and Avon canal, it is a hunting and angling centre. The town is known for its annual festival, celebrated at Hocktide (q. v.). Near is Inkpen Beacon. Market day Wed. Pop. 2,784.

HUNGERFORD. English harony dating from 1426. It was held by the earls of Huntingdon from 1529 until 1789, when it passed, with other haronies, to the mother of the 1st marquess of Hastings. When the 4th marquess died in 1868 the haronies fell again into aheyance, but in 1871 they were granted to the countess of Loudoun. After another aheyance the harony was granted to Viscountess St. Davids in 1921.

Hungerford Market, London, built originally in 1669 and enlarged in 1831-33, took its name from Sir Edward Hungerford (1632-1711). It was pulled down in 1862 to make room for the Charing Cross railway terminus.

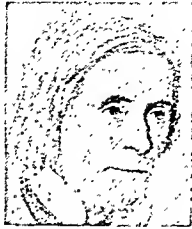
The existing Hungerford Bridge, built 1860-64, is partly supported upon the piers of the old Hungerford suspension bridge, made for foot passengers only. See Charing Cross.

HUNMANBY. Village of Yorkshire (E.R.). It is a little way from Filey, on the L.N.E. Rly. Its hall was a residence of the Wilson family. In 1928 it was bought by the Wesleys for a girls' school. Pop. 1,501.

HUNS. Name of a race of Asiatic origin who invaded Europe in the 4th century. The Huns, whose name became a hyword for merciless savagery, crossed S. Russia, subjugating or wiping out the populations, and subduing amongst other tribes the Ostrogoths, at the end of the 4th century A.D. In the second quarter of the 5th century their khan was the mighty warrior Attila (q.v.), who swept with his devastating armies across Central Europe, but was flung back at the battle of Châlons, 451. After his death the Huns probably became absorbed among the later hordes which were pressing into Europe.

London, on the L.N.E. Rly. It consists of Old Hunstanton and New Hunstanton. In the former are the fine church of S. Mary, with interesting monuments, and the hall, the residence of the Le Strange family. New Hunstanton is an urban district. Pop. 4,282. Pron. Hunston.

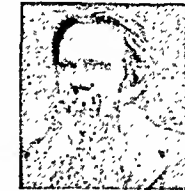
HUNT, JAMES HENRY LEIGH (1784-1859). British writer. Born at Southgate, near London, Oct. 19, 1784, he joined his brother John in 1808 in the conduct of a weekly newspaper, The Examiner. Leigh Hunt acted as editor of the new paper, the radical views of which brought it into conflict with the authorities; in 1813 he was sentenced to two years' imprisonment and a fine of £500 for libelling the Prince Regent. During his imprisonment he wrote the narrative poem The Story of Rimini.



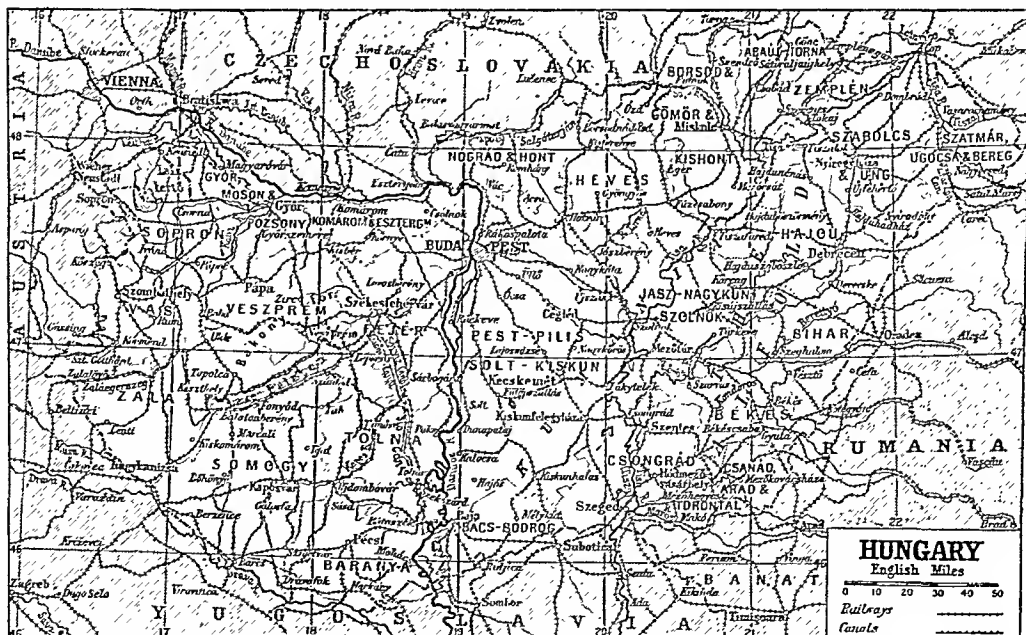
Leigh Hunt, British writer
From a drawing by W. Williams

In 1822 Hunt with his wife and seven children arrived in Italy to join Byron and Shelley in establishing a new quarterly magazine. Within a week, Shelley had been drowned; Byron and Hunt proved antipathetic, and the new magazine died with the fourth number. The Hunt family returned to London in 1825; and in 1828 appeared Lord Byron and Some of his Contemporaries. For the rest of his life Hunt was engaged in journalistic and literary work. He died Aug. 28, 1859. Consult Leigh Hunt, E. Blunden, 1930.

HUNT, WILLIAM HOLMAN (1827-1910). British painter. Born April 2, 1827, he entered the Academy schools in 1844, where he made the acquaintance of Millais. The first picture



W. Holman Hunt, British painter
Barraud



Hungary. Map of the state, formed out of the Austro-Hungarian empire, as defined by treaties after the Great War

HUNSTANTON. Watery place of which Hunt exhibited at the Academy was Norfolk. It stands on the E. side of the Wash, Hark!, 1846. In 1848 he started with Millais 15 m. from King's Lynn, and 112 m. from and Rossetti the Pre-Raphaelite Brotherhood,

a protest against the work of the English school, at that time represented by Landseer, Leslie, Cope, Fribb, and others. Holman Hunt gave the fullest attachment to the original ideas of the P.R.B., and was the only one who, throughout his whole life, painted on the lines laid down by the youthful aspirants. He died in London, Sept. 7, 1910.

Hunt's greatest paintings are *The Hiring Shepherd*, *The Light of the World*, which is in Keble College, Oxford, *The Scapegoat*, *The Finding of the Saviour in the Temple*, *The Shadow of Death*, *The Triumph of the Innocents*, *Christ Among the Doctors*, *Isabella and the Pot of Basil*, *The Miracle of the Sacred Fire*, *Strayed Sheep*, and certain portraits. His work can best be studied in the picture galleries in Oxford. See Pre-Raphaelites.

HUNTER, SIR ARCHIBALD (b. 1856). British soldier. Born Sept. 6, 1856, he entered the army in 1874. In 1884 he went to Egypt, where he remained for 15 years. He was in the fighting of 1885-86, led the British division at the battle of Omdurman, and was made governor of Omdurman. In 1899 he went to S. Africa, where he was chief of staff to White and then to Buller and later commanded a division. From 1901-14 he held important commands: in Scotland 1901-03, in India 1904-9, at Gibraltar 1910-13 and at Aldershot in 1914. From 1918-22 he was Unionist M.P. for the Lancaster division. He was knighted, 1898.

HUNTER, JOHN (1728-93). British surgeon and anatomist. Born at Long Calderwood, Lanarkshire, Feb. 13, 1728, he came to London in 1748, and studied surgery at Chelsea under Cheselden, and at St. Bartholomew's under Percival Pott. He was house surgeon at St. George's, 1750, and surgeon, 1768. He began private practice in 1763; had Edward Jenner as pupil, 1770-72; was elected F.R.S., 1767; and was surgeon-extraordinary to George III, 1776. He built an anatomical museum in Leicester Square, 1784-85; began his operation for the



John Hunter,
British surgeon
Portrait by
Sir J. Reynolds

cure of aneurism, 1785, and was appointed surgeon-general, 1790. He died Oct. 16, 1793.

Besides anatomy, Hunter was distinguished in surgery, biology, physic, and pathology. His treatise on the Blood, Inflammation, and Gunshot Wounds was first published in 1794. His other works include studies on the Venereal Disease, 1786; *Observations on Certain Parts of the Animal Oeconomy*, 1786. His collection of over 10,000 specimens was bought by the nation in 1795, and presented to the Royal College of Surgeons, London, in connexion with which the annual Hunterian Oration was inaugurated in 1813. The Hunterian Society was founded in his honour in 1819. Its headquarters are 44, Harley Street, W.1.

John Hunter's elder brother William (1718-83), was first professor of anatomy, Royal Academy, 1768; and formed a museum which was acquired by Glasgow University.

HUNTINGDON. Borough, market town, and county town of Huntingdonshire. It stands on the left bank of the Ouse, 59 m. from London, on the L.N.E. and L.M.S. Rlys. Across the river is Godmanchester, connected by an old stone bridge. There is a grammar school, in which are incorporated the remains of a hospital founded by David I, king of Scotland. Other buildings include Cromwell

House, the successor of the one in which the Protector was born, and the George, an inn with galleried courtyard. Market day, Sat. Pop. 4,194.

The title of earl of Huntingdon has been borne by the family of Hastings since 1529 when George, Lord Hastings, was made earl of Huntingdon by Henry VIII. In 1789 a descendant of the 2nd earl took the title, in 1818 his nephew was declared its rightful possessor, and from him the present earl is descended. The earl's eldest son is called Viscount Hastings.

HUNTINGDON, SELINA, COUNTESS OF (1707-91). Founder of a religious organization known as the Countess of Huntingdon's Connexion. A daughter of Earl Ferrers, she married the 9th earl of Huntingdon. After the deaths of her two sons in 1743, and that of her husband in 1746, she devoted herself to the spread of evangelical religion. On Aug. 24, 1768, at Trevecca House, Talgarth, South Wales, she opened a college for the training of young ministers. In 1792 the institution was removed to Cheshunt, and in 1905 to Cambridge. The churches founded by the countess number at the present day about 38.



Selina Hastings,
Countess of Huntingdon

HUNTINGDONSHIRE or **HUNTS.** South midland county of England. The surface slopes generally from the undulating hilly edges of the Midland Plain of the W. to the valley of the Ouse, or to the low levels of the Fens. The high ground is arable; the hedgeless, dyke-bounded fields of the Fenland are devoted to wheat or roots. The Nene forms part of the county boundary in the N. and the Great Ouse crosses it in the south. More than a third of the county is permanent pasture, and a quarter of the remaining area is devoted to wheat; barley and root crops come next. The L.N.E. and L.M.S. Rlys. serve the county. Huntingdon, the county town, Godmanchester, St. Ives, and St. Neots are among the towns. Its area is 366 sq. m. Pop. 54,741.

HUNTINGTOWER. Village of Perthshire. It stands on the Almond, 3 m. N.W. of Perth. The ancient castle, formerly called Ruthven Castle, was the scene of the raid of Ruthven in which the young king James VI was kidnapped by the earl of Gowrie in 1582.

HUNTLY. Burgh of Aberdeenshire. It is 41 m. N.W. of Aberdeen on the L.N.E. Rly. At the junction of the Deveron and Bogie, Huntly is the chief town in Strathgogie.

Huntly, or Strathgogie, Castle, the seat of the Gordon family, was built in the 13th century, destroyed in 1594, and restored in 1602; it is now in ruins. George Macdonald, novelist and critic, was a native. Pop. 3,752.

The Scottish title of marquess of Huntly has been borne by the family of Gordon since 1599. George, the 2nd marquess, was a royalist during the Civil War, for which he was executed by the Scottish parliament in 1649. George, the 4th marquess (1643-1716), was made duke of Gordon in 1684, a title held by his descendants, together with that of marquess of Huntly, until its extinction in 1836. The marquessate then passed to George Gordon (1761-1853), a descendant of the 2nd marquess. The marquess's seat is Aboyne Castle, Aberdeenshire. He is the premier marquess of Scotland. The 11th marquess (b. 1847) published his reminiscences, *Milestones*, in 1926.



2nd Marquess of
Huntly,
Scottish royalist
After Van Dyck

HUNYADI, JANOS CORVINUS (d. 1456). Hungarian soldier. In 1420 he took part in the war against the Hussites and soon became an important figure in Hungary. In 1440 he had a large share in making Ladislaus of Poland its king, and in 1445, the succeeding king being a prisoner, he was himself appointed regent. Most of his time was occupied in campaigns against the Turks, and he had just driven them from Belgrade when he died of the plague, Aug. 11, 1456.

HUON PINE (*Daerydium franklinii*). Tall overgreen tree of the order Coniferae. It is a native of Tasmania, related to the yew. The scale-like leaves overlap. It attains a height of 100 ft., and the close-grained wood is beautiful and useful, with an aromatic odour.

HURLING or **HURLEY.** Irish game played with crooked sticks or with clubs and a ball. It is played in a similar manner to hockey, but is of much earlier origin. Each side consists of an equal number of players, who may knock or carry the ball with the "burlley," but may not handle it. See Hockey.

HURLINGHAM. Dist. of Fulham, Middlesex. Between the Hurlingham Road and the Thames, near Putney Bridge is Hurlingham House, since 1874 the headquarters of the Hurlingham Club.

The club was formed in 1867 for pigeon-shooting, but this sport was discontinued there in 1906. The Hurlingham Club, since its adoption of polo, has been the governing body in England for that game. See Polo.

HURON. One of the Great Lakes of N. America, forming part of the boundary between U.S.A. and Canada. Its length is 207 m., breadth 101 m., average depth 700 ft., and area 23,200 sq. m. Georgian Bay indents the



Huntingdonshire. Map of the English south midland county, chiefly agricultural and pastoral in character

Ontario coast, and Saginaw Bay the coast of Michigan. The Sault Ste. Marie ship canal connects the lake by North Channel with Lake Superior; St. Clair river and lake and Detroit river connect it with Lake Erie; and the strait of Mackinac with Lake Michigan. The Maitland and Saugeen rivers enter Huron on the E. Canadian side, and Georgian Bay receives the French, Severn, and Nottawasaga rivers, while on the U.S. side are the Saginaw, Au Sable, and Thunder Bay rivers.

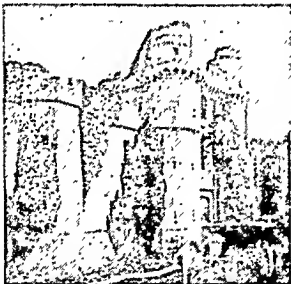
Huron is the name of a confederation of Indian tribes once living in Ontario, so called in derision by the French, the word meaning lout. Of Iroquois race, their name for themselves was Wendat or islander, preserved under the form Wyandot. See American Indians; Wyandot.

HURONIAN. Name given to the upper group of the Archaean system of rocks found largely in the neighbourhood of Lake Huron. The rocks consist mainly of sandstones, grits, and igneous rocks, the ore deposits including iron, copper, nickel, and silver.

HURSLEY. Village of Hampshire, 5 m. S.W. of Winchester. At Hursley House Richard Cromwell resided, and the church contains a memorial to him. In 1836-66 John Kehle was vicar here, and he is buried in the churchyard. The house, which was the property of Cromwell's father-in-law, was rebuilt after 1800 and, known as Hursley Park, was long the seat of the Heathcote family. Pop. 950.

HURST CASTLE. Fortress in Hampshire. On a promontory, $3\frac{1}{2}$ m. from Lymington, at the W. end of the Solent, it was built by Henry VIII to guard the strait, and was for a time, in 1648, the prison of Charles I.

HURSTMONCEUX. Village of Sussex. It is 12 m. N.E. of Eastbourne. The castle was built in the 15th century, destroyed in the 18th, and restored in the 20th. The old gate house is a notable piece of architecture. A Hare became owner of the castle in 1727, and the living was held by Julius C. Hare from 1835-55. Pop. 1,500.



Hurstmonceux Sussex. Main gate house and entrance to the castle
Fifth

HURST PARK. Racecourse in Surrey, England. The property of the Hurst Park Club, it occupies a flat area of ground known as Molesey Hurst, abutting on the Thames, opposite Hampton.

HURSTPIERPOINT. Village of Sussex. It is 8 m. N. of Brighton. Here is St. John's College, a public school. To the south is Wolstonbury Beacon (677 ft.), with Roman earthworks. The station is Hassocks, $1\frac{1}{2}$ m. away on the Southern Rly. Pop. 3,099.

HUS or **HUSS**, **JOHN** (c. 1373-1415). Bohemian theologian and reformer. Born of peasant stock at Husenitz, in S. Bohemia, he was ordained priest in 1400, and in 1402 appointed rector of Prague University, where he had been teaching philosophy. Deeply influenced by the writings of John Wycliffe (q.v.), he became a formidable critic of the Church's doctrine and discipline, and in 1409 an inquiry was ordered into allegations of heresy in his preaching, notably his avowed admiration for Wycliffe. In 1410, with the authority of a bull of Pope Alexander V, the archbishop of Prague, Štěpán, ordered the

works of Wycliffe to be burnt, and in the next year Hus and his supporters were laid under interdict by Pope John XXIII. In 1412 he retired to the country districts, where he preached and wrote various theological works, the most noteworthy being his *De Ecclesia*.



John Hus,
Bohemian reformer

The affairs of Bohemia had so disturbed the unity of the church that the emperor Sigismund offered Hus a safe-conduct to attend the Council of Constance (q.v.), 1414, but on his arrival there he was arrested, tried before the council, condemned, and burnt at the stake, July 6, 1415. His death called into being the wars of the Hussites (q.v.).

HUSBAND. A married man. By English law a husband is not liable for his wife's debts unless they were contracted by her as his agent. She has power to pledge his credit for necessities for the household, for herself and her husband according to the husband's rank, station, and means. A husband can, however, prohibit his wife from pledging his credit, and, even without such a prohibition, he is not liable for debts contracted by her for the household or herself or children if he gives her an adequate allowance. A husband is, however, liable to an unlimited extent if his wife libels or slanders anyone or commits fraud or negligently injures anyone. He is liable to be sued either alone or with his wife and must pay whatever damages are awarded.

It is a husband's duty to maintain his wife. She cannot bring an action against him for maintenance, but if he does not maintain her she may apply to the poor law authorities and they will maintain her and recover the cost from the husband.

Since the passing of the Married Women's Property Acts of 1870 and 1882 the whole of a woman's property belongs to her for her separate use and her husband has no control over it. See Intestacy.

HUSKISSON, WILLIAM (1770-1830). British statesman. Born at Birch Moreton, Worcestershire, March 11, 1770, in 1793 he obtained a position under the British government, and in 1796 entered the House of Commons. He was secretary of the treasury 1804-6, and again 1807-9. In 1823 he was made president of the board of trade and the chief adviser of the ministry on economic questions. He is regarded as largely responsible for the navigation laws, for the introduction of a new sinking fund, and for considerable steps in the direction of free trade. From 1827-28 he was secretary of the colonies. He was killed at the opening of the Liverpool & Manchester Rly., Sept. 15, 1830.

HUSSAR. Name given to a certain type of light cavalry. The name is of Hungarian origin. The original hussar wore a loose jacket and a busby (q.v.).

Up to March, 1921, there were 12 hussar regiments in the British Army, namely, 3rd, 4th, 7th, 8th, 10th, 11th, 13th, 14th, 15th, 18th, 19th, and 20th, but in that month the 19th and 20th were disbanded. In 1920 certain modifications in the titles of the hussars were made, e.g. 3rd (King's Own) Hussars changed to the 3rd The King's Own Hussars.

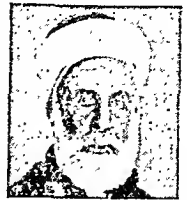
HUSSEIN, IBN ALI. Ex-king of the Hejaz and grand shérif of Mecca. In July, 1916, at Mecca, Hussein proclaimed the independence of Arabia and the repudiation of Ottoman rule; then, organizing the Arab forces, and placing the northern army under the command of his son, the Emir Feisal, he cooperated successfully with the Allies in the campaign against the

Turks. Before the end of 1916 Hussein was formally recognized by the Allies as king of the Hejaz. As the result of the capture of Mecca by the Wahabhis, he abdicated, Oct. 1924. See Arabia; Hejaz; Nejd.

HUSSEIN KAMIL

(1853-1917). Sultan of Egypt. Born Dec. 20, 1853

the son of Ismail Pasha, Hussein finished his education in Paris, and, returning to Egypt, began to take part in its government. Always a supporter of British rule, Hussein became president of the legislative council and general assembly in 1909, but only held these posts for about a year. In 1914, when Egypt was declared a British protectorate, Hussein became its first sultan. He reigned from Dec. 1914, until his death on Oct. 9, 1917. His son, Hussein Kamil-ed-Din, was commander of the Egyptian army, but his successor was his brother Ahmed Fuad. See Egypt.



Ibn Ali Hussein,
ex-king of the Hejaz



Hussein Kamil,
Sultan of Egypt

HUSSITES. Followers of John Hus (q.v.). After the burning of their leader at Constance in 1415, his followers formed themselves into a league, which became so powerful that Wenceslaus, king of Bohemia, was forced to tolerate them. On his death, 1419, the crown passed to his brother, the emperor Sigismund, and in 1420 war broke out between the emperor and the Hussites. Pope Martin V supported the emperor, but for eight years no headway was made against the generals of the Hussites, Ziska and Prokop. In 1431 the council of Basel undertook to arrange peace, and a formal agreement was signed in 1436. See Bohemia; Protestantism; Reformation.



Hustings. A satirical picture by Hogarth representing a scene on the hustings during polling

HUSTINGS. Platform or elevated stand on which, in England, candidates for Parliament used to be nominated, and from which they addressed their constituents. Nomination on the hustings was abolished in 1872. The term was also used for the courts of hustings, which formerly existed in many cities for dealing with actions for the recovery of land within the city limits.

HUTCHESON, FRANCIS

(1694-1746). British philosopher. Born in Ireland.

Aug. 8, 1694, he became in 1729 professor of moral philosophy at Glasgow, where he had already studied, 1710-16. The remainder of his life was spent in discharging his duties there. Hutcheson is generally considered the founder



Francis Hutcheson
British philosopher

of the Scottish school of philosophy. Man possesses a moral sense of what is right or wrong, which directly approves or disapproves of any course of action. Moral goodness consists in a proper relation of man's various inclinations founded on the above moral sense. General benevolence and disinterestedness, the endeavour to secure general happiness, constitute virtue. Man also has a sense of the beautiful.

HUTCHINSON, JOHN (1615-64). English soldier. Son of Sir Thomas Hutchinson, of Owthorpe, Nottinghamshire, his mother being a Byron, he was born in Sept., 1615. When the Civil War broke out he took up arms for the Parliament, and, on account of his local standing, was made governor of Nottingham Castle, which he defended until the end of the war. He sat in Parliament as M.P. for Nottingham, was one of the king's judges, and afterwards a member of the council of state. Disagreement with Cromwell soon drove him into retirement, from which he emerged in 1659 to sit in the restored Parliament and support Monk. In 1663 he was arrested on a charge of treason, and died in prison, Sept. 11, 1664.



Col. J. Hutchinson,
English soldier

HUTH, HENRY (1815-78). British banker, and bibliophile. He was the son of a German who settled in London in 1809 and founded the financial house of Huth & Co. Henry joined his father's business, but found time to travel extensively. He was an intimate friend of H. T. Buckle, the historian, who helped him to form the library of early printed books by which his name is chiefly remembered. It was specially rich in early printed English, Spanish, and German bibles, bibliographies, voyages, travels, plays, and poetry, and included rare MSS. and prints. The library was inherited by his son, Alfred Henry Huth (1850-1910), who augmented it and completed the catalogue in 1880. The public sale of the library began in Nov., 1911, and ended June 25, 1920, realising over £300,000.

HUTTON, RICHARD HOLT (1826-97). British journalist and theologian. Born June 2, 1826, at Leeds, he edited the *Inquirer*, 1851-53; was joint editor with Walter Bagehot of the quarterly *National Review*, 1855-64; assistant editor of *The Economist*, 1858-60; and, with Meredith Townsend, joint editor and part proprietor of *The Spectator*, 1861-97. He died Sept. 9, 1897.

Hutton's writings include *Studies in Parliament*, 1866; *Essays Theological and Literary*, 1871; *Sir Walter Scott*, 1878; *Cardinal Newman*, 1891. Criticisms on Contemporary Thought and Thinkers, 1894.

HUXLEY, THOMAS HENRY (1825-95). British biologist and scientist. Born at Ealing, May 4, 1825, in 1846 he was appointed assistant-surgeon on H.M.S. *Rattlesnake*, then about to start on a surveying expedition in the Torres Straits. During the four years' voyage Huxley made valuable zoological observations, the results of which were embodied in a paper, *On the Anatomy and Affinities of the Family of the Medusae*, which marked a new epoch in comparative anatomy. In 1851 he was elected F.R.S., and in 1854 he received an appointment at the School of Mines.



Thomas H. Huxley,
British biologist

The great work of his life was as the exponent of the doctrine of evolution, first formulated by Darwin in 1859. His lectures *On the Comparative Anatomy of Man and the Higher Apes*, delivered between 1859-62, those *On the Causes of Phenomena of Organic Nature*, and his essays and addresses of the next ten years, had a lasting influence upon scientific progress and freedom of thought, particularly in the case of Man's Place in Nature and the lecture *On the Physical Basis of Life*. Huxley, who became president of the Royal Society, 1881, died June 29, 1895.

Several of Huxley's descendants were distinguished. Leonard (b. 1860), his eldest son, editor of *The Cornhill Magazine*, wrote his father's life, and the names of Leonard's two sons, Aldous Leonard (b. 1894) and Julian Sorell (b. 1887) are noted in literature and science respectively.

HUYGENS, CHRISTIAN (1629-95). Dutch scientist. Born at The Hague, April 14, 1629, he won a high reputation in mathematics and astronomy. He made a number of improve-

ments in telescope lenses, discovering with their aid, in 1655, the fourth satellite of Saturn and defining its ring. In 1660 he visited England, and to him Newton was indebted in developing his laws of motion. He discovered the polarisation of light, and in 1678 announced his wave theory of light, by which he was able to explain reflection and refraction. In 1673 was published *Horologium Oscillatorium*, the most important of his many scientific works. The first watch regulated by a spring balance was made under Huygens' direction at Paris, and presented to Louis XIV. He died June 8, 1695.

HUYSMANS, CAMILLE (b. 1871). Belgian politician. Having come to the front as an advocate of socialism, he was appointed in 1905 secretary of the international socialist bureau. During the succeeding 25 years he took an active part in most of the international conferences and congresses of its adherents. In 1910 he was elected to the Belgian chamber of representatives, and in 1925 was appointed minister of arts and sciences.

HUYSMANS, JORIS KARL (1848-1907). French author. Of Dutch descent, he was born Feb. 5, 1848, and became a civil servant. He found time, however, to write a good deal. In the best of his early novels Huysmans displayed an uncompromising realism. He then turned to studies of extreme decadence. With *En Route*, 1895, he entered his final stage, this being a mystical catholicism, which was further developed in *La Cathédrale*, 1898, and *L'Oblat*, 1903.

Huysmans also wrote volumes of art criticism. Some of his books have been translated into English. He died in Paris, May 13, 1907.

HWANG-HO OR HOANG-HO (Yellow river). River of China. Rising more than 13,000 ft. above sea level in the plateau of Tibet, it flows through China with a very tortuous course to the Pacific. Its chief tributary is the Wei-ho. The total course to the mouth in the Gulf of Chih-li is about 2,600 m.

The Hwang-ho delta extends from Kai-feng-fu to the Gulf of Chih-li and to the Yellow Sea at the old mouth in Kiang-su province. The main mouth has shifted frequently.

HYACINTH. Hardy bulbous flowering plants of the order Liliaceae. Each bulb bears a spike of bell-shaped, sweetly scented flowers in all shades of colour except a good yellow. Hyacinths are cultivated by planting in sandy soil during the month of September or October. They may be grown without soil by placing the bulbs in glasses filled with water during October and storing these glasses in darkness until they have become filled with roots. The bulb glasses should then be placed in the full sunlight. After flowering the roots and stems should be allowed to die away and the bulbs then stored in ashes until the autumn. Hyacinths that have once flowered in water are useless for any purpose except that of bedding. The bluebell (q.v.) or wild hyacinth is *Scilla non-scripta*.



Hyacinth. Flower spikes
in full bloom

HYACINTHE, PÈRE (1827-1912). French preacher. His name was Charles Jean Marie Loyson, and he was born at Orleans, March 10, 1827. He entered the Carmelite order and became the most notable preacher of his day, attracting vast crowds to S. Sulpice and Notre Dame, Paris. In 1860 he was suspended on a charge of indiscipline, and his refusal to accept papal infallibility led to his separation from the Roman Church. He associated with the Old Catholics, and married in London in 1872. For some time he preached at Geneva, and in 1879 he founded a church in Paris. He died Feb. 8, 1912.

HYAENA. Family of carnivorous mammals (Hyaenidae) confined to Asia and Africa, and placed by zoologists between the civets and the dogs. Of morose and cowardly character, they live on carrion, though they have been known to attack children, rarely men, and to carry off sheep and calves in times of stress. Three species are recognized, striped, spotted, and brown. See *illus. above*.



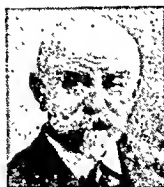
Hyaena. Indian species. See below
W. S. Berridge, F.Z.S.

HYBRID (Lat. *hibrida*, mongrel). Term for the offspring of parents belonging to different species or races in the animal or vegetable kingdom. Most hybrids arise from the crossing of varieties of the same species. Animal hybrids are usually sterile, or if fertile they will only breed with a pure-bred individual. See *Biology*; *Heredity*.

HYDE. Borough and market town of Cheshire. It stands on the Tame, 7½ m. from Manchester, and is served by the L.N.E. Ry. There are cotton mills, iron foundries, engineering works, and hat factories. Market day, Sat. Pop. 33,424.

HYDE PARK. London park. Covering some 360 acres, it is bounded E. by Park Lane, W. by Kensington Gardens, S. by Knightsbridge, and N. by Bayswater Road. It has a riding track called Rotten Row, and is watered by part of the Serpentine.

The N. section has been the scene of many political demonstrations, and on Sundays and weekday evenings orators of all descriptions are to be heard near the Marble Arch (q.v.). The first great international exhibition was held in the park near Knightsbridge in 1851, the original structure of glass and iron being



J. K. Huysmans,
French writer

re-erected at Sydenham as the Crystal Palace (q.v.). The park derives its name from the manor of Hyde.

HYDERABAD. Native state of India. It occupies the central portion of the Deccan plateau. In some parts it is mountainous, in others flat or undulating. The chief rivers are the Godavari and Kistna. The ruler, known as the Nizam, has a salute of 21 guns. The state dates from 1748. The ruling family is Mahomedan. The area of the state is 82,698 sq. m.

The capital, Hyderabad, comprises Andcrun (within the walls), 2 sq. m., and Berun (without the walls), 9½ sq. m. The walls are 6 m. round and the whole city area is 50 sq. m. The Jama Masjid is a copy of the mosque at Mecca. Pop., state, 12,471,770; city, 404,187.

Hyderabad is also the name of a district and municipality in the Sind division of Bomhay. The district extends E. from the Indus almost to the Thar desert, and is an alluvial plain cultivable only near the river. The city lies E. of the Indus and is a great rly. junction. The area of the district is 8,034 sq. m. Pop., dist., 573,450; town, 81,838. See India.



Hyderabad. Principal street looking towards the Four Minarets, built 1591

HYDRA (Gr. water-serpent). In Greek mythology, a nine-headed monster. It was the offspring of Typhon and Echidna, which dwelt in a swamp near Lerna, in Argos, and ravaged the country. The killing of the hydra was one of the twelve labours of Hercules (q.v.).

Hydra is the name of a southern constellation mentioned by Ptolemy. It is the longest constellation in the sky. See Constellation.

HYDRA. Small fresh-water polyp common in ponds in Great Britain, where it attaches itself to the weeds. There are three British species, of which the green hydra is the most common. It consists of a little tube, about ½ to 1 in. in length, with the mouth surrounded by tentacles which have the power of stinging and paralysing the minute animals on which it feeds. See Hydrozoa.

HYDRANGEA. Half-hardy flowering shrubs of the order Saxifragaceae. The familiar common hydrangea (*H. hortensis*) was introduced from China in 1790. The flowers grow in large heads, or corymbs, and for the most part have neither pistil nor stamens, but consist of four petaloid sepals. The flowers are naturally white and pink, but by artificial treatment blue



Hydrangea. Flower-head of the familiar *H. hortensis*

flowers may be obtained. Many species thrive in open air in favoured situations, though as a general rule hydrangeas require greenhouse treatment.

HYDRATE. Chemical compound formed by the union of molecules of water (H_2O) with other molecules or atoms, without a rearrangement of the atoms of the H_2O group. When the H_2O group is rearranged in the new molecule, the resulting compound thus formed is termed a hydroxide.

HYDRAULICS (Gr. *hydōr*, water; *aulos*, a pipe) Term by which is defined that branch of engineering science which treats of the motion of liquids, especially water, and the conveyance of power by means of water-pressure. The underlying principles are based on the laws of hydrostatics and hydrokinetics. The fundamental idea is that of a "head of water." In a long vertical pipe filled with water the pressure at any point is the atmospheric pressure, together with that due to the weight of water supported above this point. If the pipe is bent, the pressure at any point at a given depth below the top is the same as at a point on the same level in the straight pipe, and this pressure is said to be that of a head of water equal to the vertical distance below the top of the pipe.

The water from a reservoir which is situated on a hill may be used to supply the surrounding district, and the head of water at any place in the district is the vertical depth of that place below the source of supply. An artificial head of water may be created by means of an accumulator (q.v.).

A head of water is a source of energy and may be utilised for the performance of work, as the driving of turbines and hydraulic machinery of all kinds, as hydraulic presses, lifts, cranes, dock gates, etc. By means of a siphon water may be transferred by gravity from a high to a lower level, and in its passage may rise, if required, to a greater height than the head of the source of supply; theoretically such a rise in height is limited to 33 ft.; in practice it may not exceed 28 ft.

Water offers such high resistance to compression that for ordinary purposes it may be considered incompressible. It shares with all other fluids the property of transmitting in all directions pressure applied to any part of a body of it. The machines and tools which make use of the energy of water subjected to very high pressures are for the most part various applications of the hydraulic press. The first press was constructed by Bramah about 1795. See Hydro-electric Machinery; Water Power.

HYDRIDE. Term given usually to compounds of hydrogen with metals, but also including those formed with non-metals. Hydrogen combines directly with sodium and potassium to form hydrides. Hydrochloric and hydriodic acids and water are hydrides. See Hydrogen.

HYDROCARBON. Compound containing carbon and hydrogen only. Some 250-300 compounds are known. These can be arranged in a few series according to their chemical action with bromine and nitric acid. Three well-known series are: (1) Paraffins, or saturated fatty hydrocarbons; (2) Olefines, so called because olefant gas (ethylene) is the first of the series; and (3) Acetylene series, acetylene being the lowest. Marsh gas is the only hydrocarbon whose molecule contains

but a single atom of carbon. The paraffins are known as "saturated" because they are incapable of indirect combination. This series contains a larger percentage of hydrogen than any other hydrocarbons. Hydrocarbons are neutral, combustible, and by more or less heat are decomposed into carbon and hydrogen. The chief sources of hydrocarbons are (1) the dry distillation of coal, and (2) petroleum. See Chemistry.

HYDROCEPHALUS. Condition popularly known as "water on the brain," due to an accumulation of fluid within the brain. It may be the result of defects present at birth, or of inflammation causing pressure on the blood vessels in early life. The head gradually becomes enlarged, while the child is often ill-nourished and mentally defective. Convulsions may occur, and only in rare cases is operative treatment successful.

HYDROCHLORIC ACID OR **MURIATIC ACID** (HCl). Liquid prepared by dissolving hydrochloric acid gas in water. The only known compound of hydrogen and chlorine, it can be made by the direct union of these elements, and can also be made by heating common salt and sulphuric acid together and passing the gas into water. The acid is manufactured on a large scale as a by-product in the preparation of soda ash. Hydrochloric acid is a constituent of the gastric juices and plays an important part in digestive processes. Strong hydrochloric acid is a powerful poison, a teaspoonful being sufficient to cause death. See Chlorine.

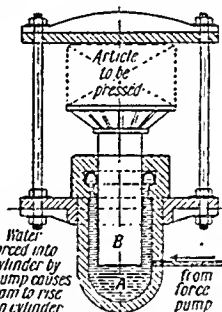
HYDROCYANIC ACID (HCN). Poisonous liquid with a characteristic smell resembling that of bitter almonds, and popularly known as prussic acid. It is prepared by decomposing potassium ferrocyanide by means of sulphuric acid. It is one of the most powerful and rapid of known poisons, and even with dilute solutions fatal results rapidly follow.

HYDRODYNAMICS. Science which treats of the motions and equilibrium of fluids. The subject is treated under its separate sections hydrokinetics and hydrostatics. See Hydrokinetics; Hydrostatics.

HYDRO-ELECTRIC MACHINERY. Machinery for the generation of electricity by various forms of water power. In a great waterfall there is an immense power capable of being utilised, and most of the early hydro-electric installations used such falls. To do this, pipes are led from an artificial reservoir or forebay, fed from the river above the fall, to a power house at the foot of the fall, and the water is passed through these to turbine wheels which generate mechanical energy. The turbines in the majority of large installations are used to drive electric generators, from which electrical energy may be transmitted to wherever it may be wanted.

The greater part of the world's water power is obtained from artificial falls. All rivers and streams have a natural gradient, and in hilly countries this is fairly steep over at least a part of their course. In such a case, power may be developed by diverting the water from the rapidly sloping bed into a gently sloping artificial channel cut along the hill side above the river bed. After traversing this for some distance, the accumulated fall of the river bed can be concentrated at one point and, under favourable circumstances, a fall of many hundred feet may be obtained. An artificial fall may be created by erecting a dam across a stream and impounding the water behind the dam.

Two main forms of hydraulic turbine, the Pelton wheel and the Francis turbine, are used respectively for high, and for medium and low, falls. In the Pelton wheel the supply water issues at high velocity from a nozzle which directs it on to a series of cup-shaped



Hydraulic Press. A. metal cylinder in which ram, B, works up and down. Cylinder is connected to a force pump with a plunger of small area relative to that of ram

buckets surrounding the wheel. Where, owing to the smallness of the head or the large power desired, the volume of water to be handled is very large, the Francis turbine is generally used. This consists of a wheel or runner carrying a series of curved vanes or buckets around its periphery. Water is supplied to the runner through a series of guide vanes entirely surrounding the runner and thus giving a large area of water-way. This type of turbine is adaptable to any head from about 400 ft. to as low as one foot.

In 1929 the Shannon hydro-electric works came into operation, and will ultimately supply current for the whole of the Irish Free State. A barrage was made across the Shannon four miles below Lough Dearg, where the water is diverted to a new channel, 300 ft. wide and 37 ft. deep, leading to the power house $7\frac{1}{2}$ miles away. The head of water is 100 ft., the pipes from the headrace to the turbines being 20 ft. in diameter. When the scheme is in full operation there will be six turbines with a total of about 200,000 h.p. The current is generated at 10,000 volts, which for transmission is stepped up to 38,000 and 110,000 volts.

HYDROFLUORIC ACID. Corrosive colourless liquid usually made by the decomposition of fluorspar by strong sulphuric acid, its chief use being for etching glass.

HYDROGEN (Gr. *hydōr*, water; *gen*, to generate). Colourless, tasteless, and odourless gas, chemical symbol H; atomic weight 1.008; atomic number 1. The lightest gas known, it is fourteen times lighter than air. The boiling point is -252°C . Hydrogen is one of the most widely distributed of all gases. In the free state it occurs in the exhalations of volcanoes, in gases given off by oil wells, occluded in certain minerals, and in the atmospheres of the sun and many stars. Combined, it is a constituent of water, and almost all organic matter and acids.

The gas burns with a non-luminous flame at a very high temperature. It is used as the lifting gas for airships and balloons, and is produced commercially by separation from water gas; by the iron and steam process, in which steam is passed over incandescent iron; by the decomposition of oil into carbon and hydrogen; and by the electrolytic decomposition of water. See Chemistry; Hydrocarbon; Water.

HYDROGEN PEROXIDE (H_2O_2). Colourless or faintly bluish liquid, an unstable compound of hydrogen and oxygen. It is prepared on the commercial scale by dissolving barium peroxide in water and adding sulphuric acid. The chief use of hydrogen peroxide is as a bleaching agent. It is used as an antiseptic.

HYDROGRAPHY. Branch of physical science which deals with the surface waters of the earth. Hydrographical research consists chiefly in the obtaining and preparation of material for navigation, etc., and is an important part of the work of the navies of all nations in peace time. In 1795 was founded the British Hydrographic Office, a department

which has a counterpart in the executives of most civilized nations. At its head is the hydrographer to the Admiralty, who is the official adviser on all hydrographical survey. See Chart; Ocean; Meteorology; Navigation.

HYDROKINETICS. Science of fluids in motion. The fluids considered are understood to be "perfect fluids," in which there is no friction or viscosity between one part of the fluid and another, and the results obtained are often subject to considerable modification in their application to actual fluids, such as water, in which viscosity exists. See Hydraulics; Hydrostatics.

HYDROMEL. Beverage made of honey and water. It is usually fermented (then known as mead), and flavoured with spices or hops. It was known to the Greeks and Romans.

HYDROMETER. Instrument employed to compare the densities of liquids. A type of hydrometer commonly employed consists of a glass bulb at the upper end of which is a graduated glass rod, and at the lower end a smaller bulb which is loaded so as to keep the instrument upright. On the graduated stem the depth to which the instrument sinks in various liquids can be read off. The stem is often graduated so as to indicate directly the specific gravity of the liquid.

HYDROPATHY. The treatment of disease by water, whether by ice, water, or steam, and both internally and externally. The effect of cold baths is to contract the small blood vessels in the skin, thus bringing about a rise in the general blood pressure and stimulating the circulation. Cold baths, cold packs, or ice packs are also employed for reducing the temperature in cases of dangerously high fever. Warm baths have a soothing effect upon the nervous system. Hot fomentations are of value in relieving localised pain and in the treatment of inflammation.

As regards the internal administration of water, in some forms of dyspepsia a glass of hot water is of service, and in acute infectious diseases from four to six ounces of cold water may be taken every two hours. For special purposes, a large variety of baths and douches are used. See Baths; Spa.

HYDROPHOBIA OR RABIES. Acute disease in man and warm-blooded animals, transmitted by inoculation, usually by a bite. Dogs are most frequently affected, but rabies also occurs in cats, cows, horses, pigs, and rabbits. In man the early symptoms, which usually appear in from six to eight weeks, are pain and irritation in the neighbourhood of the bite, headache, loss of appetite, depression, irritability, sleeplessness, and some difficulty in swallowing. Excitability increases, and any slight shock or sudden noise or an attempt to swallow will cause a violent spasm, particularly affecting the muscles of the throat.

A person who has been bitten by an animal suspected of rabies should receive the inoculation treatment devised by Pasteur, either in Paris, or at St. Thomas's Hospital, London.

HYDROPHONE. Instrument invented during the Great War for detecting the presence of submarines by listening for them. The receiver of the hydrophone was dropped into the water and a trained listener stood on the ship's deck with receivers to his ears. He could hear the motion of the submarine's screws as they revolved in the water, and was able to distinguish the sound made by a German U-boat from that of one of the British underwater craft.

HYDROSTATICS. Branch of physical science which deals with the equilibrium of fluids under the application of forces. A fluid at rest exerts pressure at right angles to any surface in contact with it, and this pressure is exercised equally in all directions. Any increase of pressure at one point of a fluid, in

equilibrium, is at once transmitted without diminution to every other point of the fluid. In the case of a fluid at rest under gravity, the pressure steadily increases with the depth below the surface, this being due to the weight of supported fluid. See Hydraulics; Hydrokinetics.

HYDROZOA. Class of the zoological phylum Coelenterata (q.v.). They are commonly known as polyps, are in most cases marine, and usually of small size. While some swim freely, the majority are attached in adult life to rocks, shells, and plants. In their simplest form the body consists of a bag with a single opening, usually surrounded with tentacles that assist in the capture of the minute organisms on which the animal feeds.

HYÈRES. Watering place of France. It lies about 14 m. by rly. E. of Toulon and $2\frac{1}{2}$ m. from the sea. Salt is produced at the Salins d'Hyères, 5 m. E. The Îles d'Hyères, the Stoechades of the ancients, lie off the bay and the peninsula of Giens. Pop. 17,476.

HYGIEIA. In Greek mythology, the goddess of health. The reputed daughter of Asklepios (Aesculapius), she was worshipped in different parts of Greece. She is not to be confused with Athena Hygieia. In art Hygieia was represented wearing a long robe, sometimes feeding the serpent twined on the staff which was the attribute of Aesculapius (q.v.).

HYGIENE (Gr. *hygieinos*, healthy). Science of the preservation of health and the prevention of disease. Personal hygiene comprises sound dieting, sufficiency of exercise, adequate sleep, and maintenance of the bodily functions in a state of normal activity. Measures for the provision of sufficient and wholesome water supply, efficient drainage systems, adequate housing, inspection of food, prevention and arrest of epidemics, etc., are part of the general question of public health.

The London School of Hygiene was founded in 1921, and in 1924 was incorporated with the School of Tropical Medicine. Its new buildings, opened in 1929, are in Keppel Street, London, W.C.1. There is an Army School of Hygiene at Aldershot. See Public Health; Sanitation.

HYGROMETER. Instrument for measuring the amount of water vapour in the atmosphere. A common type consists of two thermometers placed side by side, the bulb of one being left dry, whilst that of the other is covered with fine muslin, kept constantly wet by a thread dipping into water. The water evaporates, and as some of the heat necessary to evaporate it is obtained from the thermometer, the temperature of the latter is lowered. Thus the wet bulb thermometer usually registers a lower temperature than the dry bulb thermometer. The difference between the two readings gives the means of obtaining the humidity of the air.

HYKSOS. Loose confederation of West Asian desert peoples which dominated Egypt between the XIIth and XVIIIth dynasties. Inaccurately called shepherd kings, they established a defensive line from Avaris, near Tanis; their camp at Tell el-Yehudiya was excavated in 1906. By their final expulsion Aahmes I, about 1580 B.C., inaugurated the new empire. See Egypt.

HYLAS. In Greek mythology, a beautiful youth beloved of Hercules, who took him with him on the expedition of the Argonauts. During the voyage Hylas landed on the coast of Mysia, and while attempting to draw water from a fountain was drawn into the depths of the water by the nymph of the fountain.

HYLLUS. In Greek mythology the eldest son of Hercules and Deianeira. He and his brothers fell in an unsuccessful expedition from Athens to regain a footing in the Peloponnese, from which they had been expelled.



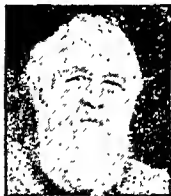
Hydro-electric Machinery. Three of the Siemens-Schuckert generators, driven by turbines below, which furnish power for the Shannon electrification scheme

HYMANS, PAUL (b. 1865) Belgian statesman. Born and educated at Brussels, he became a barrister in 1885. Five years later he was elected for Brussels to the chamber of representatives. From 1915-17 he was Belgian minister in London. Early in 1918 he became minister of foreign affairs, and represented Belgium at the Peace Conference, 1919, but in 1920 resigned his portfolio owing to cabinet disagreements regarding the Polish question, First President of the League of Nations, 1920, he was minister of foreign affairs, 1924-25, 1927-29, and again from 1929.

HYMEN or **HYMENAEUS**. In Greek mythology, the god of marriage, son of Bacchus and Aphrodite or of Apollo and one of the Muses. He was always invoked in a bridal song at marriages, the song coming to be called Hymen.

HYMENOPTERA. Large order of the insects which includes the bees, wasps, ants, etc. Insects of this order have as a rule four transparent membranous wings, of which the front pair exceed the hind pair in size. They pass through a complete metamorphosis, and the females possess an ovipositor which may be modified into a sting. In many genera there is a distinct "waist" between the thorax and the abdomen; and the mouth parts are developed into a long proboscis or sucking instrument. See Ant: Bee; Insect; Wasp.

HYNDMAN, HENRY MAYERS (1842-1921). British socialist and economist. Born in London, March 7, 1842, he became a journalist, represented The Pall Mall Gazette in the Austro-Prussian War of 1866, and was on the staff of The Melbourne Argus in 1869. He travelled widely in Australasia and in America. Becoming a convert to the revolutionary socialism of Marx, he founded the Social Democratic Federation in 1881, and the remainder of his life was



H. M. Hyndman,
British socialist
Berkshire

devoted mainly to socialist propaganda. He died Nov. 22, 1921.

HYOSCYAMINE. Alkaloid contained in henbane (*Hyoscyamus niger*), in belladonna (*Atropa belladonna*), and in stramonium (*Datura stramonium*). It is usually associated with atropine. A trace of hyoscyamine applied to the eye produces dilation of the pupil. The alkaloid is a poison.

HYPERBOLA (Gr. hyper, beyond; balkein, to throw). One of the sections of the cone. It is defined mathematically as the locus of a point which moves so that its distance from a fixed point, the focus, bears a constant ratio which is greater than unity to its distance from a fixed straight line which is called the directrix.

HYPERIDROSIS.

Excessive sweating. It occurs as a symptom of various infective diseases, and in rickets and certain nervous diseases. Treatment consists in attention to the general health and avoiding alcohol. Frequent bathing is beneficial. For localised sweating, a dusting powder containing 3 p.c. of salicylic acid may be employed with satisfactory results.

HYPERION. In Greek mythology, one of the Titans. He was the father of Helios, the sun, Selene, the moon, and Eos, goddess of the dawn. In the poets, Hyperion is often confounded with Helios. See Titan.

HYPERMETROPIA. Long sight, the condition in which parallel rays of light do not converge to a focus upon the retina, but tend

to be brought to a focus behind that membrane. The condition results from the eyeball being too short or the cornea too much flattened. It can be corrected by the use of convex glasses. See Eye; Vision.

HYPERSTHENE. Iron-magnesium silicate found with lahoradite and other basic feldspars and forming part of many eruptive rocks. It is a dark brown, crystalline rock with a submetallic lustre, and when cut and polished is used as an ornamental stone.

HYPERTROPHY. In medicine, enlargement of an organ or tissue beyond its normal size. Usually, this occurs in response to an increased demand made upon the organ or tissue, but sometimes occurs pathologically.

HYPNOTICS (Gr. hypnos, sleep). Drugs used to procure sleep. Opium, morphine, sulphonal, paraldehyde, trional, bromides, chloral and veronal are those most frequently employed. Hypnotics may be used in acute illness, and in conditions accompanied by pain, but their frequent or long-continued employment is undesirable, as there is grave risk of a habit being formed.

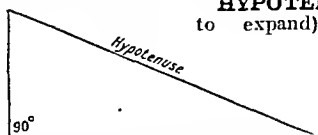
HYPNOTISM. Artificially induced state resembling sleep in some respects. Persons who are under hypnotic influence readily respond to suggestions made to them by others, and since the effect of these suggestions often remains after the hypnotic influence has been removed, advantage has been taken of the fact to treat various ailments by this means, especially those known as "functional" nervous disorders. These are conditions in which the patient, as result of a shock or ill-health, has become convinced that he is paralysed or otherwise disabled.

Suggestion under hypnotism has also been found of value in the treatment of sleeplessness, lumbago, stammering, sea-sickness, drug habits, and certain mental disturbances. Alcoholism has also been successfully treated.

HYPOCAUST (Gr. hypo, under; kaiein, to burn). Shallow heating chamber or channel beneath baths and dwelling-rooms, especially in Roman Britain. From an external furnace (hypocaustis) the hot gases, in the simplest type, passed through a channel to a wall flue, usually of box tiles. In a second type they passed to a central hollow whence branches led to flues in the sides and angles of the walls. The most frequent type was a chamber beneath the living-room, supported by rows of pillars about 30 ins. high and 18 ins. apart, often bearing mosaic pavements.

HYPOCHONDRIASIS. Term for a morbid anxiety as to the state of health. Sufferers from this affection are constantly afraid that they are afflicted with some disease or are specially prone to take some disease. Often it is a manifestation of neurasthenia.

HYPOTENUSE (Gr. hypo, under; teinein, to expand). Side of a right-angled triangle opposite the right angle. By Euclid's 47th proposition the square on the hypotenuse is equal to the sum of the squares on the other sides of the triangle.



Hypotenuse. Diagram showing the hypotenuse of a right-angled triangle, i.e. one containing an angle of ninety degrees

the pressure of the air affects the temperature at which water boils, it follows that a determination of the boiling point of water indicates precisely the atmospheric pressure. Travellers and explorers therefore use a hypsometer to check their readings of an aneroid barometer. Hypsometry is the art of measuring heights on the earth's surface, e.g. by trigonometrical survey, etc. Another method is by reading of the barometer, but this method gives an approximate result only. See Surveying.

HYRAX. Group of small ungulate mammals found in Africa, Arabia, and Syria. In appearance they are not unlike rabbits without



Hyrax. The Cape Hyrax,
Procavia capensis
F. W. Bond

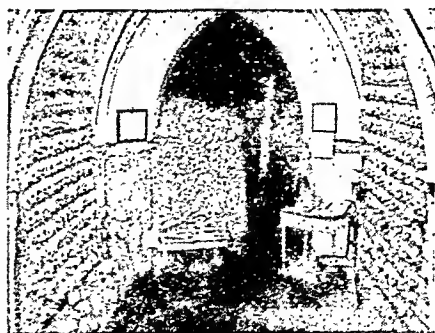
the long ears; but they belong to the hoofed group, and in spite of their small size come systematically between the horses and the elephants. They are the animals called conies in the Bible. There are about 20 species, and they live in holes and feed upon leaves and young shoots. Their toes are protected by broad nails or hoofs.

HYRCANUS I, JOHANNES (d. 105 B.C.). King of Judaea and high priest of the Jews. Son of Simon Maccabaeus, he withstood the opposition of Ptolemy, who murdered his father and his two brothers. He threw off the yoke of Syria, and, entering into an alliance with the Romans, founded the monarchy, which continued in his family until the time of Herod.

His grandson, Hyrcanus II (d. 30 B.C.), became high priest on the death of his father, and king of Judaea on the death of his mother.

HYSSOP (*Hyssopus officinalis*). Aromatic evergreen shrub of the order Labiatae. A native of the Mediterranean region, it has elliptic or lance-shaped leaves, and bluish-purple flowers in whorls; it was formerly used in medicine as a carminative. The hyssop of Scripture has been identified as the eaper plant (*Capparis spinosa*).

HYSTERIA. Condition in which some of the functions of the body are disordered as a result of abnormal ideas not resulting from organic disease of the brain. Hysteria most frequently develops in persons who are somewhat unstable in mind or are exceptionally emotional. The immediate cause may be a psychological shock, such as fright, disappointment in love, or losses in business. In other cases the condition arises from a physical shock such as a fall, or an explosion in the immediate neighbourhood, the last cause being responsible for a large number of cases of hysteria among soldiers during the Great War, and forming one group of cases sometimes termed shell-shock.



Hythe. Crypt beneath the parish church containing the skulls of thousands of men who are supposed to have fallen in battle many centuries ago

HYTHE. Borough and watering place of Kent, one of the Cinque Ports. It is 67 m. from London and 4 m. from Folkestone, and is served by the Southern Rly. Under the raised chancel of S. Leonard's church is a vault with a collection of human skulls and bones. Hythe's importance as a port declined as the harbour became blocked by sand. In 1854 a school of musketry, now known as the school of small arms, was established here. Pop. 7,764.

I. Ninth letter and third vowel of the English and Latin alphabets. It has two sounds, long, as in mine, which is really a diphthong; and short, as in pin. The combination *ia* represents *ya*, as in Christian, or short *i*, as in marriage. *le* represents *long e*, as in brief; the diphthongal *i*, as in pie; short *i*, as in sieve; or short *e*, as in friend. The endings *-sion*, *-tion*, have a sound midway between *-shon* and *-shun*, unless *s* precedes, when *t* keeps its normal sound, as in question. See Alphabet; Phonetics.

IACCHUS (Gr. *Iakchos*). In Greek mythology, a mystic deity who played an important part in the Eleusinia. Later, he was confused with the younger Dionysus, the son of Zeus and Demeter. See Bacchus.

IAMBIC VERSE (Gr. *iaptein*, to assail). Lines containing a number of feet, each of which is an iambus or foot of two syllables, the first unaccented or short, the second accented or long. Iambic hexameter is the form of Greek tragedy. Iambic verse is peculiarly adapted to the English language.

IANTHINA (Gr. *ianthinos*, violet-coloured). Genus of marine gastropodous molluscs. With thin violet shells, they float on the surface of the sea. They inhabit the warmer seas; but the shells of four species have been found on the coast of Cornwall.

IAPETUS. In Greek mythology, one of the Titans. When this race of giants had been defeated by Zeus, Iapetus was imprisoned in Tartarus.

Iapetus is the name of the eighth moon of Saturn counting outwards from the planet. Discovered in 1671 by J. D. Cassini, it fluctuates considerably in brightness. See Saturn.

IBERIA. Name given by the Greeks to the S.W. peninsula of Europe, called by the Romans Hispania. It is still referred to as the Iberian peninsula. The name Iberia was also borne by the region between the Caucasus on the N. and Armenia on the S., corresponding to the modern Georgia.

Iberian Mountains is the name sometimes given to the mts. of central and E. Spain, particularly the ranges which include the Sierra de Guadamarra and those S. of the Ebro. The westernmost portion of the Mediterranean, between Spain on the N., and Morocco and Algeria on the S., is sometimes called the Iberian Sea. See Spain.

IBEX. Group of wild goats including some four species, all distinguished by fine upstanding, curved horns. The Alpine ibex (*Capra ibex*), almost extinct in the wild state, has horns over 40 ins. long. The Asiatic ibex (*C. siberica*) is brown to white in colour, and sometimes has horns over 50 ins. long. The Arabian ibex is yellowish brown, with dark markings. The Abyssinian ibex is much darker, and has black horns with a curious prominence on the forehead.

IBIS. Group of wading birds, nearly related to the storks, but distinguished by their very long, curved beaks. Numerous species are found in the warm countries of both hemispheres. The Egyptian ibis (*I. aethiopica*) is now rare in Lower Egypt, but common from the Upper Nile to the Cape. Its mummified remains are often

found in ruined temples. The glossy ibis (*I. falcinellus*) breeds in S. Europe, and is occasionally found in Great Britain.

IBRAHIM PASHA (1789-1848). Egyptian soldier. Born at Kavala, in Thrace, he was adopted by Mehemet Ali, who had estab-



Ibrahim Pasha, Egyptian soldier

lished himself as a virtually independent ruler in Egypt. Brought up as a soldier, Ibrahim subjugated the Wahabis in Arabia, 1816-18. In the campaign against the rebelling Greeks, 1824-28, he captured Navarino, Tripolizza, and Missolonghi, 1826. When Mehemet decided to annex Syria in 1831, Ibrahim captured Gaza and Acre and overran the country. In 1832 the Powers stepped in, and a treaty was signed by which Mehemet received Syria. Ibrahim was appointed governor, but in 1838 Turkey renewed the war. After his victory of Nezib, June 24, 1839, the Powers again intervened, and he evacuated Syria in Feb., 1841. He died at Cairo, Nov. 10, 1848. See Mehemet Ali; Syria.

IBSEN, HENRIK (1828-1906). Norwegian dramatist and poet. Born March 20, 1828, at Skien in S. Norway, in 1849 he began to publish sentimental poems and caustic epigrams, and in 1850 his first play, *Catiline*, was printed. In 1857 Ibsen became director of the new National Theatre in Christiania. Here he produced his first really successful play, *The Warriors in Helgeland*, 1858. His *Love's Comedy*, the first work in which his gift of bitter satire was conspicuous, made him unpopular, and hastened the threatening bankruptcy of the theatre. With allowances granted by the university and by the Norwegian Government he was able to travel, and he lived abroad until 1891, when he returned to Christiania. He died May 23, 1906.



Henrik Ibsen, Norwegian dramatist

Ibsen's dramatic poems, *Brand*, 1866, and *Peer Gynt*, 1867, had established his position as a writer of genius. Of his most famous plays, *Emperor and Galilean* came first in 1873; then *Pillars of Society*, 1877; *A Doll's House*, 1879; *Ghosts*, 1881; *An Enemy of the People*, 1882; *The Wild Duck*, 1884; *Rosmersholm*, 1886; *The Lady from the Sea*, 1888; *Hedda Gabler*, 1890; *The Master Builder*, 1892; *Little Eyolf*, 1894; *John Gabriel Borkman*, 1896; and *When We Dead Awaken*, 1900.

IBSTOCK. District of Leicestershire. It is 14 m. from Loughborough, on the L.M.S. Rly. which serves also the village of Heather. The chief industries are the making of bricks and tiles. Pop. 5,211.

ICARUS. In Greek mythology, son of Daedalus. While accompanying his father in his flight from Crete, he was drowned near Samos in the sea called after him Icarian. See Daedalus.

ICE. Water in the solid state. Water in the pure state freezes at 0° C. or 32° F., at ordinary atmospheric pressure, into a crystalline solid. Water expands as its temperature is lowered below 4° C., with the result that ice is lighter than water. Impurities mixed with water have the effect of lowering the freezing point, sea-water freezing between -2.5° and -3.0° C. Ice, in melting, absorbs more heat than any other solid. Large quantities of natural ice are harvested and stored in icehouses for distribution when required. On a still larger scale artificial ice is produced for the preservation of food, etc.

Ice action is a term used for the wearing away or alteration of the shape of land, rocks, etc., by the action of ice. An icebreaker is a ship designed to force its way through ice-bound waters or seas. In some cases such vessels act as train ferries; in others they clear a passage and keep it open for other ships. See Freezing Point; Refrigeration.

ICE AGE. The earlier part of the existing geological period, the Pleistocene. It is called the Great Ice Age because various countries were then overwhelmed by ice caps or ice sheets, while the glaciers on the equatorial mountains were more extensive, and those in the subtropical regions descended to 10,000 ft. below their present limit. Ice covered large areas of north-western Europe, Canada, and the northern United States, and as it melted the included earth and stones were spread out in vast sheets of irregular deposits, which were known as the "diluvial drifts," until L. Agassiz recognized them as laid down by ice. Glacial deposits cover most of the British Isles N. of a line from the Thames to the lower Severn. Ice from Scandinavia spread S. into Germany, while the glaciers of the Alps and Pyrenees were more extensive than at present. Small glaciers existed as far S. in Europe as the Balkans. Extensive glaciers also occurred in Tasmania.

Man was contemporary with at least the later glaciations, his remains being found in England and France with the mammoth and reindeer in beds earlier than the last glacial deposits. Ice ages at very early periods of the earth's history have been proved in the Cambrian in Central China, also in the Carboniferous in S. Africa, S. America, Australia, and Central India. See Geology; Glacier.

ICEBERG. Mass of land ice which has broken away from a glacier or ice-sheet. When a glacier or ice-sheet reaches the sea, the ice is buoyed up by the water, or cut by wave motion, causing masses to break off. Only about one-ninth of an iceberg is above the water. Arctic bergs have been seen 300 ft. high, that is, 2,400 ft. below water. Ice

pack is the term used for small masses of sea ice or broken fragments of icebergs driven together by wind or currents. They form a more or less compact barrier to navigation in Polar regions. Greenland ice-sheets and glaciers form most of the Atlantic icebergs. See Antarctica; Arctic Ocean.

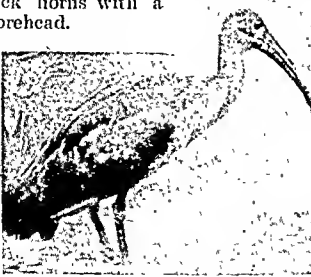
ICE CREAM. Flavoured frozen compound of cream, sugar, and eggs. To make ice, a freezing machine is needed, which in its simplest form consists of a pewter or zinc vessel of a capacity varying from 2 quarts to 40 quarts, and a wooden tub into which crushed ice and salt, or other freezing mixture, is placed. The ice-cream ingredients are put into the pewter vessel, and this is pushed into the freezing mixture.



Iceberg. Wave grooves on an overturned North Atlantic iceberg



Ibex. Specimen of the Grecian variety of the wild goat W. S. Berridge, F.Z.S.



Ibis. Hadadab ibis of Central Africa

ICELAND (Dan. Island) Island in the N. Atlantic Ocean, under the same sovereignty as Denmark. It lies between lat 63° 23' N. and the Arctic Circle, about 200 m. S.E. of Greenland. The capital is Reykjavik. Its area is about 40,500 sq. m. Pop. 100,000.

The island is a mountainous plateau of volcanic rocks. The lowlands, only about one-fifteenth of the total area, are chiefly in the S. and S.W. The coasts, except on the S., are high, rugged, and deeply indented by long fiords. The heights of the plateau are covered by snowfields or jökulls. The numerous rivers are unnavigable but are great sources of water power. Volcanic activity is considerable. The most famous volcanoes are Hekla (Hecula) and the crater of Askja in Dyngjufjöll. The best known of the many hot springs is the Great Geyser.

The principal occupations are sheep and cattle farming. The coastal fisheries, particularly cod, have always been important. There are some whaling stations. The minerals comprise lignite, sulphur, and Iceland spar. No rlys. have yet been built. There is a good system of telegraphs and telephones. External communications are direct with Norway, Denmark, Scotland, and the U.S.A. Exports are mainly fish, animals, butter and other dairy products, wool, and hides.

Iceland is a constitutional monarchy. The executive is vested in the king, acting on the advice of three responsible ministers. The legislative body is the Althing, composed of an upper house of 14 and a lower house of 28 members. The thousandth anniversary of this parliament was celebrated in June, 1930.

A republic founded in 1930 lasted till 1263, when Iceland acknowledged the rule of Norway, but retained its own form of government. Together with Norway, Iceland came under Danish rule in 1381, but when, by the treaty of Jan. 14, 1814, Norway was separated from Denmark, Iceland continued under the sovereignty of the king of Denmark.

By the Act of Union of 1918, Iceland became a free sovereign state united with Denmark only in having the same sovereign. Denmark takes charge of Iceland's foreign

ICELAND SPAR. Transparent, colourless variety of calcite, found in Iceland. It has a strong double refractive power and is consequently used



Iceland. 1. Washing clothes and making coffee at hot springs. 2. Bridal head-dress

glory is departed from Israel." **ICH DIEN** (Ger. I serve). Motto of the prince of Wales. It was erroneously said to have been adopted by the Black Prince, together with the three white ostrich plumes, from John, king of Bohemia, who fell at the battle of Crécy, fighting for France.

ICHNEUMON FLY.

Large group of hymenopterous insects. Most of them are minute, and the majority are in their larval stage parasitic on caterpillars. The adult insect bores through the skin of the caterpillar with her ovipositor and so introduces the egg. When this hatches out, the larva feeds on the tissues of its host. In some species the ichneumon larvae emerge from their host and pupate outside, while in others they pupate within the cocoon spun by the caterpillar, or in the chrysalis.

ICHTHYOPHAGI (Gr. fish-eaters). Primitive coast-peoples reputed by ancient geographers to subsist on sea-food. Alexander the Great's admiral Nearchus described those of the Gedrosian coast—the Baluchistan Makran—as giving fish to their domestic animals also, and occupying whalebone and conch-shell dwellings.

ICHTHYORNIS. Extinct toothed bird. It was a strong flying bird, about a foot in height, possessing a row of reptile teeth in each jaw. A sea-bird, it fed on fish and nested on the shore.

ICHTHYOSAURUS. Genus of extinct fishlike reptiles found in the Rhaetic, Jurassic, and Cretaceous strata in Europe, America, Africa, and Australia. The reptile was from 4 to 40 ft. long, and had a round and tapering body and a large head with long jaws armed with a number of sharp, conical teeth. The neck was short, the limbs like flappers or fins, and the tail a vertical fin. See Brontosaurus; Dinosaur; Fossil.

ICKNIELD WAX. Early English name for a prehistoric track from near Wantage to Dunstable. Following the Berkshire Downs and Chilterns, it may have continued N.E., crossing Ermine Street (q.v.) near Royston,

and thence to Caistor. It ranked as one of Edward the Confessor's four royal roads.

ICON or **IKON** (Gr. eikōn, image, likeness). In the Greek or Orthodox Eastern Church, a representation, in the form of painting, low-relief sculpture, or mosaic, of some sacred personage. Excepting the face and hands, the whole is often covered with a metal plaque embossed so as to represent the figure and drapery. Until recently icons were venerated by the Russian peasants, who generally carried them in the shape of folding tablets.

ICONOCLAST (Gr. eikonoklastai, image-breakers). Name applied to an opponent of the use of images and pictures in religious worship. As early as the 2nd century protests were made against a practice which appeared dangerous in view of the idolatry with which the Church was surrounded. In the 8th century the rise of a party of iconoclasts in Eastern Europe started a prolonged controversy. The emperors issued edicts forbidding the veneration of pictures or images, while the popes inclined in the opposite direction. By the year 842 the iconoclasts were completely defeated.

The name iconoclasts has also been given to the Puritan party in the 16th and 17th centuries who endeavoured to destroy every kind of pictorial or sculptural adornment in churches. See Idolatry: Image Worship.

IDA. Mountain range of Asia Minor. Called by the Turks Kaz Dag, this name was given in classical times to a range which stretched from Phrygia through Mysia into the Troad. See Crete.

IDAHO. North-western state of the U.S.A. Its area, 83,888 sq. m., comprises a tableland with a mean elevation of 4,500 ft., and many snow-capped peaks of over 12,000 ft. Lying within the Rocky Mountain region, many outlying ranges cover the N.E. section, while the S. presents a vast lava plain. The Snake river bisects the state in the S., and turns N. to form part of the western boundary.

Agriculture owes much to irrigation; good crops of wheat, oats, and barley are obtained. Sheep and other live-stock are raised, and dairying is increasing. Idaho produces lead, gold, silver, copper, and zinc. Boise is the capital. Pop. 546,000. Pron. Ida-hō.

IDDESLEIGH, STAFFORD HENRY NORTHCOTE, 1st EARL OF (1818-87). British politician. Born in London, Oct. 27, 1818, of an old Devonshire family, he succeeded in 1851 to the family baronetcy and estates, and in 1855 entered the House of Commons as M.P. for Dudley. In 1866 he was made president of the board of trade in the Conservative Cabinet, and the next year secretary for India. In 1874 Northcote became chancellor of the exchequer, and in 1876, on Disraeli's transfer to the Lords, he succeeded him as leader of the Commons. In 1885 he was made an earl and became first lord of the treasury, and he was foreign secretary in 1886. He died suddenly in Downing Street, Jan. 12, 1887.

Iddesleigh's eldest son, Stafford Northcote, Walter Stafford (1845-1927), succeeded to the titles. A younger son, Stafford Henry (1846-1911), was governor-general of Australia, 1903-8. He was created Baron Northcote in 1900.

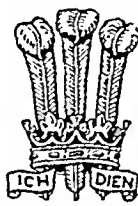
IDENTIFICATION. Term used in English law. Identification is often a matter of legal importance. The finger print system



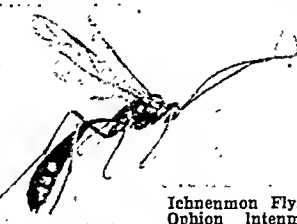
Iceland. Map of the North Atlantic island, which is a sovereign state under the king of Denmark

affairs, and there is provision for an advisory Dano-Icelandic committee to consider legislation of importance to both states. After 1940 the legislatures of either state may demand the revision of the Act of Union.

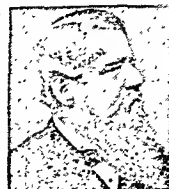
ICELAND MOSS (Cetraria islandica). Native lichen of the mountainous regions of Europe, Asia, and N. America. Growing erect upon the ground, it is a thick ribbon of brown colour. In Arctic regions it is used as food. It is also of value as a dye-stuff.



Ich Dien, Prince of Wales's crest and motto



Ichneumon Fly, Ophion Internm



Stafford Northcote, 1st Earl of Idesleigh

has eliminated some of the risks of mistake. Identity can be established not only by swearing to the face, but to any physical peculiarity, to the voice, or even the clothes of the person to be identified. It is, however, always a question of fact; and no one ought to be convicted of a crime unless evidence of identity is so strong as to leave no reasonable doubt. See Finger Print.

An identity disk is a token worn by soldiers on active service. The commonest form in the Great War was a little piece of light metal on which were stamped the soldier's name, number, unit, and religion. Attached to a cord, it was officially worn round the neck under the tunic, and frequently round the wrist. In 1916 two identity disks, a green and a red, were supplied to British officers and men. The first disk was issued with 6 in. of cord attached, the red disk was fastened to the green disk by the string attached to it, both being worn round the neck by a cord. In the event of death the green disk was buried with the body. Where a body could be reached and identified, but not brought back for burial, the red disk was sent home.

IDES (Lat. *idure*, to divide). In the Roman calendar, the name of the 13th day of the month, except in March, May, July and Oct., when the Ides fell on the 15th. See Calendar; Calends.

IDIOCY or **IDIOCY**. Condition of extreme feeble-mindedness present at birth or in very early childhood. The cause may be pre-natal, one or both parents having suffered from insanity, epilepsy, alcoholism, or syphilis. Sometimes the condition follows infantile convulsions. See Lunacy.

IDLE. River of Nottinghamshire. Formed by the junction of the Maun and the Modon, it flows from Sherwood forest to the Trent at W. Stockwith, Notts. Its length is about 40 m.

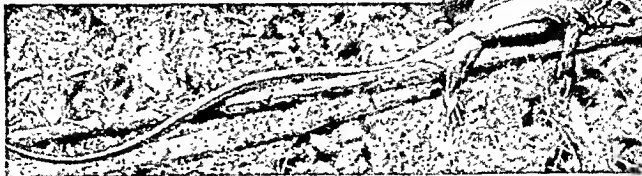
The district of Bradford, Yorkshire, known as Idle stands on the river Aire, 3 m. from the centre of the city, and has a station on the L.N.E.Rly. It was included in Bradford in 1899. See Bradford.

IDOLATRY (Gr. *eidōlon*, idol; *latreia*, worship). Literally the worship of idols. In Judaism, Christianity, and Islamism the word implies the worship of any but the Supreme Being. In the history of man idolatry has a place between animism or Nature worship, ancestor worship, and belief in one true God. The idol was evolved when the first attempt was made to represent the unseen spirit by an image, and the virtues of that spirit were attributed to the representation or image. See Animal Worship; Animism; Fetishism; Iconoclast; Image Worship.

IDOMENEUS. In Greek legend, king of Crete and grandson of Minos. Caught in a storm on the return journey after the Trojan War, he vowed to sacrifice to Poseidon the first thing that met him if he reached home safely. The first person to greet him on the shore of Crete was his own son, whom he was compelled to sacrifice. As a result, a plague descended upon the country, and Idomeneus was driven into exile. Pron. I-dommy-newee.

was built about 1530. It figures in Dumas' Count of Monte Cristo

IFFLEY. Village of Oxfordshire. It stands on the north side of the Thames, 2 m. from Oxford. There is a Norman church, with a



Iguana. The large S. American lizard, *Iguana tuberculata*, basking on a branch

fine doorway and west front. The picturesque mill has been burned down. Pop. 360

IGHTHAM. Village of Kent, 4½ m. from Sevenoaks. On Ightham common was a Roman camp. Ightham Mote is a manor house, dating from the 14th century, with a moat, Tudor chapel and other features. Pop. 1,596.

IGLOO. Eskimo hut. Built for temporary use in the winter season, the huts are frequently constructed of blocks of ice piled high in a dome. See Eskimo

IGNATIUS. Patriarch of Antioch and Apostolic Father. According to Eusebius, he was the second bishop of Antioch after S. Peter. About A.D. 116 he was seized during the persecution under Trajan and taken to Rome to be thrown to the lions. On the journey he wrote the important Ignatian Epistles, addressed to various churches.



Father Ignatius, Anglican preacher Elliott & Fry

IGNATIUS, FATHER (1837-1908). Anglican preacher, whose real name was Joseph Leicester Lync. Born at Barking, Nov. 23, 1837, he was ordained in 1860, and after a short time adopted the Benedictine habit and styled himself Father Ignatius. In 1870 he built Llanthony Abbey, among the mountains some miles from Abergavenny, as the home of an Anglican Benedictine order. He won a great if temporary fame as a preacher. He died Oct. 16, 1908.

IGNEOUS ROCKS. Rocks which have been formed from certain materials once in a molten condition. They are usually subdivided into three classes, (1) lavas which have been poured out from volcanoes to form sheets on the surface, effusive rocks; (2) those which have been formed by molten material being forced into veins, fissures, etc., beneath masses of other rock, intrusive rocks; and (3) those rocks which have been solidified under great pressure and at great depths, the plutonic rocks. Igneous rocks show a wide variation in chemical composition, but consist chiefly of silica, alumina, iron oxide, lime, magnesia, potash and soda, with small amounts of phosphorus, chlorine, sulphur, etc. See Geology.

IGNIS FATUUS. Flickering flame due to marsh gas, sometimes seen floating over marshes, and in places where there is decaying animal matter. The phenomenon is known by several other names, e.g. Will-o'-the-wisp and Jack-o'-Lantern.

IGNITER. Small charge of gunpowder placed in a cartridge, which conveys the flash from the firing tube or primer to the cordite. In Q.F. cartridges, which contain the charge in a brass case furnished with a primer, the igniter sometimes consists of a small cylinder of cordite sewn to a shalloon bag of gunpowder. In B.L. cartridges the igniter is enclosed in a silk or shalloon bag sewn into the end of the cartridge. See Cartridge.

IGUANA. Family of large lizards, found in the tropical regions of America and including about 300 species. The best known is *I. tuberculata*, about 5 ft. long, with a kind of fringe on its back and a very prominent dewlap. It is found in Central and S. America and in the W. Indies, and spends most of its time in the trees. It feeds mainly on fruits and leaves. It is quite inoffensive. See Lizard.

IGUANODON. Fossil land reptile. Belonging to the Dinosaurs, it is found in the Jurassic and lower Cretaceous rocks of Europe. It was 15 to 25 ft. long, with a small head, heavy jaws set with teeth like the modern iguana, and strong, flexible lips. The animal, an herbi-



Iguanodon. Reconstruction of this prehistoric reptile from remains found in Kent and Belgium

vorous feeder, supported itself on its two hind legs and powerful tail, its front limbs being comparatively small. See Dinosaur.



I.H.S., the Christian monogram

I.H.S. Monogram used in Christian worship from early times. Placed within a circle of rays, it is a device of the Society of Jesus. Probably it represents the first three letters of the Greek *IHCOCYC* (Jesus), with the third letter Latinised. There are variant forms of the monogram such as IC, IH, IHC, JHS.

ILCHESTER. Village of Somerset. It stands on the Yeol, 5 m. from Yeovil. The chief building is the restored church of S. Mary, and there are some 15th century almshouses and an old cross. A stone bridge connects the town with Northover, across the Yeol. It was the co. town of Somerset until early in the 19th century. Roger Bacon was born here. Pop. 449.

The title of earl of Ilchester has been borne since 1756 by the family of Fox-Strangways. In 1741 Stephen Fox (1704-76), a Dorset M.P., was made Baron Ilchester, and in 1756 was created an earl, Ilchester being the name of his Somerset estate. The earl owns the historic Holland House, (q.v.), Kensington, which came to him from his kinsman Lord Holland. His eldest son is called Lord Stavordale.

ÎLE DE FRANCE. Name given to a district in old France, the nucleus of the kingdom. It lay around Paris, and was an island in the sense that its boundaries were mainly rivers. From their home in the island the early kings enlarged their territory. Until the Revolution the Île was one of the country's provinces or governments. It is now covered by the departments of Seine, Seine-et-Oise, Seine-et-Marne, Oise, and Aisne.

Île de France is also an old name of Mauritius. See Mauritius.

The Île du Diable, or Devil's Isle, a penal settlement, where Dreyfus was imprisoned, is one of the Îles du Salut, three islands off the coast of French Guiana.



If, the Mediterranean island, and the château, once a famous prison

IF. Small island in the Gulf of the Lion, France. It is 2 m. from Marseilles, and its castle, the château d'If, long used as a prison,

ILEX. Genus of shrubs and trees of the order Aquifoliaceae. Natives of temperate and tropical regions, they have alternate, undivided leaves, often of a leathery or evergreen character, and small flowers clustered in the axils of the leaves. The common holly (q.v.) is the best known species in the old world, but in S. America *Ilex paraguayensis*, which yields maté (q.v.), is found.

ILFORD. County borough of Essex. Part of Greater London, it lies E. of the Roding, $7\frac{1}{2}$ m. from Liverpool Street on the L.N.E.Rly. There are several parks and recreation grounds. A garden suburb has developed on part of the Valentines estate. In 1928 it was decided to erect a large hospital, to be known as the King George, at Ilford. Pop 85,191.

ILFRACOMBE. Watering place, market town, and urban dist. of Devonshire. It stands on the Bristol Channel, 12 m. N.W. of Barnstaple and 225 m. from London on the South-coast and G.W. Rlys. Its chief attractions are the fine cliffs and beautiful scenery. Near the town is Capstone Hill. The chief building is the restored



Ilfracombe. Cliffs near this Devonshire town, famed for its scenery

church of Holy Trinity. The lighthouse which is situated on Lantern Hill was once the chapel of S. Nicholas. Market days, Wed. and Sat. Pop. 11,772.

ILIAD, THE. Epic poem in 24 books dealing with a phase of the tenth year of the siege of Ilion or Troy. The central incident is the wrath of the hero Achilles. Agamemnon, the leader of the hesieging Achaean host, had seized the Trojan maiden Chryseis, the daughter of a priest of Apollo. The god thereupon sent a plague, which the soothsayer Calchas declared could only be stayed by the restoration of Chryseis to her father. Agamemnon consents, but threatens to deprive Achilles of the captive maid Briseis.

Zeus inclines the scales of victory in favour of the Trojans until Hector has stormed the ramparts and Agamemnon promises atonement. Achilles remains in his tent and allows his friend Patroclus, equipped in his armour, to take his place. Patroclus is slain by Hector, whereupon Achilles enters the field again and avenges the death of his friend. The poem concludes with the ransoming of the body of Hector by his father Priam. It relates the events of 51 days only. See Achilles; Homer.

ILKESTON. Borough and market town of Derbyshire. It is 9 m. from Derby and about the same distance from Nottingham, and is served by the L.M.S. and L.N.E. Rlys. The river Erewash runs by it, as does a canal. The church of S. Mary is partly Norman. The development of the coalfield made the place a manufacturing centre. The making of hosiery and lace are other industries. Market day, Sat. Pop. 32,269.

ILKLEY. Urban district and watering place of Yorkshire (W.R.). On the Wharfe, 16 m. from Leeds and 12 m. from Bradford, it has stations on the L.M.S. and L.N.E. Rlys. There are three Saxon crosses in the churchyard of All Saints. The council has acquired Ilkley Moor, 1,560 acres of moorland. In the neighbourhood are Bolton Abbey and other places of interest. Pop. 10,000.

ILLAHUN or **ELLAHUN.** Village in the Fayum, Upper Egypt, 12 m. S.E. of Medina. In the vicinity is the pyramid built for Senusert II of the XII dynasty, as well as

the workmen's dwellings at Kahun. In the pyramid was found the gold serpent from the royal crown. A Coptic cemetery of about A.D. 600 yielded fine embroideries and stuffs.

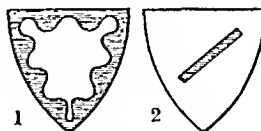
ILLAMPU or **SORATA.** Mountain of Bolivia, S. America. In the Eastern Cordillera it is 60 m. N.N.W. of La Paz, E. of Lake Titicaca. It has two summits, of which Aucuhuma reaches 21,490 ft. and Illampu 21,275 ft. The name Illampu is more usually applied to the separate summit, and Sorata to the entire mountain. See Andes; Sorata.

ILLAWARRA. District of New South Wales. It comprises the coastal strip between the mountains S. of Sydney and the Pacific, and is noted for its scenery. It is rich in coal, and is a productive dairying region. Illawarra Lake joins the sea.

ILLEGITIMACY. Condition of one born out of matrimony, i.e. hasty. By English law such children are illegitimate as are not born either in lawful wedlock or within a competent time after its determination.

In England and Wales, by the Legitimacy Act, 1926, illegitimate children are made legitimate by the subsequent marriage of the parents. This procedure had long been the law in Scotland. See Bastard; Legitimacy.

In heraldry illegitimacy may be indicated by a mark of abatement, most usual on the shield being the baton, bend, or bendler, sinister, and nebuly border. Anciently other methods were also used, e.g. the marshalling of the family arms on a bend, chevron, or other ordinary. The popular term har sinister should be properly rendered as bend sinister. See Baton; Bend.



Illegitimacy. Two means of indicating illegitimacy in heraldry. 1. Nebuly Bordure, 2. Baton

ILLIMANI. Volcanic mountain mass of the Andes. It is in Bolivia, about 26 m. S.E. of La Paz. It is 21,200 ft. high, and carries glaciers and a lake at an alt. of some 16,000 ft.

ILLINIUM or **FLORENTIUM.** Rare earth metal believed to be a missing element with the atomic number 61, between neodymium and samarium. Its discovery was announced by Harris, Hopkins, and Yntema of Illinois in 1924. Professor Rolla of Florence also claimed to have made an independent discovery of the substance, which he named Florentium. Illinium was discovered in the rare earth residue from monazite sands after the extraction of thorium and cerium.

ILLINOIS. State of the U.S.A. It lies to the S.W. of Lake Michigan, which forms part of its eastern frontier, and has an area of 56,665 sq. m. The largest rivers are the Mississippi, along the western boundary, its tributary the Illinois, and the Wabash and the Ohio on the E. and S. borders respectively. Known as the prairie state, Illinois is largely agricultural. Coal is the principal mineral, and petroleum, sandstone, limestone, and fluor-spar are worked. The rivers and the Great Lakes afford excellent transport facilities, and the rly. service comprises over 12,000 m. of steam and over 2,000 m. of electric traction. Education is provided by the Chicago, Illinois, and North-western universities and many colleges. The capital is Springfield, but Chicago is the principal city. Pop. 7,396,000. Pron. Illinoy or Illinoiz.

ILLUMINATION. Decoration of written text with coloured pictures or designs. Painted hooks were the immediate precursors of printed books. They were works of art, and being portable, their preservation was easy. Their vogue lasted from the 9th to the 16th century, though some, e.g. the celebrated version of

the Gospels produced at Kells, now in Trinity College, Dublin, were written and ornamented some centuries earlier. The illuminators were either professional artists or scholarly monks who had made a special study of miniature painting and decoration. The MSS. most commonly illuminated were Bibles, Gospels, Psalters, Missals, Breviaries, Books of Hours and manuals of devotion, and, less generally, Bestiaries, certain of the Latin and Italian classics, and works of a religious and theological character.

ILLUSTRATION. In art, the pictorial elucidation of the printed word by diagrams, and more specifically its ornamentation by explanatory, interpretative, or complementary drawings or photographs.

The embellishment of manuscripts with designs and pictures wrought by hand belongs properly to the art of illumination (q.v.). Books containing illustrations, engraved on copper and wood, have existed from the 15th century, but for practical purposes the art may be divided into three periods: (1) the copper and steel plate period, middle of the 18th to the middle of the 19th century; (2) the woodcut period, the whole of the 19th century; and (3) the process period—half-tone and line or facsimile—which, beginning towards the end of the 19th century, became peculiarly the product of the 20th.

Steel plates were costliest. They were printed on thick plate paper, and were the special features of various literary Annuals such as *Forget-Me-Not* (1822-44). Wood engravings were cheaper; they could be printed with the letterpress as an integral part of the book on ordinary paper, and by taking one or more electrotypes of them and printing from these, the original wood block was preserved unimpaired. The publication of illustrated periodicals, such as *Punch*, *The Illustrated London News*, and *The Graphic*, of pictorial Bibles, histories of England, Shakespeares, and other classics would have been impossible but for woodcuts. They were eliminated by "process," the amazing cheapness of which was irresistible. See Drawing; Engraving; Half-tone; Woodcut.

ILLYRIA or **ILLYRICUM.** Term used in ancient times for the country on the Adriatic coast N. of Epirus, extending as far as the river Dravus (Drave), and bounded E. by Macedonia and Upper Moesia. It included roughly the modern Montenegro, Bosnia, Herzegovina, Dalmatia, and S.W. Hungary. The country was annexed by the Romans in 168, and in A.D. 9 the province of Illyricum was established.

In 476 Illyricum became part of the Eastern empire. In the 7th century it was occupied by Slavonic invaders, and the name disappears from history until in 1816 the Austrians revived the name, and until 1849 Illyria was one of the constituent states of the Austrian empire. See Italy.

ILMENITE. Rock-forming mineral found in grains and crystals of certain igneous rocks. It contains iron and titanium, the variable proportions giving rise to many varieties of the mineral. Brown to black, with a semi-metallic lustre, it is highly refractory, and is used for lining furnaces.

ILMINSTER. Urban dist. and market town of Somerset. On the G.W. Rly., 5 m. from Chard, it has a fine church and a grammar school. In the church are buried Nicholas and Dorothy Wadham, founders of Wadham College, Oxford. Market day, Wed. Pop. 2,367.

ILORIN or **ILLORIN.** Town of Nigeria. It is 243 m. from Lagos and 541 m. from Kano, and is a great trading centre, with manufactures of leather, pottery, and shoes. It was founded at the close of the 18th century, and became the capital of one of the Yoruba kingdoms. Pop. about 70,000.

IMAGE WORSHIP.

Adoration of statues or pictures of sacred persons or things. In the O.T., where idol worship is condemned, are many references to sculptured, graven, and molten images of clay, wood, silver, and gold. In the Christian Church the use of images grew with the development of art, and their veneration led to the rise of the iconoclasts in the 8th-9th centuries. In medieval times sacred images were often associated with miracle working.

At the Reformation, while Lutherans were comparatively indifferent on the subject so long as the images themselves were not worshipped, the Calvinists and Puritans rejected them entirely. The Roman Church forbids absolute, but permits relative homage to representations of Christ, the Virgin, and the saints. The Greek Church permits the use of the icon and of pictures. Islamism rejects all representations of living things. See Emblem; Iconoclast; Idolatry.

IMAGO.

Adult or perfect stage of an insect after it has passed the larval and pupal stages. It is generally distinguished by the possession of wings, and as a rule does not grow. Many insects do not eat in this stage, their one business then being the propagation of the species. See Insect.

IMAM OR **IMAM** (Arab. leader, president).

Mahomedan title. Among other applications, it was given to certain Mahomedan princes in the early period, e.g. the caliphs, and survives in modern times, e.g. the imam of Muscat. In modern usage the name specially indicates the minister who officiates in the mosques at public prayers.

IMARI. Name of a Japanese ware. It is a mixture of white clay and ground felspathic rock, forming a fine stoneware or porcelain.

Imari. Bowl of Japanese ware with painted design

chiefly on Korean and Chinese specimens.

IMBROS OR **IMBRO.**

Island of the Aegean Sea, near the entrance to the Dardanelles. It is about 100 sq. m. in extent. The chief town is Kastron, or Castro. Formerly Turkish, it passed to Greece in 1920. The island produces cereals, fruit, and silk. After the British evacuated Gallipoli, Dec., 1915, they used it as a military base. Pop about 10,000.

IMMACULATE CONCEPTION.

Doctrine of the Roman Catholic Church declaring that the Blessed Virgin Mary was preserved from all stain of original sin. Originating in the 6th century and a constant subject of controversy since the 12th century, the idea became an article of faith in the Roman Catholic Church on Dec. 8, 1854, when Pius IX issued a bull, *Ineffabilis Deus*, in its favour. The feast of this name was inserted in the calendar of the Catholic Church in the first half of the 14th century. See Incarnation.

IMMANUEL OR **EMMANUEL** (Heb. God is with us).

Hebrew proper name. It was the name or title of a child whose birth Isaiah (7, 14) predicted as a sign from heaven that God would preserve Judah from destruction at the hands of its foes. In Matthew (1, 23) the prophecy is applied to Christ as the Messiah and Saviour of His people.

IMMELMANN, Max (1890-1916).

German airman. Born at Dresden, Sept. 21, 1890, he was a medical student before joining the air force. In the early part of the Great War he was one of the most successful fighters on

the western front, his method being to rise to great heights and then swoop down on his opponent. He also invented the aerial manoeuvre called the Immelmann turn.



Lieut. Immelmann, German airman

IMMIGRATION (Lat. in, into; migrare, to move).

Entrance of people into another country for the purpose of settlement. In 1921 the senate of the U.S.A. passed an Immigration Restriction Act limiting the number of aliens to be admitted to the United States during the year beginning April 1 to a maximum of 355,000, divided among the various nationalities, and this restrictive policy has been maintained. See Alien; Emigration.

IMMINGHAM. Seaport of Lincolnshire.

It is 7 m. N.W. of Grimsby on the L.N.E. Rly. It was a fishing village until the 20th century, when the rly. company decided to construct extensive docks here. These were opened in 1912. Pop 2,150.

IMMORTALITY (Lat. in, not; mortalis, subject to death).

Condition of being exempt from death. Belief in life after death has been almost universal, though its character has varied greatly. It is first seen in Egyptian religion, where the other life is a replica of this. In Babylonia and Assyria resurrection of the body preceded true immortality. To the early Greeks Hades represented the abode of the dead. In the Christian Church immortality is the reward of the believer, the orthodox conception including the resurrection of the body, transformed and glorified. See Heaven; Purgatory; Survival.

IMMUNITY (Lat. immunis, exempt).

Bacteriological and pathological term signifying the resisting power which exists in all living creatures to hostile agencies. It is applied especially to resistance to disease, and may be natural or acquired. Natural immunity is a product of evolution. Acquired immunity may be the result of a recovery from an attack of the disease in question; or it may be conferred artificially by means of vaccination processes or inoculation, or injection of a serum. See Bacteriology; Disease.

IMPALING (Lat. in, on; palus, stake).

In heraldry, a method of marshalling two or more coats of arms on one shield, the arms being placed side by side. See Heraldry.

IMPEACHMENT (Fr. empêchement, from late Lat. impedicare, to fetter the feet).

In English law parliamentary prosecution by the House of Commons, before the House of Lords as judges, of a person accused of treason or any other crime or misdemeanour.

The actual procedure follows the lines of an ordinary trial, the defendant being permitted to employ counsel and call witnesses. At the conclusion the president, who is either the lord high steward or the lord chancellor, calls upon each peer individually to declare upon his honour whether the defendant is guilty or not guilty. In the event of the defendant being found guilty the Lords pronounce judgement only if the Commons demand it, the latter thus reserving the power of pardon to themselves.

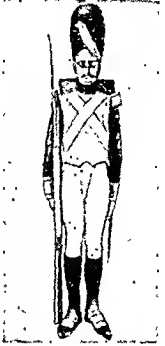
IMPERIAL CONFERENCE.

Meeting of representatives of the various parts of the British Empire. In 1887 representatives of the self-governing Colonies, present in London at the jubilee of Queen Victoria, met together in conference, and from this the Imperial Conference sprang. One is now held every four years. The prime minister is president, with the secretary of state for dominion affairs as

chairman in his absence. The other members are the premiers and other ministers of Canada, Australia, New Zealand, S. Africa, Newfoundland, S. Rhodesia, the president of the Irish Free State, and the secretary of state for India.

IMPERIAL GUARD.

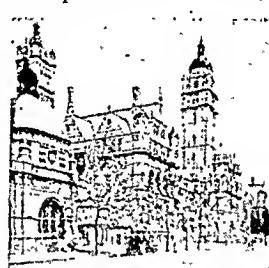
Name of a French military corps. It grew out of the corps of guides used by Napoleon in Italy and Egypt and took its name when he became emperor in 1804. The guard took part in many of the campaigns; in 1814 its strength was about 100,000 and it was divided into the Old and the Young Guard. It was restored by Napoleon III in 1861, but did not survive the fall of the empire in 1870.



Imperial Guard of Napoleon III

IMPERIAL INSTITUTE.

Building erected in S. Kensington, London, to commemorate the jubilee of Queen Victoria's reign, the name being also used for the society which has its headquarters therein. The structure, which is in the Renaissance style, was opened in 1893. The object was to assist



Imperial Institute, S. Kensington. The main façade and tower

the development of the resources of the empire by arranging exhibitions of its natural products and raw materials, and disseminating information about them. In 1900 the building became the property of the Government.

IMPERIALISM.

Term derived from the Latin imperium, meaning originally military authority, and then empire. It is applied in modern times to the belief in the expansion and development of an empire, and came into general use in the latter part of the 19th century to describe the policy of those who adopted this creed with regard to the British Empire. Prominent imperialists have been Lord Beaconsfield, Lord Rosebery, and Joseph Chamberlain. See British Empire.

IMPERIAL SERVICE ORDER.

Meritorious and long service decoration for members of the civil service. Instituted by Edward VII in 1902, and extended in 1909,



Imperial Service Order, ribbon and star

the companionage is confined to 700 members of the clerical and administrative branches, this number including 250 for home civil service, 250 for civil servants of colonies and protectorates, and 200 (100 Europeans and 100 natives) for the Indian civil service.

The badge for men is a silver star whereon is a gold medallion bearing the royal and imperial cipher in blue within a circlet inscribed "for faithful service." For women the plaque is surrounded by a wreath of laurel in place of the star. Ribbon, a stripe of blue between two of crimson of equal width, the woman's worn as a bow.

IMPEY, SIR ELIJAH (1732-1809).

British lawyer. Born at Hammersmith, June 13, 1732, he became recorder of Basingstoke, 1766.

and counsel to the East India Company in 1772, and was appointed chief justice to the new supreme court of Calcutta, 1774. The fall of Hastings involved Impey, against whom charges of corruption were brought. He defended himself successfully before the House of Commons but resigned his post. M.P. for New Romney, 1789-96, he died Oct. 1, 1809. See Hastings, Warren.

Imphal. Another name for the Indian town better known as Manipur (q.v.).

IMPORTS. Name given to the goods taken into a country, the opposite of exports. These are valued at the custom house or by other authorities, and all civilized countries issue periodical returns showing the nature and values. In the United Kingdom this is done monthly by the Board of Trade.

The following figures show Great Britain's imports in 1913 and from 1925 to 1929:

1913	£ 768,734,000
1925	1,320,715,000
1926	1,241,361,000
1927	1,218,341,000
1928	1,196,940,000
1929	1,221,000,000

The difference between a country's imports and its exports is known as its balance of trade, but to strike an accurate balance certain considerations must be remembered. For instance, imports are valued at prices which include the cost of carriage on shipboard, whereas exports are valued at prices which do not. See Balance of Trade; Exports.

IMPOTENCE (Lat. impotentia, incapacity). Term applied in law and medicine to inability to have sexual relations. Principal causes of impotence in males are: extremes of age; constitutional disease; particularly locomotor ataxia and other affections of the spinal cord; injury or disease of the organs of generation; and psychical influences, associated with neurasthenia or hysteria. Impotence is a ground for a suit for nullity of marriage.

IMPREGNABLE. Former naval establishment at Devonport. It consisted of four ships, namely: Impregnable No. 1, late the cruiser Powerful of 14,200 tons; Impregnable No. 2, late the cruiser Andromeda of 11,000 tons; Impregnable No. 3, late the cruiser Emerald of 9,200 tons; and Impregnable No. 4, late the light cruiser Powerful III. These four vessels formed a training establishment for boys entering the British navy.

IMPRESSIONISM. Name given to a movement in art originating with a group of French painters in the last quarter of the 19th century. Its central principle is that the hand should paint what the eye sees before it. All conventions of lighting and composition are ruled out by this formula; only the object in nature, as it appears behind its veil of atmosphere, must be set down.

It was the work of Claude Monet that brought the term Impressionist into use. In 1874 an exhibition of open-air pictures was held by Monet and his friends in the Boulevard des Capucines, Paris, which included one by him with the title *Impression: soleil levant*. Monet's associates and disciples included A. Renoir, C. Pissarro, Berthe Morisot, Mary Cassatt, and Charles Sisley. Whistler was Impressionistic in his later etchings and his nocturnes; Cézanne, Gauguin, and Van Gogh groped after Impressionist ideals before they were absorbed by Post-Impressionism (q.v.). In 1889 an English group, including Wilson Steer, Walter Sickert, and Francis Bate, held the first Impressionist exhibition in London. Sir Hugh Lane formed a valuable collection of the French group for the modern gallery, Dublin. See Art.

IMPRISONMENT. In law, any act whereby another's liberty of movement is forcibly interfered with. Apart from those who are

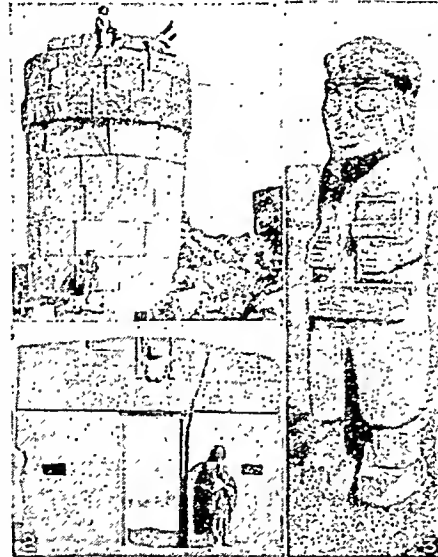
confined waiting trial, those suffering imprisonment may be divided into two general classes: (a) those imprisoned with hard labour; (b) those undergoing simple imprisonment, i.e. without hard labour.

Offenders who are found guilty of more serious offences are sentenced to penal servitude, which technically does not rank as imprisonment. In this the maximum sentence is 15 years, except in the case of reprieved murderers, who receive a life sentence, which in practice rarely exceeds 20 years. See Hard Labour; Penal Servitude.

IMPROVEMENT. Legal term used in connexion with land. By various statutes, a tenant for life of settled land had power to make certain improvements, e.g. drainage, irrigation, road-making, and to recoup himself by selling any of the settled land, or out of the funds of the settlement.

Improvements of land by tenants are provided for by various Agricultural Holdings Acts. The intentions of these Acts, in this respect, is that when a tenant improves the holding he shall, on the expiration of his tenancy, have the benefit of his expenditure.

The Landlord and Tenant Act of 1927 provided for the payment of compensation for improvements and goodwill to the tenants of business premises. See Landlord.



Inca civilization. Remains at Tiahuanaco, Bolivia. 1. A chullpa, more probably a habitation than a tomb. 2. Gate of the Sun. 3. Monolith idol at the south-west corner of the palace of Kala-sosai.

INCA. Name of ancient rulers of Peru. The Incas were an hereditary reigning dynasty which flourished for over 300 years under a series of chiefs or emperors. Of this dynasty, Manco Capac was the founder (c. 1240), and Atahualpa, murdered in 1533 by the Spaniards, the last. The Inca empire covered a wide area, extending from Quito southwards into N. Chile, and from the Pacific coast westward to beyond the Andes, a region over 2,000 m. long and 500 m. wide. It was governed from Cuzco, the capital.

The most noteworthy of the remains at Cuzco is the fortress of Sacsaihuaman, consisting of a series of walls 1,800 ft. long, forming terraces up the hill-side, and having 20 salients. In the same region is the fortress of Ollantaytambo, and the ruins of Intihuatana and Pisac, amid which latter still stands a portion of the stone column by which the Inca priests determined the solstices. Other numerous remains of fortresses, towers, palaces, sun temples, habitations, etc., are scattered about the uplands.

The Incas were skilful agriculturists. Their social and economic laws were remarkably complete and equitable. The land was apportioned to the needs of the people and the state; taxes were paid in manufactured goods, whose production was regulated: destitution did not exist, and colonisation was systematically carried out. Gold was mined and used only for the decoration of temples, or for the royal utensils. The Incas were sun-worshippers, but their religion embodied a belief in the Unknown God, who was creator and pervaded all. There were no human sacrifices. See Cuzco; Peru; consult also The Incas of Peru, C. R. Markham, 1915; Peru, C. R. Enock, 1915; The Incas and their Industries, H. van den Bergh, 1921.

INCARNATION. Fundamental belief of the Christian religion. The doctrine of the Incarnation affirms that in the person of Jesus of Nazareth God was made man that man might know God. To-day theologians emphasise first that, alike in the N.T. and in the main stream of Christian theology, the complete humanity of Jesus is affirmed. He was perfect man, and usually spoke of Himself as the Son of man. Though Jesus did not, until His trial, publicly claim to be more than this, it is certain that He privately admitted that He was the Christ.

But, if the conclusions of modern scholars can be trusted, Jesus did not explicitly make greater claims for Himself. The relation to God of the Christ was worked out by His followers, who gradually came to see that He was the Incarnation of God. See Jesus Christ.

INCARVILLEA. Small genus of perennial herbs of the order Bignoniaceae. Natives of China and Turkistan, they have opposite, divided leaves, and large, tubular flowers of rosy or scarlet colour. *I. olgae* (Turkistan) is frequently grown in European gardens.

INCE-IN-MAKERFIELD. Urban dist. of Lancashire. It adjoins Wigan, and has a station on the L.M.S. Rly. There are wagon works, cotton mills, and collieries. Pop. 22,865.

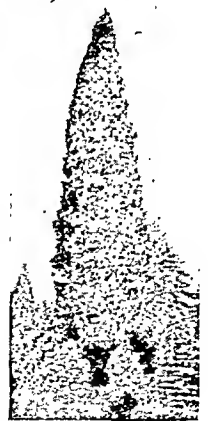
Another Ince is in Cheshire, 7 m. from Chester, with a station, Ince and Elton, on the L.M.S. Rly. It has an old manor house, which is now a farmhouse.

INCENSE. In religious ceremonial, an aromatic mixture burnt over live charcoal in a thurible or censer. As an accessory to public worship it was unknown in the early Church, its liturgical use dating from the 5th or the 6th century. In a mystical or symbolical sense it is held to typify zeal, virtue, and prayer; and at funerals, the communion of saints.

INCENSE CEDAR.

Genus of evergreen trees of the natural order Coniferae. Natives of Asia, Australasia, and America, they have small, scale-like, overlapping leaves and oval cones consisting of four or six flattish scales. Some of the species yield valuable timber. One that grows in Patagonia produces timber so straight and even-grained that it gives spars and boards of great length and splits so cleanly that the pieces appear to have been planed.

INCH (Lat. uncia, a twelfth part). Measure of length. It is the twelfth part of a linear foot. The British halfpenny coin is one inch in diameter.



Incense Cedar, a tree valuable for its timber

INCHBALD, ELIZABETH (1753-1821). English actress, playwright, and novelist. Born near Bury St. Edmunds, Suffolk, Oct. 15, 1753, she married an actor, Joseph Inchbald, in 1772. She acted for a time on the stage, wrote and adapted many plays and farces, and is chiefly remembered as the writer of *A Simple Story*, 1791, and *Naturo and Art*, 1796, often reprinted. She died in London, Aug. 1, 1821.



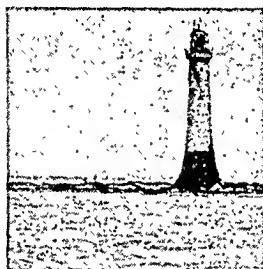
Elizabeth Inchbald, English actress and writer
After Russell

INCHCAPE, JAMES LYLE MACKAY, 1st EARL OF (b. 1852). British merchant. Born at Arbroath, Sept. 11, 1852, he became partner in a firm of merchants at Calcutta, Bombay, and elsewhere. In 1891 he became a member of the viceroy's legislative council, and from 1907-11 he was a member of the Council of India. Having settled in England, Mackay, who had been knighted in 1894, became eminent in the banking and shipping world. He was made a baron in 1911, a viscount in 1924, and an earl in 1929. He gave £500,000 in 1928 towards the National Debt, that sum having been the portion of his daughter Elsie, lost in an attempt to fly the Atlantic, 1928.



Earl of Inchcape, British merchant
Elliott & Fry

INCHCAPE ROCK. Reef off the coast of Scotland, known also as the Bell Rock. Some 12 m. S.E. of Arbroath (Aberbrothock), at the mouth of the



Inchcape Rock. The reef and lighthouse in the Firth of Tay
Valentine

Firth of Tay, it is 500 yds. long and 100 yds. wide. A lighthouse was built here in 1807. In former days a bell tolled by wave action warned the mariner; it is the subject of a ballad by Robert Southey.

INCLINOMETER. Word used in three senses. (1) Scientific instrument for measuring the vertical intensity of the earth's magnetic force as indicated by the dip of a magnetic needle. (2) Type of theodolite fitted with an adjustable base to facilitate the measurement of angles of inclination. (3) Any instrument constructed for measuring the degree of inclination or slope.

INCOME TAX. In Great Britain an income tax was first imposed in 1799, when all incomes exceeding £60 were taxed. In 1816 the exemption limit was reduced to £50, but this was restricted to earned incomes. From 1842 to 1920 the limit varied between £160 and £120, except for 20 years when £100 was the limit. Until 1907 there was only one rate of tax, small incomes being relieved by abatements.

In 1907 earned incomes not exceeding £2,000 a year were taxed at a lower rate than the normal. In 1909 the differentiation was extended and a super tax on larger incomes was introduced. To meet the cost of the war the ordinary rate of income tax was greatly increased, rising at one time to 6s. in the £. In 1920, in accordance with the suggestions made by a royal commission, the system was remodelled. A later reform was the abolition of the system of assessing incomes on the average of the past three years.

The total income having been ascertained, the tax due in the case of any individual is calculated by the following rules. The aggregate income is reduced by one-sixth of the earned portion of that income, this reduction not to exceed £250 in the case of any individual. In the case of taxpayers over 65 years of age with incomes of £500 and under, all income, whether earned or unearned, is subject to the one-sixth deduction. From the assessable income thus arrived at, the following deductions may be claimed:

A personal allowance of £225 in the case of a taxpayer whose wife lives with him, and £135 in any other case. In the case of a married man whose wife has earned income of her own a further allowance equal to five-sixths of the first £50 of the wife's earned income is granted. An allowance for children of £60 for one and £50 each for others, provided that the children are either under 16 or over 16 and receiving full-time instruction at an educational establishment. Adopted children and stepchildren are within the allowance, but no deduction can be claimed in respect of a child having income in his or her own right exceeding £40 a year. Other allowances are made for dependent relatives, and the taxpayer is allowed a certain relief on money paid for insurance premiums.

The amount remaining after all these deductions have been made is the taxable income. On the first £250 of this a lower rate is charged. At one time this was half the standard rate, but in 1930 it was left at 2s., although the standard rate was raised to 4s. 6d. In 1931 therefore a taxpayer pays 2s. in the £ on the first £250 of his taxable income and 4s. 6d. on the remainder.

There are reciprocal arrangements with the Irish Free State, Australia, S. Africa, and other parts of the Empire to lessen the burden of a double income tax.

Australia, Canada, S. Africa, India, and the Irish Free State have each an income tax, modelled more or less on that of Great Britain. The idea in all is a graduated scale, relieving the smaller incomes, wholly or in part, and putting more upon the larger ones. Super tax, or surtax, is usually treated as distinct from the income tax, although really it is but an additional income tax.

The tax is payable in two instalments, one on Jan. 1 and the other on July 1. It is collected by the Board of Inland Revenue, which has inspectors and collectors all over the country. If dissatisfied with his assessment a taxpayer can appeal to the special Commissioners of Income Tax at York House, Kingsway, London, W.C.2, or to other commissioners, and from them, but only on points of law, to the courts. The amount received from income tax in 1929 was £237,620,000. See Super Tax.

INCREMENT. Word meaning simply an increase. Its most frequent use is in the term unearned increment, meaning the wealth that comes to a landlord or other person through a rise in values to which his own efforts have contributed nothing.

An increment value duty was one of the three land value duties imposed in the United Kingdom by the Budget of 1909. With the other land taxes it was abolished in 1920.

INCUBATION (Lat. incubare, to sit upon or brood). Natural process by which birds stimulate by warmth from their bodies the activity of the germ in the eggs, and its continued development until the chick is ready for hatching. The process is not entirely restricted to birds, the duck-bill among mammals laying and incubating its eggs. In recent years chickens have been incubated largely by artificial means, the eggs being placed in a well-ventilated box and kept at the requisite temperature by means of

a current of warm air, or by radiation from a tank of hot water.

As a medical term, incubation indicates the interval between infection and the appearance of the symptoms of a disease.

INCUMBENT (Lat. incumbere, to rest on, remain in). One who holds an ecclesiastical benefice. Institution to a benefice involving the cure of souls is for life. An incumbent possesses a life freehold of the globe and other properties of the living, and he can prevent by legal process any other clergyman from officiating in his parish. He is ex-officio chairman of all vestry meetings, and he is responsible for the registers of baptisms, marriages, and burials. See Benefice.

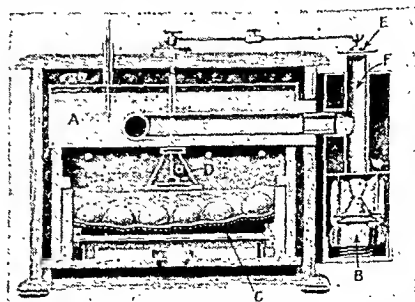
INDEFATIGABLE. British battle-cruiser. The fourth ship of the type, and the twelfth Dreadnought, she was laid down at Devonport in 1908 and completed in 1911. Her principal dimensions were: length, 555 ft.; beam, 80 ft.; displacement, 18,750 tons. She was equipped with eight 12-in. and 16 4-in. guns, two torpedo tubes, and armour whose maximum thickness on the side was 7 ins.

In the battle of Jutland, May 31, 1916, she was destroyed by a shell which burst inside a turret and sent a spurt of flame down the ammunition hoist into the magazine. Five ships in the British navy had previously borne this name.

INDEMNITY (Lat. in, not; damnum, loss). Legally, an undertaking to make good monetary or other loss or damage. Contracts to indemnify persons against possible loss are frequently made in business circles, fire insurance policies being of this nature. An Act of Indemnity is an Act passed to relieve persons who have unwittingly broken the law from the penalties incurred. A war indemnity is the money paid by a country after the conclusion of a war to its victorious opponent or opponents, ostensibly for the damage done. See Reparations; Versailles. Treaty of.

INDENTURE. Term of English law. Formerly, when a deed was entered into between two parties it was written in duplicate upon one piece of parchment, and then the two parts were severed so as to leave an indented or wavy edge, forging being thus rendered difficult. The practice has long since ceased, but still a deed made between two or more parties always begins with the words "this indenture."

INDEPENDENCE. DECLARATION OF. Solemn act and deed by which under date July 4, 1776, the representatives of the 13 original United States, in general congress assembled, repudiated all allegiance to the British Crown and declared themselves free and independent states. The 13 signatory states were Massachusetts, Georgia, N. Carolina, S. Carolina, Maryland, Virginia, Pennsylvania, Delaware, New York, New



Incubator for hatching hens' eggs. A, water tank, heated by lamp, B. C, egg tray with, beneath, water tray to keep air moist. D, thermostatic capsule, which expands at a prearranged temperature and, by means of a rod and lever, raises damper, E, from chimney F, permitting hot air to escape. When temperature drops, capsule contracts and lowers damper
Courtesy of Spratts Patent, Ltd.

Jersey, New Hampshire, Rhode Island, and Connecticut. The date, July 4, has ever since been commemorated as Independence Day. It is a legal holiday, and the reading of the declaration often forms part of the ceremonies.

INDEPENDENT LABOUR PARTY. British labour organization. It was inaugurated at Bradford, Jan. 13, 1893, to make the trade unions of Britain a distinct organization for securing direct parliamentary representation. Its leader was J. Keir Hardie (q.v.). Its early power and influence were not maintained, and after 1914 the British Labour party became politically the central socialist body for Great Britain. The official organ of the I.L.P. is *The New Leader*. The offices are 14, Great George Street, London, S.W. 1.

INDEPENDENTS. Name given to a religious body in Britain and America, now better known as Congregationalists. They arose in the time of Elizabeth as protesters against the interference of the state in matters of church government. Independent churches existed all over the country, but in the 19th century a movement for union sprang up. See Congregationalism.

INDEX (Lat.) List, digest, or analytical analysis of a book. It should be systematically alphabetical and bring together all the items on a kindred subject mentioned in the book to which it is attached. The art of indexing is of comparatively modern growth. The initial fault to be avoided is the use of A, An, and The. Next comes the inclusion of unimportant words. Other pitfalls are repetition, the misu of cross-references, the placing of persons referred to under their Christian names, or the opening words of their titles, and the introduction of classification instead of adherence to complete alphabetisation. When the work to be indexed is in several volumes, each volume should be indicated by small Roman numerals the page in Arabic figures. For the index that is always growing a card system is the best.

INDEX NUMBER. Number found by making a certain selection of commodities in general use, ascertaining the current price of a certain quantity of a particular quality of each, and taking the total, or the average of all these prices. This is the datum number. At periodic intervals similar totals or averages are compiled and compared with this; the differences are generally represented as percentages on the datum number, and these percentages represent the price movements.

These index numbers are Sauerbeck's, published in *The Statist*, the monthly Economist numbers, and the Government numbers originally compiled by the Board of Trade, but now calculated by the Ministry of Labour and published monthly in *The Labour Gazette*. The bonus scheme in the Civil Service is based on the rise or fall in the index figure.

INDIA. India is that Asiatic continent which is hemmed in by the Himalaya and Suleiman Arabian Sea and the Bay of Bengal. It can be entered only through the mountain wall or from the sea. Its area of over 1,800,000 sq. m. and population of over 300,000,000 are both nearly the same as those of Europe excluding Russia but including Great Britain.

India has two principal divisions, the southern inverted triangle with the Narbada as its base, called the Deccan, and the northern, Hindustan, with the two great river basins of the Ganges and the Indus, with their tributaries. Its peoples are as diverse though less defined in their distribution than those of Europe, successive floods of invaders having poured through the passes of the north-west, some to establish themselves permanently as lords of the conquered peoples by force either of arms or of superior attainments, some to be absorbed, leaving no trace as a separate group. The extent of this sub-continent, as it is often called, is defined by the above-named geographical boundaries, which make it difficult of access to the rest of the world; but at no time have its peoples been homogeneous, and at no time before the 19th century did they have a political or national unity in the European sense.

section of the
the girdled by the
mountains, the

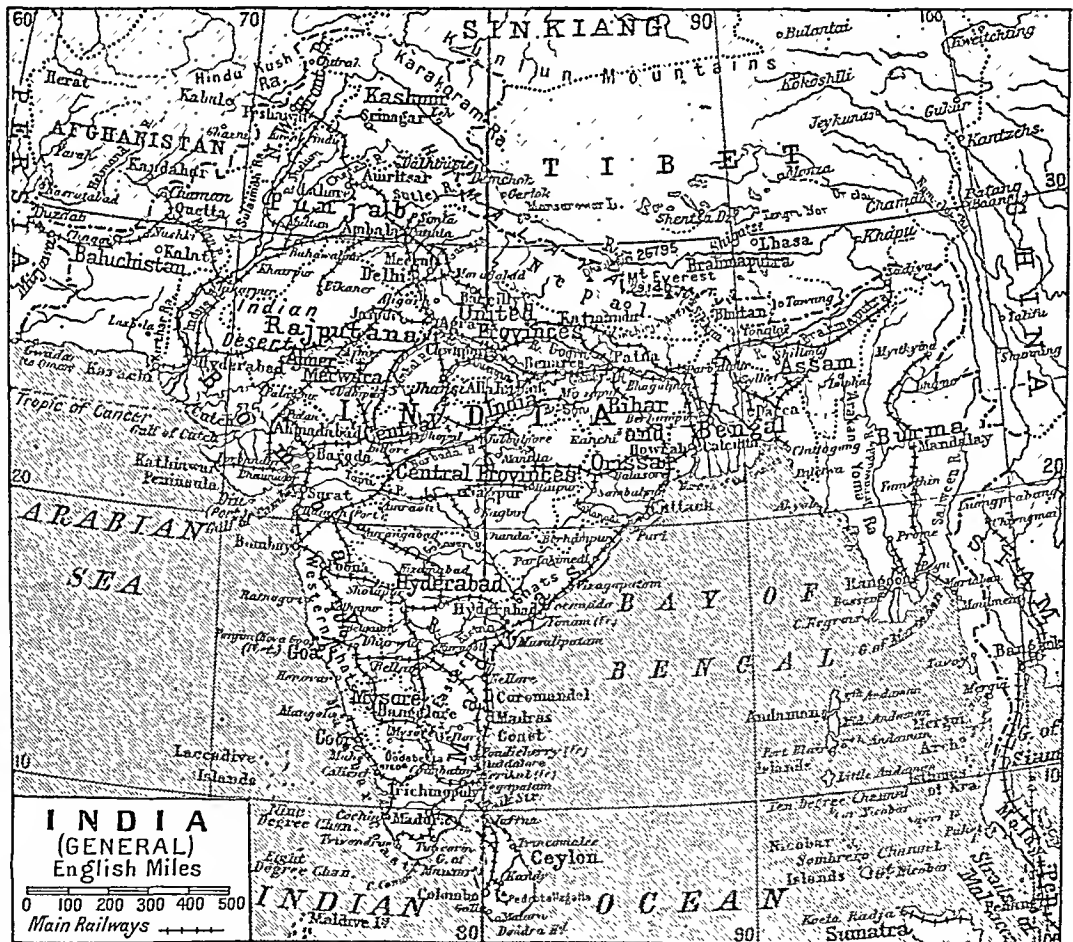


India. Arms of the Empire

problem of government there is unique, the process which brought India into the Empire having been unique. Peoples who for thousands of years had known no rule save that of Oriental despotisms, generally of aliens, continue to be ruled under what is in effect an alien, but not an oriental despotism, which is nevertheless endeavouring to assimilate the governmental system by degrees to that of western democracy; a process unprecedented in the history of political evolution.

One third of the area and one fourth of the population are ruled by despotic dynasties of pre-British standing, with powers limited only by specific treaties made in the past, whereby the imperial government retains control of all foreign and inter-state relations; with other reserve powers rarely requiring to be exercised.

The bulk of the country forms British India proper, under the direct administration of the British viceroy and council, subordinate British provincial governors with councils, and the officials of the statutory public services. In these the highest posts have hitherto been reserved for Europeans, while the multitudinous lower-grade posts are filled exclusively by Indians, and Indians are being admitted in increasing numbers both to the councils, from which they were long excluded, and to the higher administrative posts. In the Indian army proper the rank and file are all Indians, while the officers are Europeans. The immediate problem agitating the Indian



India. Map of the Indian Empire, showing the boundaries of the several provinces and the railway system of the country

The whole of India, however, is in the 20th century a unity in that it does form one entirely distinctive section of the British Empire; governed by wholly different methods from any other part thereof, because the

Empire is, how the capacity for self-government may be so developed in British India that India as a whole may acquire within the Empire the same dominion status as the other self-governing Dominions united within that

Empire or Commonwealth, without detriment to her own or the Empire's prosperity.

HISTORY. The explanation of this land of paradox lies in its history. Its primitive population is classified as partly negroid,

about the middle of the 19th century all India had been absorbed into the British Empire, partly as British India as above explained, partly under its protected princes. In 1857 the peace was broken by the

INDIAN ART. Indian art was indigenous. It may have been influenced to some degree by Babylonian or Assyrian art, but the theory that it was of Greek origin is no longer tenable. It is not concerned with the real or the temporal, but with the spiritual and the eternal, being purely idealistic and symbolic. Its golden age lasted from the reign of Asoka, about 223 B.C., to the Mahomedan conquest in 1001. Art raised its head again after the Mongols had overthrown Arab rule, and under the Mogul emperors the famous school of miniaturists flourished.

As regards architecture, this became absorbed by that of the Mahomedan invaders after the Arab conquest of India; but before this it was alternately Brahminical and Buddhist. The first Brahminical period dates from the beginning of civilized life in the country and extends to the 3rd century B.C.; the Buddhist period, lasting till the 7th century A.D., followed it, and was succeeded by a later Brahminical period. The ancient architecture of India also includes certain Persian and Greek elements, but their evidence is visible in the sculpture rather than the actual building, the latter being illogical and fantastic, though richly adorned. The grotto temples excavated in the rocky sides of

mountains are the most imposing monuments. See ill. under Agra; Allahabad; Amritsar; Aurangabad; Benares; Bijapur; Calcutta; Cave Temple; Delhi; Gwalior; Hyderabad; Jaipur; Lahore; Lucknow; Madras; Madura; Mahabalipur; Mandalay; Rangoon; Sanchi; Trichinopoly; Udaipur.

INDIA, COUNCIL OF. Body concerned with the government of India. It consists of from ten to twelve members, chosen for five years, their duties being to advise the secretary of state for India. Most of them are persons who have held high positions in India; since 1907 two have been natives. The secretary for India is the president of the council, which meets in London. This council must be distinguished from that of the governor-general of India, which is composed of high officials in India and meets at Delhi or Simla.

INDIA, ORDERS OF. Three orders of knighthood. The most exalted order of the Star of India was instituted in 1861, mainly with the object of honouring native princes. It has four grades. The collar is composed of lotuses, roses—white within red—and palm branches, in saltire, linked by a chain. The badge is an oval with a bust of the crowned queen, surrounded by a light-blue circlet, inscribed Heaven's Light our Guide, and surmounted by a star of five points. The ribbon is sky-blue with a narrow white stripe near the edge.

The most eminent order of the Indian Empire was instituted in 1878 by Queen Victoria to reward services in India. Its constitution was revised in 1911. There are three grades. The collar is figured of elephants, peacocks in their pride, and lotuses, linked together by chains. The badge is a red rose with green leaves and thereon a bust of the crowned queen, within a circlet inscribed Imperatrix auspiciis. The ribbon is purple.

The imperial order of the Crown of India was instituted by Queen Victoria for ladies in 1878, the object being to mark her assumption of the imperial title. The badge is the imperial and royal cyphers in diamonds within a circlet of pearls. The ribbon is of light blue edged with white; it is worn as a bow.

INDIA HOUSE. Building in Aldwych, London, W.C. It was opened in 1930 to serve as headquarters of the high commissioner and other representatives of India in Britain. Sir Herbert Baker, A.R.A., was the architect.



Indian types. 1. High caste Brahmin, wearing the sacred thread. 2. Kol girl workers on a rice plantation, Mysore. 3. Brass worker in a bazaar. 4. Sikh. 5. Silversmith of Madras. 6. Typical Yogi, or Hindu ascetic. 7. Bengali woman.

partly Mongolian. Between 3000 and 1500 B.C. successive tides of fair peoples calling themselves Aryan poured through the N.W. passes, established their supremacy over all Hindustan, and penetrated the Deccan. Those of them who more or less preserved their racial purity became the ruling and priestly castes and established the Hindu religion; of which variants sprang up, notably Buddhism, which for a short time enjoyed a supreme position.

From time to time came other conquerors or invaders, who either retired after a time or were absorbed; till about 1000 A.D. began a series of Mahomedan raids which developed into the conquest of Hindustan. The conquerors were Afghans or Turks, of quite different race, intensely hostile to the idolatry of Hinduism; who did not blend with the conquered Hindus but ruled them as oppressive masters. The last of these established the Mogul dynasty in the 16th century. For a time the Mahomedan oppression was relaxed. The Moguls brought the whole land under nominal submission; but when the oppression was renewed there was resistance on the part of Hindu peoples, and in the eighteenth century the Mogul empire was broken up into great provinces, which were virtually independent kingdoms, though they pretended to recognize the Mogul's sovereignty.

Meanwhile English and French traders arriving by sea had rented trade stations on or near the coast. They began to take sides, in opposition to each other, in the rivalries of the Indian princes. After 15 years of fighting the British had driven the French out of the field; but they found that their intervention forced upon them the responsibility for maintaining law and order—under formal authority from the Mogul—as governors in two great provinces. Then the British government in England felt bound to share that responsibility, lest it should be misused.

The new power was viewed with natural jealousy—or was appealed to for protection—by one after another of the princes, who were constantly fighting wars of aggression among themselves; there was no other restraining authority; the British were repeatedly challenged by one or another, the resulting wars necessitating large annexations and alternative treaties of protection recognizing the paramount British authority. Hence by

Indian Mutiny. Between Jan. and May there were isolated mutinies, and on May 10 a group of regiments at Meerut murdered their officers and marched on Delhi, where the restoration of the Mogul empire was proclaimed. The British were besieged in Cawnpore, where they were massacred, and in Lucknow, which was relieved. Delhi was taken in Sept., and with the arrival of fresh troops the mutiny was suppressed. The loyalty of many of the princes and people helped to this end.

In 1858 the E India Co. was ended and the control of India formally transferred to the crown. A secretary of state was appointed for India, and the imperial system was completed when Victoria was proclaimed empress of India on Jan. 1, 1877. The two most prominent problems between 1858 and the Great War were the gradual admission of natives to political and administrative positions and the frontier policy, with its war with Afghanistan (1879-80) and various punitive expeditions. In 1884 a collision between Russian and Afghan troops at Pendjeh threatened a war with Russia.

In 1909 substantial representation on the provincial councils was given to the natives, and in 1912 it was announced that a new capital would be built at Delhi. This was completed in 1929. In the Great War Indian soldiers rendered splendid service, especially in the eastern theatres, and the aid of the princes was most valuable.

The new order in India began with the declaration of 1917. The aim of British policy was "to provide for the increasing association of Indians in every branch of the administration and the gradual development of self-governing institutions." In 1919, by the Government of India Act, the existing system was established, and in 1921 the new legislatures were opened. In 1919 there were disturbances at Amritsar and elsewhere, and, especially in 1922 and 1930, the activities of Gandhi and his followers caused much uneasiness. These outbreaks, together with much political unrest, did not deter the British Government from its declared policy, and in 1927 a royal commission under Sir John Simon was appointed to review the whole problem of India's future. The report appeared in two parts in 1930, the first portion taking the form of an exhaustive statement on the country's position.

INDIANA. East-central state of the U.S.A. It lies S. of Lake Michigan, and covers 36,354 sq. m. The surface is mainly an undulating plain. In the hills along the Ohio valley is the remarkable Wyandotte Cave. The greater portion of the state is drained by the Wabash, which forms part of the W. boundary, and its affluents, and by the Ohio, the natural S. frontier. Agriculture is the staple industry, the crops including maize, wheat, hay, rye, tobacco, and tomatoes. There are large coal areas and petroleum and natural gas resources. The state is governed by a general assembly consisting of a senate and a house of representatives. The state university is at Bloomington. The capital of the state is Indianapolis. Pop. 3,176,000.

INDIANAPOLIS. Capital of Indiana, U.S.A. On White river, it is 110 m. N.W. of Cincinnati, and is the terminus of several rlys. Indianapolis is one of the best planned cities of the United States, with broad, tree-lined streets and an excellent system of parks. Most of the public buildings are constructed of limestone quarried in the state. The capitol of the state is surmounted by a domed tower 240 ft. high. Other buildings are the Federal building, the city hall, Tomlinson Hall, the Propylaeum, and the public library. The state university consists of the Indiana Law School, the Indiana Dental School, and Butler University. A feature of the city is the Soldiers' and Sailors' Monument, commemorating its part in the wars of the Union. Slaughtering and meat packing and the making of automobiles are important interests, and the city is a distributing centre, chiefly for livestock, grain, and meats. Pop. 358,819.

INDIAN BEAN OR CATALPA (*Catalpa bignonioides*). Tree of the order Bignoniaceae. A native of N. America, it has large heart-shaped leaves in whorls of three. The bell-shaped flowers are white, spotted with yellow and purple, and borne in large, pyramidal clusters of a hundred or more. The seed capsule is long, suggesting a bean-pod, and contains many seeds with fringed wings.

INDIAN CIVIL SERVICE. The higher posts in this service are recruited by open competition held every August. Natives of India are eligible; the limits of age are between 21 and 24. Successful candidates spend a year at a university, receiving £300-£350 to defray the cost. They are then examined in Indian law and history and a native language, and in riding. The Civil Service Commission, Burlington Gardens, London, W.C., controls the examination. The initial salary is 7,200 rupees a year—say £720. In the administrative branch the prospects extend to the control of a province, and in the judicial to a judgeship in the Indian High Court. Service for 25 years ensures a pension of at least £1,000 a year.

INDIAN CRESS

(*Tropaeolum*). Genus of annual and perennial twining herbs of the order Geraniaceae, natives of S. America. The handsome, irregular flowers end backwards in a long, nectar-containing spur. The few large seeds are each separately enclosed in a thick, ultimately spongy rind. The favourite nasturtiums of gardens are *T. majus* and *T. minus*, and the canary creeper is *T. peregrinum*. The green fruits of the first two are used as substitutes for capers.



Indian Cress. Leaves and flowers of the nasturtium

INDIAN CUP (*Sarracenia purpurea*). Perennial herb of the order Sarraceniaceae, native of N. American hogs. The leaf-stalks are hollowed out to form



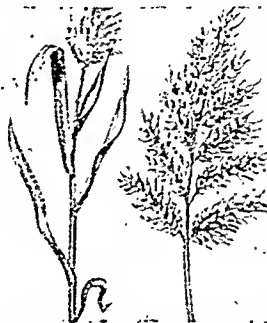
Indian Cnp. Hollowed leaf-stalks in which insects are trapped

erect, trumpet-shaped pitchers, and the real leaf forms an arching, but never closed, lid. Within the mouth of the pitcher a sweet fluid is excreted, below that is a band of polished surface, and lower still a fringe of downward pointing hairs. Insects enter to sip the sweet fluid, and, venturing farther, lose their foothold on the polished surface and fall into the lower part of the pitcher, which is filled with a clear fluid. The proteids dissolved out of these victims are absorbed by the plant. The large, solitary purple flower is borne on a tall leafless stalk.

INDIAN INK. Specially prepared form of black ink. It is also called China ink, in which form it is sold in cakes or sticks and moistened with water. The chief constituent is lamp-black mixed with a thin glue.

INDIAN MILLET (*Sorghum vulgare*). Grass of the order Gramineae, native of Asia. It has long flat leaves, and a much-branched panicle of flowers. The large, round and hard seeds when ground yield an excellent white flour, which, in the warmer parts of Europe and in Asia, takes the place of the oats and barley of colder regions.

INDIAN MULBERRY (*Morinda*). Genus of shrubs and trees of the order Rubiaceae, natives of tropical Asia and Australasia. The roots and bark are used for dyeing red and crimson. The small berries are edible.



Indian Millet. Left, stalk and leaves; right, flower-head

INDIAN OCEAN. One of the great oceans of the world. With an area of over 28,000,000 sq. m. and an average depth of over 2,000 fathoms, it separates Africa on the W. from the E. Indies and Australia on the E., and is bounded N. by Asia. S. a large area of less than 2,000 fathoms in depth helps to mark a distinction from the South Seas. The deepest sounding, in the Sunda Trench, near Java, is 3,828 fathoms. The most important of its islands are Madagascar and Ceylon. The E. part of the ocean is remarkable for its vast unbroken expanses of water. Among important submarine cables are those from Suez to Aden and Bombay, from Madras to Singapore, and from Seychelles to Zanzibar and Mauritius. See Monsoon; Ocean.

INDIAN SUMMER. Name given in the U.S.A. to periods of summer-like weather occurring during autumn. In England similar weather is known as S. Martin's summer. See Meteorology.

INDIA OFFICE. Department of the British government under the secretary of state for India, responsible for the government of India. The secretary is assisted by a parliamentary and a permanent under-secretary and by a council which meets in London, and is in constant communication

with the governor-general in India. The salaries and expenses of this department, formerly paid from India, are now paid by the British govt. The office is in Whitehall, London.

INDIA RUBBER PLANT (*Ficus elastica*)

Large evergreen tree of the order Urticaceae.

It is a native of the East Indies, with glossy, oblong, leathery leaves, and is the source of Bengal rubber. It is cultivated in a young condition as a decorative perennial for the warm greenhouse and as a table plant. Its product is much inferior in quality to that of Hevea (Para rubber) and other plants. See Rubber.



India Rubber Plant. Greenhouse specimen of the E. Indian tree

INDICTMENT (late Lat. *indictare*, to point out). English law term for a written statement showing the crime of which a prisoner is charged. The document is prepared by, or under the direction of, the clerk of indictments of the court, and is laid before the grand jury, together with the evidence for the prosecution. If the grand jury should find that the evidence discloses a *prima facie* case against the accused, they endorse the indictment with the words "true bill"; and the prisoner must then stand his trial. If the grand jury think there is no case at all, they write the word *ignoramus* (we do not know), and the bill is ignored.

INDIES. Name applied originally to certain regions of the East, India, Burma, Malay Archipelago, etc. It appears in such titles as the East Indies and West Indies. The extension of the term to the latter is due to the belief of early explorers that these islands formed part of the Asiatic group. See East Indies; India; West Indies.

Indigestion. Condition of being unable to digest food. The word is popularly applied to the complaint known as dyspepsia (q.v.).

INDIGO (*Indigofera tinctoria*). Subshrubby perennial of the order Leguminosae, native of the E. Indies. The long leaves are divided into oval leaflets. The red pea-like flowers are succeeded by long, narrow pods. The blue colouring matter obtained from the plant has been used as a dye from the earliest times, although in Europe the native woad was long preferred. The dye has been largely superseded by synthetic indigo.



Indigo, leaves and flowers

INDIUM. Rare elementary metal, discovered by spectrum analysis in 1863 by Reich and Richter in the zinc-blende of Freiberg, Silesia. Chemical symbol, In; atomic weight 114.8; atomic number 49; specific gravity 7.42; melting point 176°C. It is a white metal, malleable, softer than lead, and resistant to atmospheric influences at normal temperature.

INDO-CHINA, FRENCH. Group of states in Asia belonging to France. It consists

of the colony of Cochin China, the protectorates of Cambodia (including the territory around Battambang, ceded by Siam in 1907), Tong-king, Annam, and Laos, and Kanchow Wan, leased from China in 1900. The seat of government is at Hanoi, and the whole is under a governor-general. Minerals include coal, phosphates, zinc, antimony, and tin. The chief export is rice, followed by hides, coal, rubber, fish, pepper, zinc, and tin ore. There are about 1,500 m. of rly. track. The area is about 285,000 sq. m. Pop. 20,700,000, of whom 33,000 are Europeans. See Annam; Cambodia; Cochin China; Tong-king.

INDOMITABLE. British battle cruiser. One of the Invincible class, she was completed in 1908. She had a displacement of 17,250 tons and a speed of 27 knots, and was armed with eight 12-in. and sixteen 4-in. guns. In the Great War she took part in the battles of the Dogger Bank, Jan. 24, 1915, and Jutland, May 31, 1916. See Invincible.

INDORE. State and city of India, in the Central India Agency. The area of the state is 9,519 sq. m. Only about one-fifth is under cultivation, grain and cotton being among the chief crops. The ruler is a maharaja, with a salute of 19 guns. Indore, the capital, is an important trading centre. Pop., state, 1,147,896; town, 93,091.

INDUCTANCE. In electricity, the capacity of a conductor for electromagnetic induction. A current flowing through a straight wire sets up a magnetic field with lines of force in concentric circles around the conductor. If the wire is twisted into a close coil the magnetic field of each turn interlinks with those of adjacent turns, and the inductance is greatly increased. The inductance of a particular coil depends upon its length and the manner in which it is wound. The term is also used to mean a coil which possesses inductance.

The armature and field coils of a motor or a dynamo are inductances. Specially wound inductance coils are used to tune or adjust the aerial circuit of broadcast receiving apparatus. The variometer (q.v.) is a variable inductance. The unit of inductance is the henry, equivalent to an induced E.M.F. of 1 volt when the current in the conductor is changing at the rate of 1 ampere per second. Subdivisions are the millihenry—one-thousandth—and the microhenry—one-millionth of a henry respectively.

INDUCTION. The production of electrification in a body by the nearness of an electrified body. It also means the magnetising of a body by proximity of a magnetised body. Electromagnetic induction is the production of an electric current in a conductor by varying the magnetic field in the vicinity of the conductor. When any electrified body is brought near an unelectrified one the latter also becomes electrified. A magnetised body has a similar effect upon other bodies in the vicinity; this is most noticeable in the case of bodies of iron, when a strong attraction is set up. See Dynamo; Electricity; Magnetism; Transformer.

INDUCTION COIL. Form of transformer for increasing the pressure of an electric current, while reducing its volume. In its simplest form, as used in telephonic apparatus, it consists of a "primary" coil of a few layers of coarse wire wound round a bundle of soft-iron wires, and itself covered with a "secondary" coil of many layers of fine wire. When current is passed through the primary coil, a magnetic field is created in the core and surrounding ether. As the lines of force cut the turns of the secondary coil an E.M.F. is induced in every turn, its intensity being proportional to the rate of cutting. The E.M.F.'s, all added together, render the

voltage in the secondary coil much higher than that of the primary, though the ampereage is proportionately lower.

If the primary current be interrupted, diminished, or reversed, the lines move inwards towards the core, the coils are cut again, and an E.M.F. is induced in the reverse direction through the secondary circuit. The one condition essential to this method of transforming electric energy is intermittency in the primary current.

INDUCTION (Lat. *inductio*, bringing in). In logic a mental operation by which it is inferred that what is known to be true in certain cases at certain times will be true in all cases at all times. Thus, from observing that ice melts or water boils at a certain temperature, it is inferred that this will always be so.

INDULGENCE (Lat. *indulgere*, to grant, make a concession). As officially defined by the Roman Catholic Church, an indulgence is a remission, granted by the Church, of the temporal punishment which often remains due to sin after its guilt has been forgiven.

Indulgences were either plenary, granted to persons absolved from all sin, or partial, granted to those who had the burden of no mortal sin upon their soul. Forgiveness of the sin was a necessary antecedent to the granting of either, which, further, was conditioned upon the performance of certain acts of charity or the recital of certain prayers. The popes reserved the right of granting plenary indulgences. Bishops could grant only partial indulgences. The system opened the way to much abuse, pardons being granted in consideration of money payment.

The methods resorted to by Archbishop Albert of Mainz and Magdeburg, commissioner for Germany for the sale of indulgences authorised by Pope Leo X when rebuilding the church of St. Peter in Rome, and by the archbishop's sub-commissioner John Tetzel, amounted to a scandal which launched the Reformation. See Purgatory; Reformation.

INDUS (Sanskrit, Sindhu). River of Asia. It rises in the Tibetan Himalayas, at an alt. of about 18,000 ft. Flowing N.W. through Ladakh, it bends S. about 20 m. S.E. of Gilgit, and proceeds generally in a S.W. direction to its delta in the Arabian sea. Its length is about 1,800 m. It receives the Gartang 160 m. from its source, the Kabul river near Attock, and near Mithankot the Punjab, which carries the accumulated waters of the five rivers of the Punjab. The delta embraces 125 m. of coastline and covers an area of about 3,000 sq. m. The sandbanks are continually shifting, causing the channels to change their course. Hyderabad is the chief city on its banks.

The Indus basin is notable for its scanty rainfall. Throughout the lowland parts canals have been made to tap the torrential waters of the eastern tributaries and irrigate the upper plains, and to take off water from the lower river for the benefit of Sind.

INDUSTRIAL COURT. Organization for settling trade disputes. In the United Kingdom these were established by the Industrial Courts Act, 1919, to hear and decide trade disputes between employers and workpeople. The headquarters are 5, Old Palace Yard, London, S.W. See Arbitration.

INDUSTRIAL DISEASE. In general any disease which arises from and in the course of industrial processes. The term is specifically applied to certain diseases enumerated in an appendix to the Workmen's Compensation Act, 1906, or subsequently added thereto by order of the home secretary.

The more important industrial poisonings or diseases which appear in the schedule

to the Act or its additions are as follows: anthrax, resulting from the handling of wool, hair, bristles, hides, or skins; poisoning by lead, mercury, phosphorus, or arsenic, in processes involving the use or handling of these substances or their preparations or compounds; ankylostomiasis (miners' hookworm) in mines; poisoning by nitro- and amido-derivatives of benzene, carbon bisulphide, and nitrous fumes in processes involving the use or production of these substances; ulceration from chromic acid or its salts; eczematous ulceration of the skin by dust or corrosive liquids; cancer or ulceration of the skin from pitch or tar; scrotal epithelioma (chimney-sweeper's cancer) from chimney-sweeping; glanders; compressed air disease; miners' nystagmus; certain inflammatory conditions of the joints or tendons occurring in miners; telegraphists' cramp and writers' cramp. See Workmen's Compensation.

INDUSTRIAL SCHOOL. State-aided institution for the training of young children, mainly those with criminal associations. Industrial schools were the outcome of the voluntary ragged schools founded by John Pounds (1766-1839) early in the 19th century. They first received official recognition in 1837, since which date their history is closely associated with that of reformatories. Broadly speaking, however, industrial schools are for potential, and reformatories for actual, law-breakers. Detention in industrial institutions ends at 16; but the school managers may recall ex-inmates under the age of 18 who misbehave. See Borstal System.

INDY, PAUL MARIE THÉODORE VINCENT (b. 1851). French musician. He was born March 27, 1851, in Paris, where he studied at the Conservatoire. Afterwards he played in an orchestra, organized and directed concerts, and taught composition in his own school in the city. His compositions include several operas and many orchestral works, of which the trilogy *Wallenstein* is the most important.

INEBRIATE (Lat. *in*, intensive; *ebrietas*, drunkenness). Legal term for habitual drunkards. These are persons who by reason of habitual intemperate drinking of intoxicating liquors become at times dangerous to themselves, or incapable of managing their affairs, or a cause of harm or annoyance to others.

In the United Kingdom under the various Inebriates Acts in force there are three classes of institutions for the control and reformation of habitual drunkards, viz. licensed retreats, these being subject to inspection by an inspector appointed by the home secretary and to rules and regulations made by him; certified inebriate reformatories; and state inebriate reformatories for bad and refractory cases.

INERTIA (Lat.). In mechanics, the tendency of a body to keep the motion it may have. It is more closely defined by Newton's first law of motion, which states that every body continues in its state of rest or of uniform motion in a straight line, except in so far as it is compelled by force to change that state. The centre of inertia of a body is the same as its centre of gravity or of mass.

INESCUTCHEON. In heraldry, a small shield used as a charge in armorial bearings. It must not be confused with the shield of pretence or surcoat. See Heraldry.

INFANT (Lat. *in*, not; *fari*, to speak). Term used in English law for a minor, one who has not attained the age of 21. An infant is said to be "under disability." He cannot contract so as to bind himself, except for necessities. At common law any contract which can only be prejudicial to the infant is absolutely void, and cannot be ratified by him when of full age. Certain other contracts are null and void unless the infant actually

confirms them when of full age; others, again, are binding on him unless he disavows them within a reasonable time after attaining full age.

It is a misdemeanour to invite by letter, circular, etc., an infant to make bets or borrow money. An infant is liable for his torts. (*See Tort.*) He must always sue by some adult as his "next friend," and defend an action by his guardian ad litem. An infant, except a soldier, cannot make a valid will. He attains full age the day before his 21st birthday.

INFANTA (Span. child). Title of the daughters of the king of Spain. Infante is the title of the sons, except the eldest son, who is styled prince of Asturias. When Portugal was a monarchy the title was used there also.

INFANTILE PARALYSIS. Disease known also as acute anterior poliomyelitis, producing atrophy and degeneration of the nerve tissues of the brain and spinal cord. The cause is unknown. It is infectious, sometimes occurring in epidemics, but more frequently as a sporadic disease. In the epidemic form young adults are most frequently attacked. The sporadic form occurs in children. Complete recovery is rare. *See Paralysis.*

INFANTILE SCURVY OR **BARLOW'S DISEASE.** Disease often confused with rickets and other disorders. Being due to the absence of certain essential constituents from the diet, it is much more frequent in infants brought up on condensed and sterilised milks and patent foods than in those breast-fed. When moved the child cries continuously and is clearly suffering pain in the lower limbs. Later the limbs swell in the neighbourhood of the joints, bleedings take place in various parts of the body, notably under the fibrous covering of bones, and the infant also suffers from ulceration of the gums. Treatment consists in putting the child on proper diet, which includes a small teaspoonful of orange-juice two or three times a day.

INFANT MORTALITY. Term used for the deaths that occur among children under one year old. Despite the admitted improvement in social conditions, and the substantial decline in the infant death rate since 1915, much avoidable loss of infant life still occurs in the British Isles. In 1929 the rate was 74 per thousand. The highest rates of infant mortality are always found in the overcrowded slum districts of large towns, the rate sometimes rising to 140 or even more in the manufacturing towns of the N of England.

Many factors contribute towards loss of infant life. Perhaps the most important cause is vitiation of the atmosphere by smoke, and by dust blown up from dirty streets, refuse heaps, and other accumulations of filth. Parental ignorance and neglect, and adverse pre-natal conditions surrounding the mother, are also important causes of infant mortality. Provision of skilled attendance in child-bed would save a certain number of lives annually. Artificial feeding is undoubtedly very undesirable for newly-born infants, and the mortality rates in infants who are thus fed is much higher than in breast-fed infants. Among natural causes that lead to excess of infant deaths is a hot, dry summer, which is always attended in urban districts with an increase in deaths from infantile diarrhoea. *See Birth Rate; Death Rate.*

INFANTRY. General term for foot soldiers. It is one of the four main divisions or arms into which modern armies are divided, the others being cavalry, artillery, and airmen.

In modern armies the infantry unit is the battalion, with a strength of 1,000 men, divided into companies, and further into platoons. Battalions are grouped into brigades and brigades into divisions, and during the

Great War the infantry division of from about 12,000 to 16,000 men was recognized by all combatants as the most important unit on the field of battle. *See Army; Artillery; Camouflage; Cavalry; Strategy; Tactics.*

INFECTION (Lat. *inficere*, to put in, dip in, taint). Invasion of the tissues of the body by an organism which flourishes at the expense of the host. Bacteria and other infective micro-organisms may enter the body through the gastro-intestinal tract, as, for instance, typhoid and cholera; through the respiratory tract, as with pneumonia; or by inoculation through the skin or a mucous membrane, e.g. tetanus. In some diseases the infection is conveyed by some special agent, as malaria by mosquitoes.

When infection by a micro-organism occurs, the bacilli, if relatively few in number, may be quickly overcome by the phagocytic action of the blood, and the infection rapidly brought to an end. If this does not occur the micro-organisms increase rapidly. The symptoms of an infectious disease are due to the presence in the blood of poisonous substances or toxins generated by the action of the micro-organisms. *See Notification; Public Health; Sanitation.*

INFLAMMATION (Lat. *inflammare*, to set on fire). Natural reaction of living tissue to an injury. It is essentially a protective process. The most frequent causes of inflammation are infection by micro-organisms, burns, sprains, irritating substances, etc.

The familiar signs of acute inflammation are redness, heat, swelling, and pain. There is an increased supply of blood to the part, owing to dilatation of the small blood vessels. In the surrounding tissue the leucocytes, or white blood cells, attack and destroy the invading micro-organism, a process termed phagocytosis, many of them perishing themselves in the process, and forming the accumulation of white material known as pus.

Slight inflammation may terminate by complete recovery of the tissues. If, however, suppuration occurs, ulceration or necrosis of the tissues is likely to follow, permanent changes taking place and a scar being formed.

The treatment in acute inflammation consists first of all in removing the cause. A foreign body should be extracted, or if an abscess has formed it should be incised and the pus allowed to drain away freely. The part should be kept at rest. Congestion of the blood vessels may be relieved by hot fomentations. In chronic inflammation constitutional causes, such as gout, rheumatism, tuberculosis, or syphilis, may be mainly responsible for the condition.

INFLEXIBLE. British battle-cruiser. One of the *Invincible* (q.v.) class, she was completed in 1908, and displaced 17,250 tons. Her speed was 25 knots, and her guns eight 12-in. and sixteen 4-in. She took part in the battle of the Falklands, Dec. 8, 1914, was severely damaged by a mine in the bombardment of the Dardanelles, March 18, 1915, and was engaged in the battle of Jutland, May 31, 1916.

INFLORESCENCE. Botanical term to indicate the manner in which the flowers of a plant are grouped. A flower which has a shoot all to itself is said to be solitary. If it terminates a stem of the plant the inflorescence is definite. Flowering shoots produced as side branches constitute indefinite inflorescences. When the flowers are attached without footstalks to a common axis, the inflorescence is a spike; but if each flower has a short footstalk, it is a raceme. When a raceme branches it becomes a panicle. If the lower flowers have much longer footstalks than the upper ones, the inflorescence is a corymb. If at the end of a flower-stalk a number of shorter stalks radiate, each ending in a small flower, it is known as an umbel. A flowering stem may end in a flower, but send out side branches a little

below which will end in flowers and produce other side branches. Such an arrangement is known as a cyme. *See Botany; Flower.*

INFLUENZA (late Lat. *influentia*, flowing in, influence). Highly infectious epidemic disease. It has been recognized since the 16th century, and from time to time widespread epidemics have occurred. The serious epidemic of 1918 was prevalent all over Europe, the U.S.A., India, and Australia.

The disease is due to a micro-organism. The period between the entrance of the organism in the system and the beginning of the symptoms is generally not longer than 48 hours. Influenza affecting the respiratory passages is the most frequent form. There is running at the nose, with shivering and rise of temperature, which may reach 102° or 103° F. Serious complications are bronchitis, pleurisy, and pneumonia. In other cases, disorder of the heart or nervous or digestive systems may be the most prominent feature.

The great majority of persons affected recover quickly without developing complications. The patient should always remain in bed until the temperature is normal. A light diet should be given and the bowels attended to. A month at the seaside, after the acute symptoms have disappeared, is desirable.

INFORMATION (Lat. *informare*, to outline, inform). Term used in English law. The crown is entitled to proceed in the courts, not by way of writ in civil cases or by indictment in case of great public misdemeanours, but by way of information which is said to be "laid" by the attorney or solicitor-general.

This form of procedure is adopted in nearly every case where the crown sues for money, or chattels, or damages for trespass on crown lands. The trial is like that of an ordinary action. In criminal matters, the procedure is only adopted in cases of great public misdemeanours, such as seditious conspiracies.

MINISTRY OF INFORMATION. Department of the British Government in operation during the Great War. From the outbreak of war until the end of 1916 the work of disseminating information about Britain's aims and combating the efforts of the enemy in neutral countries was under the control of the foreign office. In Dec., 1916, a special department was set up which was later divided into sections, Viscount Northcliffe being made director of propaganda in enemy countries. In Feb., 1918, it passed into a ministry. Lord Beaverbrook became the minister, and two propaganda bureaux, already in existence, were brought into the department. The ministry was wound up at the end of 1918.

INFORMER. In English law a person who prosecutes or sues another for breaking a penal statute. The term is also used of a criminal who approves, i.e. comes forward to give evidence against his fellow criminals. *See King's Evidence.*

INFUSORIA. Name applied vaguely and unscientifically to minute protozoa which commonly make their appearance in infusions of vegetable matter. If hay or dead leaves are steeped in water till the liquid becomes turbid, microscopical examination will reveal the presence of hosts of active creatures moving about by means of cilia or flagella.

INGE, WILLIAM RALPH (b. 1860). British divine. Born June 6, 1860, he was educated at Eton and King's College, Cambridge, of which he became fellow, after an exceptionally brilliant academic career. For four years after 1884 he was a master at Eton, and from 1889-



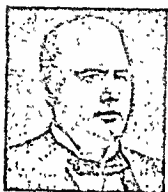
William Ralph Inge,
British divine
Russell

1904 he was fellow and tutor of Hertford College, Oxford. In 1911 he was chosen dean of S. Paul's Cathedral, and during the next few years his utterances on public questions aroused much attention. His views are contained in *The Church and the Age*, 1912; *Outspoken Essays*, 1919; *Lay Thoughts of a Dean*, 1926; *Assessments and Anticipations*, 1929; and other books. He was knighted in 1930.

INGELOW, JEAN (1820-97). British poet and novelist. Born at Boston, Lincolnshire, March 17, 1820, the publication of a series of poems in 1863, containing the fine ballad *High Tide on the Lincolnshire Coast*, first established her reputation, which was enhanced by *A Story of Doom*, 1867. She also wrote stories for children, and several novels, of which the best known is *Off the Skellings*, 1872. She died July 20, 1897.

INGERSOLL. Town of Ontario, Canada. It stands on the river Thames, 19 m. N.E. of London, and is served by the C.P. and C.N. Rlys. Pop. 6,150.

INGERSOLL, ROBERT GREEN (1833-99). American politician and lecturer. Born at Dresden, New York, Aug. 11, 1833, he entered political life as a Democrat. He afterwards went over to the Republican side, became attorney-general for Illinois in 1868, and developed remarkable power as an orator, using this gift largely as an opponent of Christianity and the Bible. He died July 21, 1899. His works include *The Gods* and other lectures, 1876; *Some Mistakes of Moses*, 1879; *Great Speeches*, 1887. They were issued in 12 vols., 1900.



Robert G. Ingersoll,
American politician

Some Mistakes of Moses, 1879; Great Speeches, 1887. They were issued in 12 vols., 1900.

INGLEBOROUGH. Mountain of Yorkshire (W.R.). In the Pennine range, it is 3 m. from Settle and is 2,373 ft. high. It is best ascended from Clapham, where is a station on the L.M.S. Ry. Ingleborough Cave consists of a series of passages in the limestone about 700 yards long, filled with stalactites and stalagmites. On Ingleborough is Gaping Ghyll, a limestone cavern 400 ft. deep.

INGLETON. Market town of Yorkshire (W.R.). It is 14 m. from Sedburgh, on the L.M.S. Ry. Ingleborough is in the neighbourhood. Market day, Fri. Pop. 2,461.

INGLIS, ELSIE MAUD (1864-1917). Scottish doctor. Born in India, she graduated in medicine at Edinburgh university and practised for a time in that city. In 1915 she went to Serbia with the Scottish Women's Hospitals and did a great work there during the terrible epidemic of typhus. In 1916 she was for a time a prisoner. Soon after her release, in Aug., 1916, she went with some other doctors and assistants to Archangel to assist the Russians. There she was taken ill, and on reaching England she died, Nov. 27, 1917.



Elsie Inglis,
Scottish surgeon

INGRES, JEAN AUGUSTE DOMINIQUE (1780-1867). French painter. Born at Montauban,



J. A. D. Ingres,
French painter
Self-portrait

Aug. 29, 1780, he entered David's atelier in Paris in 1796. In 1806 he went to Rome, where he lived until 1820. He succeeded Vernet in the directorate of the French School in Rome in 1834, and was named a senator in 1862. He died Jan. 14, 1867. His most famous works were *Oedipus* and the *Sphinx*, 1808; *An Odalisque*, 1819; and

Jesus Giving the Keys to S. Peter, 1820. He was also a distinguished portrait painter.

INHAMBANE. Coastal dist. and town of Mozambique or Portuguese E. Africa. Its area is about 33,000 sq. m. and the pop. about 750,000. The port of Inhambane lies between Lourenço Marques and Beira, and possesses a spacious harbour. It is the terminus of a coastal rly. from Lourenço Marques via Chai-Chai on the Limpopo river, and has a wireless station. Pop. 3,500.

INITIATION (Lat. initium, beginning). Term signifying introduction to a society, business, or office. It is more particularly used of admission to an order of knighthood or a secret organization, as that of the Freemasons, when it is accompanied by rites and ceremonies. In primitive culture the rites concern introduction into the privileges and duties of adult life.

INITIATIVE. In politics, the power of originating legislation. In the U.K. the initiative in regard to financial bills is with the House of Commons; the initiative on all important legislation rests in practice with the government. In Switzerland if 30,000 citizens present a petition for the revision or annulment of a measure it must be submitted to a referendum (q.v.).

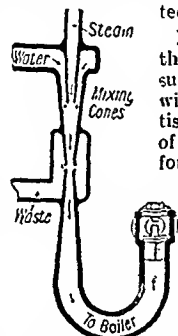


Diagram illustrating principle of working of injector.

INJECTION (Lat. injectio, throwing in). In medicine, substance introduced from without into an organ or tissue, either for the purpose of supplying food material or for medical reasons. Hypodermic injections are solutions of drugs introduced under the skin by a syringe terminating in a fine hollow needle. See Enema.

INJECTOR. Device in which the velocity of high-pressure steam or compressed air is used to move liquids or gases through pipes or other channels. If the apparatus is designed primarily as a feeder, it is termed an injector; if as a remover, an ejector. Injectors are commonly employed to force water into steam boilers, and are sometimes used instead of pumps to deliver water to a height. A steam ejector is used to maintain a vacuum in the cylinders of the vacuum brake used on trains. The best injectors re-start themselves.

INJUNCTION (Lat. injungere, to bid, enjoin). In English law, an order of the court prohibiting a defendant from doing something he has started to do, or threatens to do. As a rule, injunctions are negative; in rare cases the court will grant a mandatory injunction, commanding something to be done.

INK (Lat. encaustum). A liquid medium by means of which more or less permanent characters may be produced upon any material. The principal kinds are (1) writing; (2) copying; (3) drawing; (4) marking; (5) printing; (6) typewriter; and (7) inks for special purposes. The earliest writing inks consisted of lamp-black and a solution of glue or gum. Such inks have been replaced in Europe by inks made from galls and iron sulphate or copperas. A small proportion of an acid is added to prevent the ink from clanging in the bottle. In modern blue-black inks a provisional colour such as indigo or aniline blue is introduced. Carbolic acid is added to prevent mould, and in some cases a little gum is used. Red ink is usually a solution of the coal tar dye eosin. In copying inks a larger proportion of copperas, galls, and dye is used, with a small amount of glycerin. Indian ink is composed

mainly of fine lampblack and glue. The best known marking inks are preparations of silver salts or aniline salts. Printing inks are essentially a special kind of oil paint. Type-writer inks frequently consist of a solution of methyl violet with glycerin, oil, etc. Inks for secret writing consist of a colourless liquid which forms a coloured compound on treatment with another solution.



Inkhorn carried by Eastern scribes

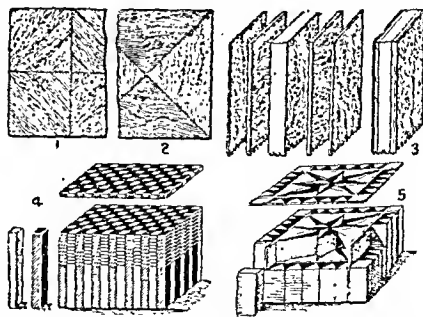
An inkhorn is a portable receptacle for holding ink, some being also made to take pens and other writing implements. They are made of wood, horn, or metal, and are still carried by scribes in the East.

INKERMAN. Ridge overlooking Sevastopol. Here, during the Crimean War (q.v.), a battle was fought between the British and the Russians, Nov. 5, 1854. The British held the ridge, and here the Russians repeatedly attacked them in superior numbers; but after British and French reinforcements arrived the guns on Shell Hill were silenced and the Russians fell back. The British lost about 2,400 out of 8,500 engaged; the French lost over 900. The Russian losses were placed at 11,000 or 12,000 out of 42,000 engaged.

INKPEN. Village of Berkshire. Near is Inkpen Beacon, which includes Walbury Hill (959 ft.), the highest point in the south-east of England. Pop. 658.

INLAND REVENUE. Name given in the U.K. to certain items of the national revenue. It includes income tax, death duties, and stamp duties. The collection of these duties is supervised by the board of inland revenue, the chief offices of which are at Somerset House, London, with branches in Edinburgh and all over the country.

INLAND SEA. Almost entirely landlocked and generally shallow basin in Japan. It lies between S. Honshu and the island of Shikoku, and extends for 240 m. from Osaka Bay to the Strait of Shimonoseki. It communicates with the Pacific Ocean by the Straits of Akashi and Naruto, between which lies the isle of Awaji, and the Strait of Hayasui between Shikoku and Kiusiu. The sea comprises a number of basins joined by narrow, island-studded channels and is much used by steamers.



INLAYING. 1. Veneer of mahogany and, 2, of walnut, made by sawing the wood across the grain and laying the pieces to form a pattern. 3. Detail of double veneering on two sides of a panel. Left, ground work with two leaves of veneer on each side; right, the completed panel. 4. Commercial method of making chessboards and, 5. Geometrical patterns, by gluing strips of different colours into a block from which transverse sections are sawn, as shown above.

INLAYING. Insertion of ornamental designs on wood or metal or other substance by fitting the design, of thin material, into the surface. The design shows chiefly by difference in colour. It is common in veneered furniture and in some classes of ornamental metal work. It may consist of narrow lines or bands or be

an elaborate decoration. In furniture, woods of different natural colours are employed, also pearl, ivory, tortoiseshell, and metal. In wood the inlay is glued, in metal it may be retained by undercut edges. *See Furniture.*

INN. House where travellers and others are fed and lodged for gain. The earliest inns were the caravanserais and khans of the East. The Greek and Roman inns were little more than drinking shops, but the Roman posting-houses on the great roads closely resembled the later inns. In Roman Britain there were taverns for rest and refreshment. In the Middle Ages hospitality was provided chiefly at the castles, country houses, and monasteries. The old inns were usually built in the form of a hollow square surrounded by galleries, upon which the bed-rooms opened. During the coaching period inns enjoyed great prosperity, which declined with the coming of the railways.

One of the most picturesque of English inns is the half-timbered Feathers, at Ludlow. Other good examples of so-called magpie or black-and-white inns are The Old Hall at Sandbach (originally the manor house), The Bear's Head at Brereton, The Swan and Lion at Congleton, The Bear and Billet at Chester, formerly the town mansion of the earls of Shrewsbury, and The Pounds Bridge Inn between Penshurst and Speldhurst, Kent. The Luttrell Arms, at Dunster, Somerset, is a fine 15th century building. Of the few galleried inns that survive, the finest is the New Inn, Gloucester, built, 1450-57, to accommodate pilgrims to the shrine of the murdered king Edward II.

The George, Glastonbury, is a very handsome building, with the original Perpendicular stone front. The frontage of The Star at Alfriston has fine carvings, many of them ecclesiastical, and is roofed with large slabs of Horsham stone.

By law an innkeeper is bound to receive and entertain for a reasonable time at a reasonable charge any traveller who applies for admission, provided that accommodation is available and the applicant behaves properly.

The Innholders' Company is a London city livery company which, originating in the 14th century, received a charter in 1515, being incorporated at the time inns were beginning to take the place of monasteries as resting places for travellers, and every tavern keeper was compelled to belong to it.

Consult The English Inn, Past and Present, A. E. Richardson and H. D. Eherlein; The Book of the Inn, T. Burke, 1927.

INN. River of Europe. It rises in the canton of the Grisons, Switzerland, and flows through the Engadine. Having entered the Austrian Tirol, it flows by Innsbruck and, leaving Austria near Kufstein, enters Bavaria and joins the Danube at Passau. It is about 310 m. long. Its main tributaries are the Salzach and Alz. It is navigable for small vessels from below Innsbruck.

INNERLEITHEN. Burgh of Peebles-shire, Scotland. It stands on Leithen Water, 6 m. from Peebles, on the L.N.E.R. Woollens are made, and there is a mineral spring supposed to be Scott's S. Ronan's Well. Near is Horsburgh Castle. Pop. 2,403.

Innisfail or **INISFAIL.** Poetical name for Ireland. It means the isle of destiny.

INNISKILLING FUSILIERS, ROYAL. Regiment of the British army. It takes its name from Enniskillen, Ireland. For its gallant defence of the town in 1689 part of the garrison was formed into regiments of the British army, later represented by the Inniskilling Fusiliers and the Inniskillings (6th Dragoons). The former, an infantry unit, was known as the 27th Inniskillings until 1861, when its present title was granted, while at the same time the old 108th Foot was constituted the 2nd battalion. The latter was raised as the 3rd Madras Europeans in the East India Company's service in 1854. In 1915 the 1st Inniskillings formed part of the 29th division

and took part in the Gallipoli landing, April, 1915. After the war the Royal Irish Fusiliers were incorporated with the Inniskillings. The regimental depot is at Omagh, Northern Ireland.

The 6th Inniskilling Dragoons, a cavalry regiment with a distinguished record, including service at Waterloo, in the S. African War, and the Great War, is now incorporated with the 5th Dragoon Guards, which bears the name Inniskilling. *See Dragoon.*



Inniskilling Fusiliers badge

INNOCENT. Name of 13 popes. Innocent I, pope 402-417, supported John Chrysostom and was declared a saint. Innocent II, 1130-43, was disturbed by the rival claim of the anti-pope Anacletus II (d. 1138). Innocent IV, pope 1243-54, deposed the emperor Frederick II and founded the Inquisition (q.v.). Innocent V, the first Dominican pope, only reigned from Jan. to June, 1276. Innocent VI, pope 1352-62, was a Frenchman named Aubert, who reigned at Avignon.

Innocent VII was pope 1404-6, during the schism of the anti-pope Benedict XIII. Innocent IX, when 72 years old, was pope Oct.-Dec., 1691. Innocent X was pope 1644-55, and Innocent XIII was pope 1721-24.

INNOCENT III (1160-1216). Pope 1198-1216. The son of Count Trasimund of Segni and nephew of Clement III, he was born at Anagni, and was one of the greatest of the popes, using his energies specially for the restoration of the temporal power of the papacy in Italy, the reconciliation of the spiritual and temporal power in Europe, and the recovery of the Holy Land. He called the general council, Nov., 1215, which proclaimed the fifth crusade, and died at Perugia, July 16, 1216. His body was removed to the Lateran from the cathedral of Perugia by order of Pope Leo XIII in 1891.

INNOCENTS' DAY, HOLY INNOCENTS OR CHILDRENMASS. Holy day of the Christian Church. It is observed in the West on Dec. 28, in the Greek Church on Dec. 29, in memory of the children massacred by Herod (Matt. 2).

INNSBRUCK. Town of Austria, in Tirol. A tourist resort, it stands mainly on the right bank of the Inn, at a height of 1,880 ft., 60 m. S. by W. of Munich, and is the capital of Tirol. Picturesquely situated, it is sheltered on the N. by lofty peaks, and the climate is pleasantly mild during autumn and winter. The old part

contains many interesting buildings, including the Goldenes Dachl, 1500, connected with Maximilian I, and the Franciscan church, built about 1550 to contain the emperor's monument. The town has cotton, mosaic, and glass-painting industries. Pop. 56,401.

The university, founded in 1672, has a library of over 200,000 volumes. Close by is the Ferdinand museum, with various collections, mainly of Tirolese interest, including a picture gallery, in which, moreover, several of the old masters are represented. In the suburb of Wilten, to the S., is a great church in the baroque style belonging to an abbey founded, it is said, in the 12th century.

INNS OF COURT. Name of four English legal societies possessing the exclusive right of calling persons to the bar. They were so called from affording residence to members and from their ancient association with the aula regia or court of the king's palace. Originating in the 13th century, they include benchers (or senior members), barristers, and students, and are managed by the benchers, who are co-opted. They are Lincoln's Inn, Inner Temple, Middle Temple (*see Temple*), and Gray's Inn. There are inns for barristers in Dublin for the Irish Free State, and in Belfast for Northern Ireland.

INO. In Greek mythology, daughter of Cadmus, king of Thebes. She married Athamas, king of Minyae in the Boeotian Orchomenus. *See Cadmus.*

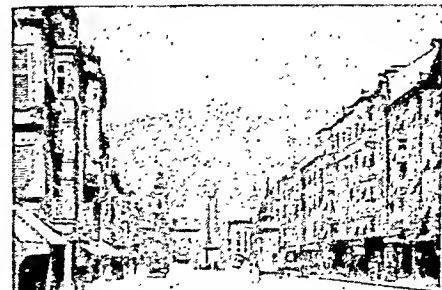
INOCULATION (Lat. *inoculare*, to insert a graft). Introduction of a virus, usually a micro-organism or the products of activity of a micro-organism, into the system through an abrasion or perforation of the skin, in order to communicate a disease. The introduction of a virus to prevent a disease is now called vaccination, inoculation, using the word in the narrower sense, being only performed upon animals for the purpose of investigating the disease. *See Vaccination.*

INQUEST (O. Fr. *enquête*, from Lat. *inquisitum*, passive part. of *inquirere*, to inquire into). Judicial inquiry. A survival of its primary purpose is seen in the inquest concerning any matter that entitles the king to the possession of lands, goods, or chattels.

The word is now mainly restricted to an inquiry held by coroner and jury to ascertain the cause of death of a person "where there is reasonable cause to suspect that such person has died either a violent or an unnatural death, or has died a sudden death of which the cause is unknown, or that such person has died in prison."

A coroner's inquest, though it may terminate in the committal of a person for trial, is not a trial, and the laws of evidence which hold good in other courts are not insisted upon. *See Coroner; Jury.*

INQUISITION or **HOLY OFFICE, THE** (Lat. *inquisitio*, inquiry). Tribunal of the



Innsbruck. Theresienstrasse, the main street

Roman Catholic Church for the suppression of heresy. Founded by Innocent IV in 1248 and chiefly directed by Dominicans since the 19th century, it has been confined to the repression

of heretical literature. The first tribunal of the Inquisition was set up at Toulouse. The system gradually extended to Italy, except Naples: to Spain, Portugal, Peru, Mexico, Goa, the Netherlands, and Germany. The first inquisitor-general to condemn heretics to the stake was a Dominican, Pedro de Verona, who was slain by the populace at Como in 1252, and later canonised as Peter Martyr. Punishments were specially severe in Spain, where, for political and other reasons, the Inquisition was reorganized by the State, with the permission of Sixtus IV, in 1478, and directed against the Jews and Moors. The statement that more than 340,000 persons were executed is disputed, but the number was large, and the tortures terrible. The Spanish Inquisition was directed against words, actions, and assumed intentions.

The tribunal sat in secret. Its sentences were proclaimed at an auto-da-fé and carried out by the civil authorities. The Spanish Inquisition was overthrown by Napoleon in 1808, abolished 1813, revived 1814, abolished again 1820, superseded 1823 by an independent Tribunal of the Faith, and finally disappeared 1834-35. The Inquisition existed in Portugal 1557-1826; was suppressed in Germany at the Reformation; in France in 1598; in Italy in 1870. See Albigenes; Auto-da-Fé; Torquemada. Consult The Inquisition in the Spanish Dependencies, H. C. Lea, 1908.

INSANITY.

Generally speaking, mental derangement due to some disease or defect of the brain. Precise definition is impossible, since disorder of the mental faculties may result from influences which can be traced and rectified. A

person may be regarded as insane who is unable to take care of himself or his affairs, or is dangerous to himself or others, or has delusions or abnormal ideas which unfit him for leading a normal social life. The chief forms of insanity are: Mania, melancholia, acute confusional insanity, paranoia, dementia praecox, secondary dementia, idiocy and imbecility, epileptic insanity, general paralysis of the insane, toxic insanity, insanity associated with reproduction (puerperal insanity).

Forms of mental disorder overlap, however, and a person may show more than one form at different times. A person of unsound mind can be placed under restraint, provided the degree of mental disorder is sufficient to justify such restraint. See Lunacy.

INSCRIPTION (Lat. in, upon: scribere, to write). Records composed of alphabetic or other conventional characters written, incised, or impressed upon durable materials. They occur upon rock surfaces and upon stone, metal, clay, wood, and other substances, including buildings, sepulchral and other monuments, pottery, and weapons. Their study is called epigraphy, and their decipherment has been of immense importance in unravelling the history of mankind.

The decipherment of the Rosetta stone, for example, furnished the key to the native history of ancient Egypt. Babylonian and Assyrian history was similarly revealed through the decipherment of the rock-cut inscriptions at Behistun. See Alphabet; Cuneiform; Graffiti; Hieroglyphs; Ogam.

INSECT. The largest class of the arthropoda or jointed-limbed animals, of which

fication of internal tubes, known as tracheae, connected with external openings on each side of the body. These features are constant and form the characteristics of the class; but individual orders differ widely in appearance, details of structure, and mode of life.

The sexes are separate, and only reach their full development in the final stage of the life cycle. Propagation takes place normally by the union of the sexes and the subsequent deposition of eggs; but in some cases the young are born alive, while parthenogenesis, or birth without the intervention of the male, is common. The life history of a typical insect is one of metamorphosis. The egg having hatched, the first stage of life is passed as a larva, the stage of growth. Next comes a quiescent or pupal stage, in which the internal organs undergo reconstruction and the various external organs of the perfect insect develop. From the chrysalis emerges the imago, or perfect insect, which in due course propagates its kind by laying a number of eggs, and soon afterwards dies.

The chief orders of insects are: Aptera, Hemiptera, Diptera, Orthoptera, Neuroptera, Odonata, Hymenoptera, Lepidoptera, Coleoptera. See the articles bearing these titles, and those dealing with specific insects, e.g. ant, bee, butterfly, etc. Consult also *Insects and Man*, C. A. Ealand, 1915; *Insect Life*, C. A. Ealand, 1921.

Insectivorous plants are plants which have adapted parts of their structure to the catching of insects, whose soft parts are dissolved out and then absorbed by the plant for its nourishment. Sundew (*Drosera*), butterwort (*Pinguicula*), bladderwort (*Utricularia*), and a few others procure the greater part of their sustenance by digesting and assimilating insects which they have captured.

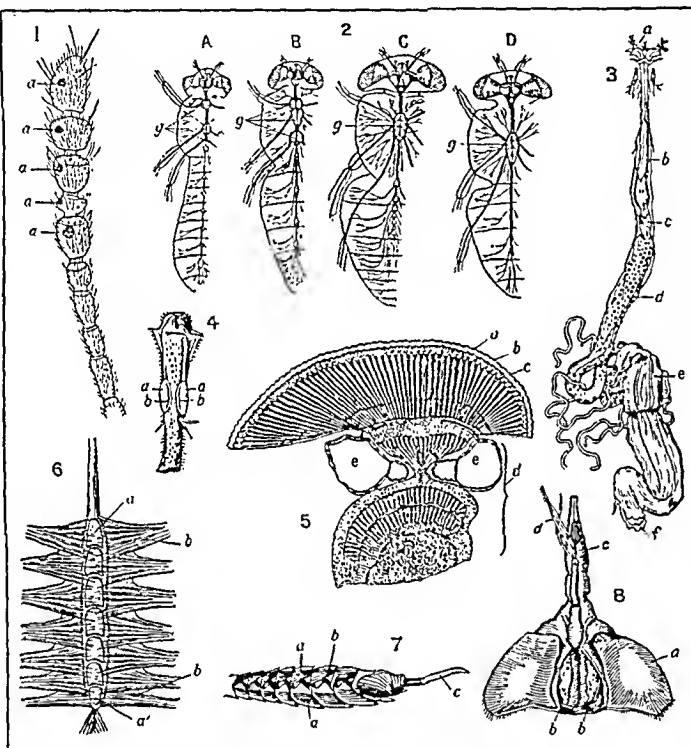
INSECTICIDE. Name applied to various chemical mixtures in powder or liquid form designed to destroy insect pests in house or garden. Insecticides act in various ways, some by causing suffocation, others by direct action upon the carcasses of the pests, or by poisoning their food.

INSKIP, SIR THOMAS WALKER HOBART (b. 1876). British lawyer. The son of a Bristol solicitor, he was born there March 5, 1876. Educated at Clifton and King's College, Cambridge, he became a barrister. During the Great War, as a K.C., he worked at the Admiralty, and in 1918 he was elected M.P. for Central Bristol. In 1922 he was made solicitor-general in the Unionist Ministry and with a year's break he retained the office until 1928, when he was made attorney-general. In 1929 he resigned, and at the general election in May lost his seat at Bristol. He was chancellor of Truro diocese, 1920-22.



Sir Thomas Inskip,
British lawyer
Russell

INSOMNIA (Lat. *insomnis*, sleepless). Inability to sleep. External causes of the condition are bad ventilation of the bedroom, an uncomfortable bed, too high or too low a pillow, too many or too few bedclothes, noise, or too strong a light in the room. Other causes are taking a heavy meal, or (sometimes) drinking tea or coffee shortly before going to bed. More serious causes are conditions of ill-health, such as dyspepsia, disorders of the heart or lungs, and disturbances of the nervous system. The treatment should be directed towards removing the underlying cause; but it is exceedingly undesirable to resort to hypnotic drugs except under medical advice.



Insect. 1. Antenna of cave-beetle (*Adelops*), showing organs of smell, a, in terminal joints. 2. Nervous systems of flies, showing progressive concentration of ganglia, g, into a central mass controlling wings and legs: A, *Harlequin-eat*; B, *Hawk-fly* (*Empis*); C, *Gad-fly*; D, *Flesh-fly*. 3. Digestive system of stag-beetle: a, mouth parts; b, gullet; c, gizzard; d, stomach; e, intestines; f, rectum. 4. Ears of long-horned grasshopper in shank of front leg: a, cover of drum; b, opening to drum. 5. Section through compound eye of blow-fly, showing outer layer, a, of facets or simple eyes backed by crystalline cones, b, and rods, c, conveying images to the optic tract, d, and thence to the brain; e, air tube. 6. Head of earwig in position. 7. Muscles of abdomen of earwig: a, longitudinal muscles; b, oblique muscles; c, cercopod. 8. Head of giant water-bug: a, eyes; b, poison glands; c, beak; d, piercing lancets. All greatly enlarged.

more than a quarter of a million species are known. The body of an insect is "cut into" three divisions: the head, thorax, and abdomen. The head is furnished with a pair of antennae, which serve as organs of touch, and perhaps of smell; jaws and other mouth appendages, which may be modified into a sucking tube, as in butterflies and moths, or a piercing instrument, as in mosquitoes and fleas; and a pair of compound eyes. The thorax is always furnished with six jointed legs, and usually with two pairs of wings. The abdomen contains the bulk of the internal organs, and is without limbs, but may be provided with sting, ovipositor, or pincers.

The body of an insect is encased in chitin, which forms a kind of external skeleton. The breathing apparatus consists of a rami-

INSPIRATION (Lat. *inspirare*, to breathe into) Word commonly used to denote a supernatural influence or agency acting upon the human mind for the purpose of creating literature, especially sacred literature. Perhaps the best definition of inspiration is in accordance with the findings of modern scholarship is that of S. R. Driver: "However difficult it may be to define inspiration, or to determine the mystery of its operation, those who use the term may be supposed probably to mean by it an influence which gave to those who received it a unique spiritual insight enabling them thereby, without superseding or suppressing the human faculties, but rather using them as its instruments, to declare in different degrees and in accordance with the needs or circumstances of particular ages the mind and purpose of God." See Bible; Gospels; The Font.

INSTINCT (Lat. *instinctus*, impulse). An inborn capacity for effective behaviour which expresses itself in immediate response to a particular stimulus without requiring practice or inference. Instinctive behaviour is seen at its best in the routine work of ants, bees, and wasps. It may be that instinctive behaviour improves by practice and is modified by education, but the capacity is in its essentials ready-made. Intelligent behaviour is marked objectively by trial and error experimenting and profiting by experience; subjectively by perceptual inference. Experimenting with general ideas is apparently peculiar to man, and is called reason.

That higher animals have the power of perceptual inference cannot be directly proved; the only arguments are indirect and by analogy, and are not legitimate where the central nervous system is not closely akin to our own. The popular notion that animals have instincts, while man has intelligence, is quite inept, for man has a number of instincts (mostly of a generalised type), and many animals must be credited with intelligent behaviour. See Animal Intelligence.

INSTITUTE (Lat. *instituere*, to establish). Term used for something established. It was borrowed from France, and is used for societies of a learned character.

The Institute of France is the general title of the group of the five great learned societies of France. These are the Académie Française (q.v.); the Academy of Inscriptions and Belles-Lettres, founded by Colbert, 1663; the Academy of Science, founded by Colbert, 1666; the Academy of Fine Arts, finally constituted as such in 1816; and the Academy of Moral and Political Sciences, constituted in 1832. The Institute was established on Oct. 25, 1795.

The Institut Français is a French educational organization in London. Founded in 1910, its home is in Cromwell Gardens, S. Kensington, S.W.7.

INSTITUTES (Lat. *instituere*, to establish). Term used for certain treatises on law. The best known are those of Justinian and of Coke. The former, an exposition of Roman law, compiled about A.D. 533, is the basis of a great part of the law of Western Europe. Coke's Institutes, 1628, is a compendious treatise on the English law of his day. The first volume, on tenures, is frequently called Coke upon Littleton, as it is a commentary upon the older work of Littleton on tenures. The second deals with parliamentary acts.

INSULATION. In electricity, the resistance to the passage of electric current by a resistance insulator. Air and gases, when quite dry, are practically perfect insulators. Vulcanised rubber, gutta-percha, vulcanite, glass, shellac, resin, mica, wax, porcelain, marble, slate, silk, cotton, and paper are among the best solid insulators.

Of the qualities demanded from insulators the most important are high resistance to leakage and to sudden puncture by intense electric pressure, solidity, flexibility, mechanical strength, durability, permanence of character, non-absorption of moisture, and ability to withstand considerable changes of temperature. See Cable; Resistance.

INSULIN. A drug used in the cure of diabetes. Discovered by Dr. F. G. Banting (q.v.), and extracted from the pancreatic glands of oxen, it reduces the sugar in the blood. It is named after the cells in the pancreas known as the *insulae* or *islets*.

INSURANCE. A provision, or contract, by which the risk of pecuniary loss arising from death or personal injury, or from destruction of, or damage to, property owing to perils of any kind to which an individual, the insured, may be exposed, is undertaken by a group of persons or a corporation, called the insurers. As consideration an appropriate premium is paid to the insurers, either in a single sum or by periodical instalments.

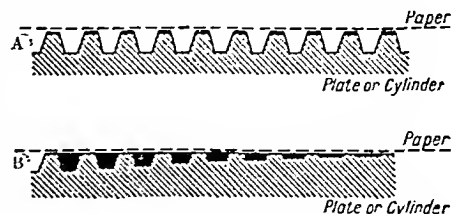
The essence of the transaction is that losses definitely anticipated or arising, it may be, from unforeseen contingencies are transferred to the shoulders of other parties whose business is to undertake and average a large number of similar transactions and who, by reason of the broadening of the basis, are able to sustain such losses with equanimity.

A distinction has been drawn between assurance and insurance, the former term having been applied to life contracts and the latter to marine, fire, and miscellaneous risks, but there is a tendency to use both terms indiscriminately. It is important to remember, however, that whereas a life policy is concerned with an event which must happen, and in regard to which a claim must eventually fall upon the insurers, unless the premium is allowed to lapse, it is possible with practically all other forms of insurance that no claim will ever arise, and the contract may be looked upon by the policy-holder as an indemnity. Good faith must be shown on both sides. Misrepresentation or omission to state a material fact when proposing a risk voids the contract.

The operations of the ordinary British life assurance companies, whose funds in the aggregate now exceed £600,000,000, are carried on subject primarily to the provisions of the Assurance Companies Act, 1909. The Marine Insurance Act, 1906, is the standard for English marine insurance, which may be divided into two classes: the insurance of the body of the ship and of the owner's other interests; and the insurance of the cargo. As to fire insurance, the premium income of all the fire companies in Great Britain amounts annually to about £12,000,000. Accident insurance is of more recent growth, but there are approximately 100 companies and the total premium income exceeds 15 million pounds. Other classes of insurance are against burglary, housebreaking or larceny, loss of crops owing to bad weather, and so on. See Health Insurance; Unemployment, etc.

INTAGLIO. Process of illustrating known also as photogravure and rotogravure. At first it was used in the reproduction of original paintings in the form of prints, but has been put to more extended use for illustrating periodicals, magazines, and newspapers, and has gained in public favour because greater depth and richness of colour are imparted to a picture by this process than by the method known as half-tone (q.v.), to which it is in principle the exact reverse. A ruled or dotted screen is used, as in the half-tone process, but the recesses or valleys produced on the etched cylinder are of varying depths, the ink being in the valleys or between the dots, and not on

the surface. The degrees of light and shade are obtained by the quantity of ink contained in these spaces, some of which are deep and others shallow. Thus a row of deep ravines in the block will give heavy shadows in the pictures, and vales the lighter portions.



Intaglio. Exaggerated diagrams illustrating in section A, how the surface of the printing plate takes the ink in the half-tone; B, how the ink remains in the recesses of the cylinder in photogravure.

As the design is below the surface of the cylinder the ink fills up the design, and then by scraping off all the superfluous ink the surface is wiped perfectly clean. A web of paper is then passed over the cylinder and a rubber-covered roller impresses the paper into the indentations, transferring the ink therein on to the paper, thus reproducing the design.

The principle of intaglio printing is not confined to illustrations. It is largely used for printing on silk and other textiles, and for the printing of wallpapers.

INTELLIGENCE (Lat. *intellegere*, to be aware of, to understand). The ability to learn from experience and to improve one's methods accordingly. In the animal world intelligence is usually contrasted with instinct (q.v.). An instinct is an inborn predisposition to a fixed mode of behaviour. Intelligence first manifests itself as a break-away from the traditional routine of instinct, under the pressure of a change in the environment. Man has gradually learned, by trial and error, by remembering and comparing, the useful arts and practical sciences.

The Intelligence Department in British civil organization is officially known as the Department of Overseas Trade (Development and Intelligence), and, established in 1917, it took over the dept. of commercial intelligence of the board of trade, the war trade intelligence dept., the foreign trade dept., and the consular service and consular dept. of the foreign office. Intelligence departments are attached to the fighting forces of the crown.

TESTS OF INTELLIGENCE. An intelligence test is a test for the determination of the mental capacity of an individual. Such tests include ordinary examinations at schools, universities, etc., and what are known as the Binet-Simon series, by which a child of nine is expected to give the days of the week in their correct order in 10 seconds, to give the correct change in money from a small sum, etc. One such test for adults is to cross out every A in the following passage in 20 seconds:

OYKFIUDBHTAGDAACDIXAMRPAG
QZTAACVAOWLYZWABETHJJAN
EEFAAMEAACBSVKALPHANRN
PKAZFYRQAEAXJUDFOIMWZSAU
CKVAOABMYDYAAZJDAJACINE
VBGAOFHARFVJCTQZAPJLEQWNA
HRBULASSNZMWAAWHACAXHXQ
AXTPDPUTYGSGRKVLGKIMFU
OFAAKYFGTMBLYZJJAAYAACAACD
TVDACSIUFMOTXWXMQEAKHOA
FXZWSAI

INTENTION. In English law it is a maxim that the intention is to be regarded rather than the form. But in construing legal documents the court must always deduce the intention from the words of the document. If the language is clear, no one will be allowed to say that something else was intended.

INTERDICT (Lat. *interdicere*, to forbid). Term used for an ecclesiastical punishment imposed by a pope, bishop, or other prelate. A general interdict is when all public worship is forbidden. A local interdict is when a diocese or parish is similarly punished. The punishment for an individual usually takes the form of excommunication (q.v.).

In Scots law an interdict is a judicial order forbidding certain proceedings. It corresponds to the English order known as injunction (q.v.).

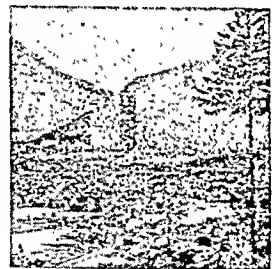
INTEREST (Lat. *interesse*, to be between). In finance, money paid for the loan of money, or payment for the use of capital.

Interest is calculated at so much per cent. for a year or other agreed period. Compound interest includes interest on the interest. Net interest is the payment for the money, assuming the capital to be secure; gross interest includes an additional payment for the risk that the capital may be lost, or for other disadvantages in connexion with the transaction.

Interest, as a prime factor in commercial life, came in with the industrial revolution, or perhaps a little earlier. The modern objection to it comes from certain sections of socialist and communist opinion; but it is generally agreed that under existing conditions, at all events, without the existence of interest there would be little capital. See Bank; Land; Moneylender; Usury.

INTERFERENCE. Resultant action of interlacing systems of wave motion, e.g. light, sound, or electro-magnetic waves. When alike in phase the systems tend to augment each other, when opposite in phase they cancel each other. See Light; Sound; Wave; Wireless Telegraphy.

INTERLAKEN. Town and summer resort of Switzerland. On the Aar, between Lakes Thun and Brienz.



Interlaken. View across the town to the snow-capped Jungfrau.

There is a kursaal. Pop. 3,578

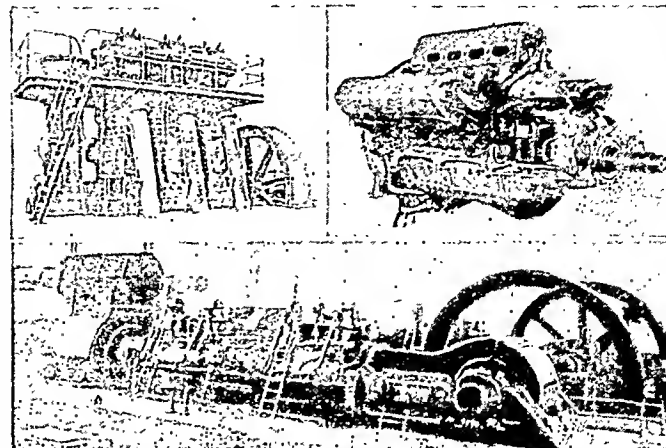
INTERLOCUTOR (Lat. *inter*, between; *loqui*, to speak). Word meaning literally one who takes part in a conversation. In Scots law, an interlocutor is an interim judgement before the final decision. In English law, interlocutory proceedings are proceedings between the commencement of an action and the trial thereof.

INTERMEZZO (Ital.). In music, an interlude or entr'acte. The term is applied either (a) to an instrumental piece designed to fill up time, or (b) to an independent composition of small dimensions. Originally it designated a dramatic piece played between the acts of a more serious drama or opera. See Ballet; Opera.

INTERNAL COMBUSTION ENGINE. Engine in which the fuel, in gaseous form, is introduced as part of the working fluid along with air into the power cylinder, wherein the full heat of combustion is imparted directly to the working fluid.

As compared with the steam engine, the internal combustion engine occupies less room, is more quickly got into action and, proportionately to the total weight of engine, accessories and fuel, it can be made to give

out far more power over a long period. To these facts are due the development of the motor car and the evolution of flying machines.



Internal Combustion Engine. Galloway horizontal twin-cylinder gas engine, developing 3,000 B.H.P. Top left, Diesel oil engine, large vertical type. Right, Napier aeroplane engine (over 1,000 h.p.) as fitted to the Gloster-Napier VI racing seaplane. Courtesy of D. Napier & Son, and Galloways Ltd.

GAS ENGINES These are of two main types, those employing the Otto, or four-stroke cycle, and those in which there is a power stroke every revolution—the Clerk or two-stroke cycle. They range from small power plants of one or two h.p. up to gigantic engines with a hundred-ton fly-wheel and a rating of 3,000 h.p.

The movements in the four-stroke type are as follows. The descending piston draws in a charge of gas (suction stroke); on its return the piston compresses the charge (compression stroke); the charge is ignited, usually by an electric spark, and the resulting explosion impels the piston downwards (power stroke); the return of the piston drives out the burnt gases (exhaust stroke).

In the two-stroke engine every forward stroke of the piston is a power stroke. The engine introduced by Clerk, in 1866, employed an auxiliary cylinder, the purpose of which was to draw in and compress the charge, and to sweep out the burnt gases from the power cylinder by a blast of air. The Fullagar and Oechelhäuser gas engines of today, which utilise a modification of Clerk's principle, embody a cylinder open at each end and having two pistons.

PETROL ENGINES. Gottlieb Daimler introduced a petrol engine in 1883, ignition being effected by means of a red-hot platinum tube. In principle the petrol engine resembles the Otto cycle gas engine. A carburettor is necessary to blend the vaporised petrol with the proportion of air needed to make a suitable explosive mixture. To increase efficiency the explosive mixture may be fed to the engine under pressure, so that a greater amount enters the cylinder. This is known as supercharging.

In two-stroke petrol engines the explosive

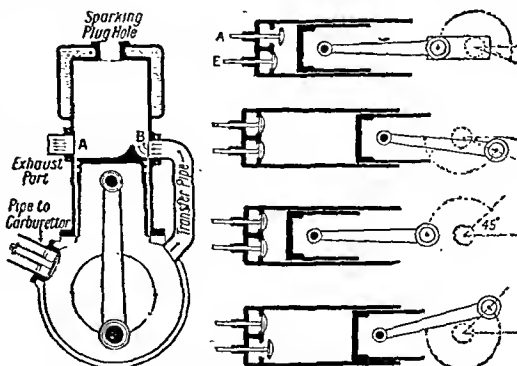
charge enters the crank case and lower part of the cylinder, where it is compressed by the down stroke of the piston, and forced by way of a transfer port into the upper portion of the cylinder above the piston, sweeping out the burnt gases. On the up stroke the charge is compressed and, being ignited by the electric spark, impels the piston downwards. Hence, there is one power stroke every revolution. The majority of motor-car engines work on the four-stroke cycle, and include four, six, or more vertical cylinders with cranks in one plane, in line or opposed in pairs. Some designers mount 8 or 12 cylinders in two sets, at an angle of about

45°, one crank serving a cylinder in each set. Aeroplane engines have 4 to 14 four-stroke cylinders arranged in line or radially round the crank-shaft. In rotating radial engines the cylinders rotate round a fixed crankshaft. Stationary radial engines have non-rotating cylinders set radially round the crankshaft. Cylinder-in-line engines may have a row of vertical cylinders, as in a motor-car engine, two banks of cylinders in V formation, or three banks, the third mounted between the V. Engines of a similar type are used in the fast motor boats built for racing purposes.

The petrol engine has been largely adopted for open pleasure boats, life-boats, etc. For decked-in craft, engines burning paraffin or heavy fuel-oil are more general. Other applications of the petrol engine are for the many purposes where a small stationary engine is needed, e.g. for agricultural, dairy, pumping, or lighting plants.

HEAVY OIL ENGINES. In engines using heavy oils the fuel must be vaporised either in the cylinder or outside it. The oil is usually forced under pressure through a spraying nozzle, mixed with hot air, and the charge is exploded in the cylinder by an electric spark. In compression-ignition engines (e.g. the Diesel, q.v.), the oil is injected into the combustion chamber at about the end of the compression stroke, and is spontaneously ignited by the intense heat generated by compression of the air in the cylinder. See Gas Engine, etc.

INTERNATIONAL. The Socialist organization. The name, more particularly applied



Internal Combustion Engine. Left, 2-stroke engine. The charge compressed in crank case during down stroke of piston enters the cylinder through port B and drives out exhaust gases at A. Right, diagram illustrating phases of a 4-stroke cycle. Open valve A shown in position of maximum opening. E, closed valve. Dotted circular lines indicate duration of phase ending at black spot. From top to bottom, suction, compression, power, and exhaust strokes.

to a series of congresses composed of socialists of most countries of the world, was first given to the international association of workers, 1866-72, which broke up over the

problem of direct action. The second international, intended to unite socialist and trade union activities, took shape in 1882. It is governed by its congresses, held about every third year, and secured the adherence of the moderate sections of most of the nations, including the British labour party. The third or Moscow international aimed at bringing about a world revolution. See Bolshevism; Labour; Lenin; Marx, Karl; Socialism; Vandervelde, Emile.

INTERNATIONAL LAW. The body of rules and customs regarded by the society of civilized states as binding upon them in their relations with one another. Its sources are custom and treaties. International codes are as old as the Indian code of Manu, about 500 B.C.; but in the modern world the publication, in 1625, of the *De Jure belli et pacis*, by Hugo Grotius, won for its author the title of father of international law. The progress of international law is to be traced in agreements between nations regarding the slave trade, the white slave traffic, traffic in drugs, and the Red Cross movement; and is marked by congresses and conferences such as those at The Hague, Versailles, Berlin, and London: and by systematic codification of rules generally agreed to by states acting in unison.

With regard to war, it has been agreed that no injury should be done to peaceable individuals who do not participate in belligerent operations, and that the principle of humanity must be respected. International law was trodden upon in the Great War, but it could not be crushed. To-day it is largely concerning itself with the regulation of the use of aircraft; submarines; declaration of war zones; layings of mines on the high seas; changes in the laws of blockade, contraband, and government control of materials and supplies; the sequestration of enemy property; changes in the doctrine of continuous voyage and transport; the doctrine of merchantmen; regulation of reprisals, etc.

The new law of war must avoid the assumption that war is an affair between governments, armies, and navies, and not between populations in general. Finally, a more effective international arrangement will be indispensable for ensuring the observance of international law, including treaty obligations.

The Institute of International Law is a society founded in 1873 for the study of international law. It consists of members and associates, the number of each being limited to 60, and jurists of all nations are eligible for membership. No nation is allowed to have more than one-fifth of the members.

Consult History of the Law of Nations, T. A. Walker, 1899; International Law, W. E. Hall, 7th ed. 1917; International Law, Sir F. E. Smith, 5th ed. 1918.

INTERNMENT (Lat. *internus*, interior, within). Name given to a military and civil operation during war. Troops of belligerents entering neutral territory are compelled to disarm and to remain there until the end of hostilities. They are then said to be interned. Ships of war staying at a neutral port beyond the time required for coaling or carrying out necessary repairs, and enemy merchant shipping remaining in the harbours of another belligerent nation after the declaration of war, are also interned. See Alien; Blockade.

INTERPLEADER (Lat. *inter*, between; Fr. *plaideur*). English legal term. An interpleader is one who has the custody of goods or money claimed by two or more claimants and makes them fight it out, at the same time declaring his disinterestedness and willingness to hand over the property in question to the successful litigant.

INTERROGATORY (Lat. *interrogare*, to ask). Term of English law. In a civil

action in any English court of law or equity either party can, before the trial, obtain permission to put questions in writing which the other party must answer on oath. The questions must be strictly relevant to the issues in the action as disclosed on the pleadings, and must not be in the nature of cross-examination. It is the duty of the master and judge in chambers to see that interrogatories are not prolix or oppressive.

INTERTYPE. Machine for mechanically setting up words into type. Its basic principle is the same as the Linotype. It is the result of evolution since 1886, when the first similar machine was designed to eliminate the laborious picking up by hand of single letters of type out of little boxes in wooden trays. It is manipulated, as all type-setting machines are, on the typewriter principle—with a keyboard. See Linotype; Monotype.

INTESTACY (Lat. *in*, not; *testari*, to make a will). Dying without leaving a will. English law divides property into two main classes, real and personal; and until 1925 the descent of these two classes on intestacy was governed by entirely different rules. The legislation of 1925, however, abolished all distinctions between the two kinds of property as regards their disposal on the death of an intestate owner.

The most striking changes made by the Act of 1925, apart from the abolition of the distinction between real and personal property, are that the ancient rule of primogeniture disappears; that no advantage is now given to males over females; and that distant relations are excluded altogether.

The following shows the working of the law as regards the estates of an intestate.

If the deceased leaves a husband or wife. Husband or wife takes: (1) All the personal chattels absolutely (furniture, pictures, plate, jewelry, etc.); (2) £1,000 free of death duties, with interest at five per cent. from the date of death; (3) If the deceased leaves issue, the income from half the residue for life; (4) If the deceased leaves no issue, the income from the whole of the residue for life. Subject to the above rights of the surviving husband or wife, the whole of the residue is held on trust for the children of the deceased. If the intestate leaves no issue, then, subject again to the rights of the surviving spouse, the residue goes in equal shares to his father and mother absolutely, or all to the survivor if only one is alive.

If the deceased leaves neither issue nor parent, then the residue is held on trust for the deceased's brothers and sisters of the whole blood in equal shares; failing such, for the brothers and sisters of the half-blood; failing such, for the grandparents in equal shares; failing such, for the uncles and aunts of the whole blood; failing such, for the uncles and aunts of the half-blood, and, finally, failing such, for the surviving husband or wife of the deceased intestate absolutely.

Should it be found that none of the above relations is living, then the whole of the residue goes to the crown, but the crown may make provision for any dependants of the deceased who by his death are left unprovided for, whether such are relations or not. See Will.

INTESTINE (Lat. *pl. intestina*). Part of the alimentary canal. In the human species the intestines are divided into the small intestine, consisting of the duodenum, the jejunum, and the ileum; and the large intestine, consisting of the caecum, the colon, and the rectum.

The intestines provide a place for the continuation of the digestive processes begun in the stomach and continued by the secretions of the intestinal glands and other organs which are poured into the canal; and also provide

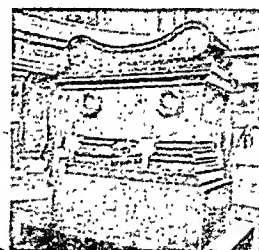
for the absorption of nutritive material from the food as it passes through—a process assisted by the large surface area of the mucous membrane; and for the discharge of waste material and undigested food from the body. See Appendicitis; Colic; Colitis; Dysentery; Dyspepsia; Hernia.

INTROIT (Lat. *introitus*, entrance). Portion of a psalm or an antiphon sung at the beginning of the mass. It varies with the seasons and festivals of the ecclesiastical year. In the Church of England the word is employed to describe the psalm or hymn sung by the clergy as they enter the chancel before the Communion service. See Mass.

INTROMISSION (Lat. *intro*, within; *mittere*, to send). In Scots law, the term applied to interference or dealing with the property of another. It is either lawful, as when a collector acts on a judgement from a court; or it is vicious, as when someone not duly appointed executor deals with the estate of a deceased person. In such a case the intromitter incurs legal liability.

INTUSSUSCEPTION (Lat. *intus*, within; *suscipere*, to take up). Medical term for the protrusion of one part of the intestine into another. The condition occurs most frequently in infants under two years of age. The normal position of the bowel may sometimes be restored by inflating the intestine with air or injecting an enema in warm water or oil. If these measures fail to effect a remedy, immediate operative treatment is necessary. See Intestine.

INVALIDES, HÔTEL DES French institution for wounded soldiers. Established by Louis XIV in 1670, the building was erected at the N.W. of the Champ de Mars, Paris. Napoleon re-endowed the institution in



Hôtel des Invalides, Paris, containing Napoleon's sarcophagus (above)

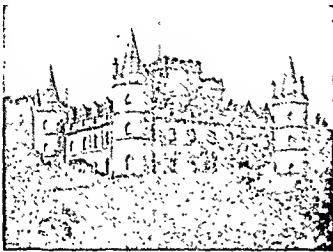
1811. The hôtel contains a magnificent collection of armour and weapons, and a comprehensive Napoleonic collection. At the rear is the dome, built in 1693 for a royal mausoleum. The remains of Napoleon were deposited here in a porphyry sarcophagus in 1861. See Paris.

INVAR. Important alloy of nickel, steel, and carbon. It is remarkable for its low coefficient of expansion under heat, and for that reason is almost universally used in the making of wires and metal tapes employed in measurement. Invar alloy is also used in the making of pendulums.

INVENTORY (Lat. *invenire*, to come upon). Term used in English law and business for a detailed list of goods and chattels. Such a list is commonly made out by an executor or administrator, and is also attached to a bill of sale to identify the goods and chattels which are mortgaged thereby.

A tax formerly charged in Scotland on the personal or movable property of a deceased person was known as an inventory duty. It was abolished for all persons dying after Aug. 2, 1894, and replaced by estate duties.

INVERARAY. Burgh and county town of Argyllshire, Scotland. It stands on a small bay of Loch Fyne, where the Aray enters it, about 40 m. from Glasgow, in a district famed for the beauty and variety of its trees. It was founded by a Campbell on the opposite side of the bay. There is an old and beautiful market cross, as well as a memorial to the Campbells who were hanged for their share in the rising of 1685. Outside the town is Inveraray Castle, seat of the duke of Argyll, with beautiful grounds. Pop. 490



Inveraray Castle, seat of the duke of Argyll, from the east

INVERCARGILL. Town of New Zealand. It stands on the New River estuary, 140 m. by rly S.W. of Dunedin and 17 m. from Bluff Harbour. The centre of agricultural and pastoral country, it has flour and saw mills, foundries, potteries, woollen mills, and meat preserving establishments. Pop. 22,910.

INVERCLYDE, BARON. Title borne by the family of Burns since 1897. John Burns (d. 1901), son of Sir George Burns, became associated with the Cunard Steamship Co., and when the original partners retired he became head of the firm. In addition he developed the steamship service between Glasgow and Ireland. He was created a peer in 1897. He was the author of *The Adaptation of Merchant Steamships for War Purposes*, and other works. The 4th baron (h. 1897) married in 1929 June, the well-known actress. The family seat is Castle Wemyss, near Wemyss Bay. See Cunard, S.

INVERELL. Town of Gough co., New South Wales. It is 341 m. by rly N. of Sydney, and is a mining centre, diamonds, copper, silver, tin, and coal being obtained in the neighbourhood. Pop. 4,560.

INVERESK. Village of Midlothian. It is on the Esk, 6½ m. from Edinburgh, with a station on the L.N.E.R. The chief industry is the manufacture of paper. Pop. 500.

INVERGORDON. Burgh and seaport of Ross and Cromarty Scotland. It stands on the N. shore of Cromarty Firth, 13 m. N.E. of Dingwall, on the LMS Rly. It was a naval base in the Great War. The castle, long the residence of the Macleods of Cadboll, was burned down in 1800 and rebuilt in 1874. Pop. 1,717.

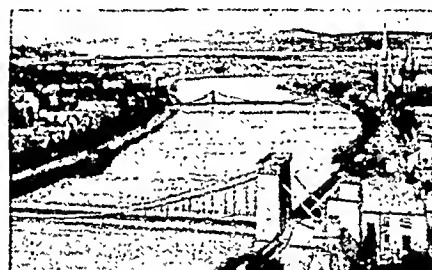
INVERKEITHING. Burgh of Fifeshire, Scotland. It stands on a bay on the N. side of the Firth of Forth, 13 m. from Edinburgh, on the L.N.E. Rly. It is in the Rosyth area, and its industries are mainly connected with the navy. The battle of Inverkeithing, fought about 2 m. from the town, took place on July 20, 1650. Cromwell's troops defeating the Scottish adherents of Charles II. Pop. 3,350. See Rosyth.

INVERLOCHY. Village of Inverness-shire, Scotland. On the Lochy near where it enters Loch Linnhe, 1 m. N.E. of Fort William, it is the site of a town for the men employed on the Lochaber water power scheme. Near

the village is a ruined castle. Here, Feb. 2, 1645, the marquess of Montrose defeated the Campbells. The battle is described in Scott's *The Legend of Montrose*.

INVERNESS. Burgh of Inverness-shire, Scotland. It is also the county town, a seaport and a market town, and is regarded as the capital of the Highlands. It stands on both banks of the Ness, near where that river enters the Moray Firth, 100 m. from Aberdeen on the LMS and L.N.E. Rlys. and near the Caledonian Canal.

The buildings include the episcopal cathedral of S. Andrew, the town hall, and the 19th century castle on Castle Hill, containing the county offices. The mercat cross is near the town hall, as is the old stone of the tubs, on which water carriers used to rest their tubs. A cemetery stands on the hill of Tomnahurich. Inverness is the headquarters of the Highland Rly. (L.M.S.), which has its shops here. Other industries are distilling, and the manufacture of woollens, etc.



Inverness. The town and river Ness from the castle. The Northern Athletic Meeting is held here in September (see illus. p. 333). Market days, Tues. and Fri. Pop. 20,909.

INVERNESS-SHIRE. County of Scotland. It is bounded N. by Ross and Cromarty and S. by Perthshire and Argyllshire. Its area is 4,211 sq. m. It comprises the mainland, traversed N.E. to S.W. by Glen More, which contains the Caledonian Canal, and the insular division, embracing Skye,

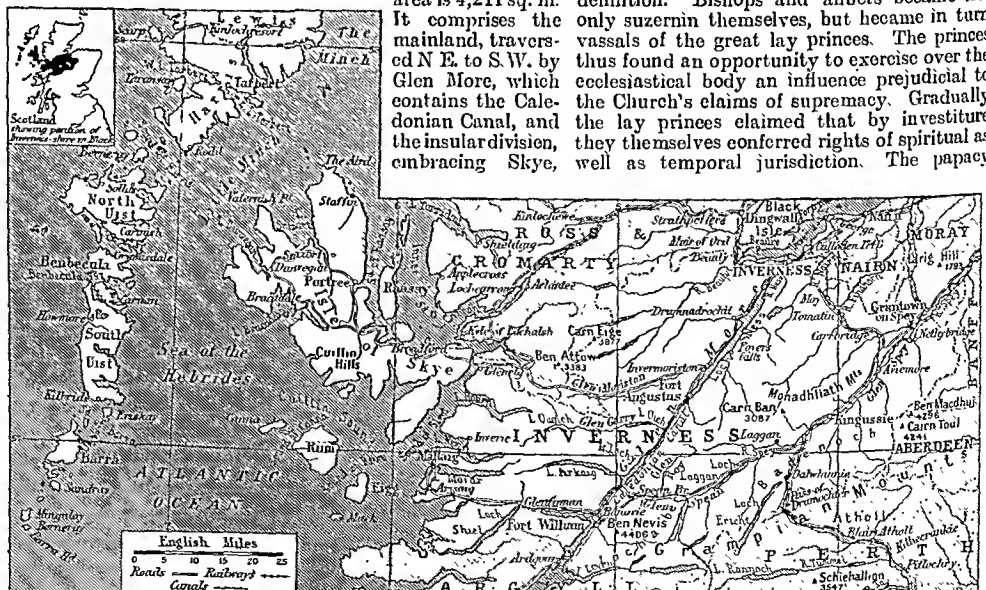
valley and loch scenery is extremely beautiful. The numerous lochs include Ness, Oich, Lochy, Arkraig, and Shiel. In addition to Glen More, the principal valleys are Glen Garry, Glen Moriston, Glen Spey, Glen Span, and Glen Roy (q.v.). The coast is deeply indented by sea-lochs. The chief rivers are the Spey, Ness, and Beaul. There are many deer forests and moors abounding in grouse and other game. The county is served by the L.M.S. Rly. Inverness, the county town, Fort William, and Kingussie are the largest towns. Pop. 76,100

LITERARY ASSOCIATIONS. The shire has figured in many historical romances owing to its associations with Prince Charles Edward. In Scott's poetry, *The Lord of the Isles*, and in his prose, *The Legend of Montrose*, may be specially noted, as well as Burns's lines on the waterfall at Foyers and his song on *The Lovely Lass of Inverness*. The islands inspired the poem, *From the Lone Shieling At Auchnacarrie Lochiel* first displayed the Stuart flag in 1745, and received the warning recorded in T. Campbell's poem.

INVERTEBRATE. Name applied to those classes of the animal kingdom which do not possess the characteristic and essential features of vertebrate or chordate animals. The central nervous system is neither dorsal nor tubular; there is no notochord or backbone; there are no gill-slits in any stage; the eye is usually an outgrowth of the skin, and not of the brain; and there is no ventral heart. The principal classes, proceeding downwards, are molluscs, arthropods, echinoderms, worms, coelenterata, sponges, and protozoa. See Animal.

INVERURIE. Burgh of Aberdeenshire, Scotland. It stands at the junction of the Don and the Urie, 16 m. N.W. of Aberdeen, on the L.N.E. Rly. Here are works of the L.N.E. Rly., and there is a trade in cattle, markets being held here. Pop. 4,455.

INVESTITURE. In feudal custom, the act of installation of a vassal by his superior lord. Round the question of investiture was centred one of the great medieval controversies of Church and State. As the holding of lands by the Church all over W. Europe increased, the precise status of the ecclesiastical holders in the feudal system became more difficult of definition. Bishops and abbots became not only suzerain themselves, but became in turn vassals of the great lay princes. The princes thus found an opportunity to exercise over the ecclesiastical body an influence prejudicial to the Church's claims of supremacy. Gradually the lay princes claimed that by investiture they themselves conferred rights of spiritual as well as temporal jurisdiction. The papacy



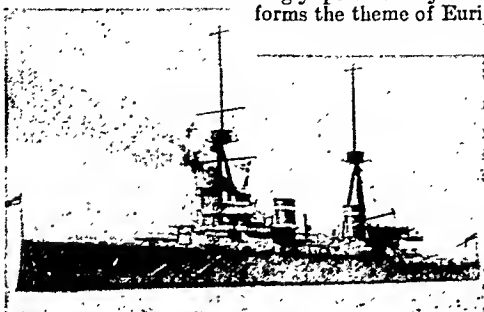
Inverness-shire. Map of the largest county in Scotland, with its outlying islands. The county is traversed by the Caledonian Canal, which saves the passage round the North of Scotland

Harris, Uist, Barra, and other islands. The mainland is highly mountainous and contains Ben Nevis and other heights

The made several efforts to check the resultant corruption, notably by the Lateran decree of 1059, which forbade the interference of laymen.

Pope Gregory VII forbad the emperor Henry IV to grant any ecclesiastical investitures, Feb., 1075. Henry's disobedience brought war, and ultimately his submission at Canossa, Jan. 28, 1077. In England, the rights of investiture were finally renounced by Henry I in 1107. The emperor Henry V renewed the old claims, and a compromise was effected by the concordat of Worms, signed Sept. 8, 1122. See Anselm; Gregory VII; Papacy.

INVINCIBLE. British battle cruiser. Completed in 1908, she was 555 ft. long, 80 ft. in beam, displaced 17,250 tons, and had engines of 45,000 h.p., giving her a speed of 25 knots. She carried eight 12-in. and 16 4-in. guns, and three torpedo tubes. The Indefatigable and the Indomitable were of the same class. She took part in the actions of the Heligoland Bight and the Falkland Islands, and was sunk by enemy gunfire at the battle of Jutland, May 31, 1916, with all hands.



H.M.S. Invincible, British battle-cruiser, completed in 1908 and sunk at the Battle of Jutland
Cribb, Southsea

INVINCIBLES. Name given to an Irish secret society which existed about 1880-85. It consisted of the more violent Fenians. They were responsible for the Phoenix Park (q.v.) murders and for many other crimes and outrages which took place about 1882. See Fenianism.

IO. In Greek mythology, daughter of Inachus, king of Argos. She was beloved of Zeus, who, to protect her from the jealousy of his wife Hera, changed her into a heifer. Hera obtained possession of the heifer, and set the hundred-eyed monster Argus to guard her. Zeus, however, sent Hermes to kill Argus, whereupon Hera sent a gadfly to torment Io. Still in the form of a heifer, she wandered far and wide, until finally she reached the Nile, where she was restored to human form.

IODIDES. Salts of hydriodic acid. Iodides of most of the elements are known. Metallic iodides are obtained either by direct union of iodine with the metal or metallic oxide, or by dissolving the metal in hydriodic acid. All iodides are decomposed, with the formation of iodine, by chlorine and bromine, and on heating strongly alone or with sulphuric acid. Most are employed in medicine, and silver iodide is used in photography.

IODINE. Non-metallic element discovered in 1812 by Courtois of Paris in the mother-liquors of the soda salts obtained from kelp. Its chemical symbol is I; atomic weight 126.93; atomic number 53. Iodine is found widely diffused in nature, but only in small quantities, and seldom in the free state. Combined in the form of iodides (q.v.), iodine is present in nearly all marine animals and plants, and is also found in the human body, particularly in the thyroid gland. The main source of iodine was formerly seaweed, but it is now obtained chiefly from the mother liquors left after refining Chile saltpetre or caliche. Iodine is chiefly employed as an antiseptic in surgery. In various forms it is also used externally for chilblains, ringworm, and glandular swellings.

Iodism is a condition which arises from taking iodides medicinally for too long a period. The patient complains of pain in the forehead, sore throat and running at the nose, and there is often a patchy eruption on the skin. The symptoms disappear when the use of the drug is completely stopped.

IODOFORM or **TRIODOMETHANE** (CHI₃). Lemon-yellow solid, with a persistent saffron-

like odour, prepared by the action of iodine on alcohol in the presence of sodium carbonate. It is employed as an antiseptic in surgery.

IOLAUS. In Greek mythology, the faithful companion and charioteer of Hercules. He assisted the hero in the slaying of the Lernaean Hydra, and helped his children in their fight for the Peloponnese, killing Eurystheus in battle.

ION. In Greek mythology, legendary founder of the Ionian race. He was the son of Apollo by Creusa, wife of Xuthus. On reaching manhood he narrowly escaped being unwittingly poisoned by his mother. The legend forms the theme of Euripides' play, *Ion*.

ION (Gr. ion, going). Term applied by Faraday to the products of electro-chemical decomposition which appear at the electrodes. When an electric current is passed through a solution of hydrochloric acid the electrolyte is decomposed, the hydrogen atoms appearing at the cathode or negative

pole, and the chlorine atoms at the anode or positive pole. The passage of the current consists of a movement of these electrically charged particles or ions. Faraday named the particles moving towards the cathode or negative pole cations, and those moving towards the positive pole he termed anions.

Another use of the term ions is for the electrified particles which under certain conditions endow gases with conductivity. When a gas is subjected to the influence of X-rays or rays from radioactive substances, or when cathode rays are passed through the gas, it acquires increased conductivity, and is then said to be ionised. See Electrolysis; Gas; Cathode; Radioactivity.

IONA or **ICOLMKILL.** Island of Scotland, one of the Inner Hebrides. It is part of the county of Argyll. About 3½ m. long and 1½ m. broad, it covers about 2,200 acres. The village of Iona is on the E. of the island. Here St. Columba landed from Ireland and founded a monastery, 563, from which monks went out to convert the Picts and Scots. Later a Benedictine monastery and nunnery were founded.

In the 9th century Iona was made a bishopric, which was later in the province of Trondhjem, Norway. The cathedral, a 13th century building, was destroyed at the Reformation. In 1899 the 8th duke of Argyll presented the ruins to the Church of Scotland, and, partly restored, the cathedral was reopened in 1905.

IONIA. Ancient district of Asia, so called from having been colonised by Greeks of the Ionian branch of the Hellenic race. The Ionians spoke a dialect distinct from Aeolic and Doric, and the name Ionian was applied to the inhabitants of Attica and Euboea, to the Ionian colonies of Asia Minor, and to offshoots from these. See Greece.

IONIAN ISLANDS. Islands of Greece. In the Ionian Sea, off the W. coast of Greece and S. Albania, they consist of Corfu, Cephalonia, Zante, Leukas (Lepkas) or Santa Maura, Ithaca, and a number of islets, their total area being about 1,100 sq. m. Largely mountainous, they produce grapes, currants, olives, and other fruits, and some of the islands are rich in marble, sulphur, salt, and coal. In 1814 they passed under British protection, and fifty years later they were annexed to Greece. Pop. about 270,000. See Cephalonia; Corfu, etc.

IONIAN MODE. In music, a church mode, beginning on C and only using the natural notes, i.e. the white keys of the pianoforte. The Ionian mode therefore corresponded to the modern major scale.

IONIC ORDER. Second of the three orders in Greek architecture. It is more slender and graceful than the Doric order; the fluting of the column is finer, and its square capital is easily distinguishable from both the Doric and the Corinthian examples by its volutes or spirals. The mouldings of the entablature, also, are more delicate. See Architecture; Corinthian Order; Greek Art.

I.O.U. Form of written acknowledgment of a debt. The letters are an abbreviation of the phrase I owe you. An I.O.U. is not negotiable, but it is evidence of debt, and as such can be sued upon. If it does not contain the name of the person to whom the debt is owed, then the presumption is that the holder of the I.O.U. is the person to whom the money is payable. See Promissory Note.

IOWA. North-central state of the U.S.A. It lies to the W. of the Mississippi river, which forms its eastern frontier. Its area is 56,147 sq. m. The bluffs along the chief rivers are the only relief to an undulating surface. Nearly the entire area is under cultivation. Maize is the chief cereal and hay is produced in abundance. There are valuable coal areas and large slaughtering and meat-packing and butter and cheese making industries. Besides the natural transport facilities of the Mississippi, Missouri, Des Moines, and other rivers, there are more than 10,000 m. of rly. Des Moines is the capital. Pop. 2,428,000.

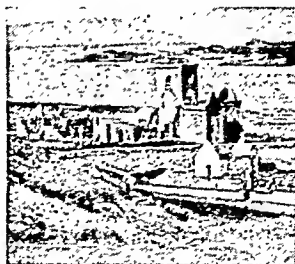
Iowa city stands on the Iowa river, 55 m. W.N.W. of Devonport. It is the seat of the state university, and was the state capital from 1839 to 1857, when it was superseded by Des Moines. Pop. 11,267.

IPECACUANHA (Psychotria ipecacuanha). Brazilian plant, the dried roots of which are used in medicine. The most important constituent is an alkaloid called emetine. Ipecacuanha forms a useful emetic, and is also largely used in the treatment of dysentery. The chief preparations are the liquid extract; the vinum ipecacuanhae; and the compound pill with squill. Ipecacuanha is also a constituent of Dover's powder.



Ipecacuanha, an important Brazilian medicinal herb

IPHIGENIA (Gr. Iphigeneia). In Greek legend, the daughter of Agamemnon and Clytaemnestra. When the Greek fleet destined for Troy was detained at Aulis by a calm sent by Artemis, who had been offended because Agamemnon had killed a stag sacred to her, Calchas, the soothsayer, declared that Agamemnon must sacrifice his daughter to appease the wrath of the goddess. Iphigenia was sent for, under the pretext that she was



Iona. The cathedral, a 13th cent. edifice restored in 1905

to be married to Achilles; but at the moment when the sacrifice was about to take place, Artemis bore her off to the country of the Tauri, where she became a priestess. The story of Iphigenia is the subject of plays by Euripides and Racine. Pron. I-phij-eh-ah.

IPSWICH. City, county borough, seaport, market town, and county town of Suffolk. It stands where the Gipping becomes the Orwell, 69 m from London, and is served by the L.N.E. Rly. Its churches include S. Margaret's, with a fine hammer-beam roof; and S. Peter's, with a Norman font. There are technical, art, and other schools. Wolsey's Gateway, built by the cardinal, is a reminder of the great college he planned and began here. Sparrowe's House dates from 1567. Christchurch park mansion houses a museum and art gallery. The Great White Horse Hotel figures in The Pickwick Papers. In 1928 Chantry Park was given to the city for an open space. On Castle Hill the site of a Roman villa has been excavated. A crematorium was opened at Ipswich in 1928.

The city is an engineering centre, agricultural implements, railway wagons, and similar articles being made. There is a port with docks covering about 30 acres. In 1914, with Bury St. Edmunds, it was made the see of a bishop. Ipswich has adopted the French villages of Bazentin-le-Grand, Bazentin-le-Petit, and Fricourt. Market days, Tuks. and Sat. Pop. 85,990.

IPSWICH. Town of Queensland. It stands on the Bremer river, 24 m. by rly. S.W. of Brisbane. It has rly. works and there are coal mines in the vicinity. It also manufactures woollen goods, and has a large trade in agricultural produce. Pop. 23,000.

IQUIQUE. Seaport of Chile. On the coast, 40 m. by rly. W. of Tarapacá, it is an important nitrate port. There are rly. shops and soap and boot factories. The city is the outlet for the famous mines of the interior. The silver mines of Huantajaya lie to the N. The chief exports besides nitrates are silver, copper ore, borax, and iodine. Pop. 36,827. Pron. Ee-ke-kay.

IRAN OR ERAN. Official name for Persia. It is also the old name of the great plateau of Central Asia, the land between the Caucasus, the Hindu Kush, the Persian Gulf, Kurdistan, and the Tigris.

Iranian is a branch of the Aryan sub-family of Indo-European languages, the other branch being the Indo-Aryan. Iranian includes Zend, the language of the Avesta, and Old Persian. This passed through Middle Persian (Pahlavi) into New Persian. The Iranian-speaking peoples embrace the long-headed Persian and Pathan, and the round-headed Tajik. Originally herdsmen, they absorbed Aryan agriculture and religion, which have long since been overlaid by Mahomedanism. See Aryan; Ethnology; Pathan.

IRAQ OR IRAK. State of Asia, formerly included in Mesopotamia. It consists of the three vilayets of Bagdad, Basra, and Mosul. Bagdad is the capital; Basra the chief port. The government is carried on by a king and a cabinet, who are responsible to a parliament of two houses. Its area is 143,250 sq. m.; pop. 2,849,282.

Conquered from the Turks during the Great War, Iraq was in 1919 declared a mandatory state, and the mandate was given to Great Britain. In 1921 Feisal, a son of the king of the Hcjaz, was elected king by the votes of the people, and in 1922 the state entered

into treaty relations with Great Britain. In 1926 the frontier between Iraq and Turkey was fixed. In Dec., 1927, Great Britain formally recognized Iraq as an independent state, and in 1930 a treaty embodying this was signed. It will take effect when Iraq is admitted to the League of Nations.

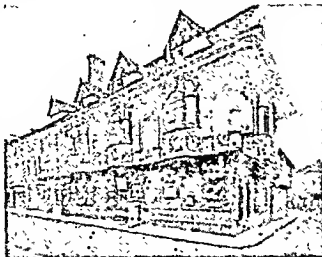
The potentialities of the country are great. Oil exists in large quantities, and the Anglo-Persian and other companies are operating here. Cotton, wheat, barley, and dates are grown, but agricultural success depends on the development of irrigation. There is a railway line from Basra to Bagdad, and other lines are in operation. Bagdad is an important station on the air route from Europe to India. The unit of currency is the gold dinar, equal in value to half a sovereign in sterling. See Feisal; Mesopotamia.

IRAWADI OR IRAWADDY (nnc. Eriavati—the great river). River of S.E. Asia. It rises in N.E. Assam, and traverses Burma from N. to S., discharging into the Bay of Bengal by a delta of several months, W. of Rangoon. The delta has an area of some 20,000 sq. m. The chief tributary is the Chindwin. About 900 m. in length, the Irawadi is of great importance for irrigation and as a trade channel. It is

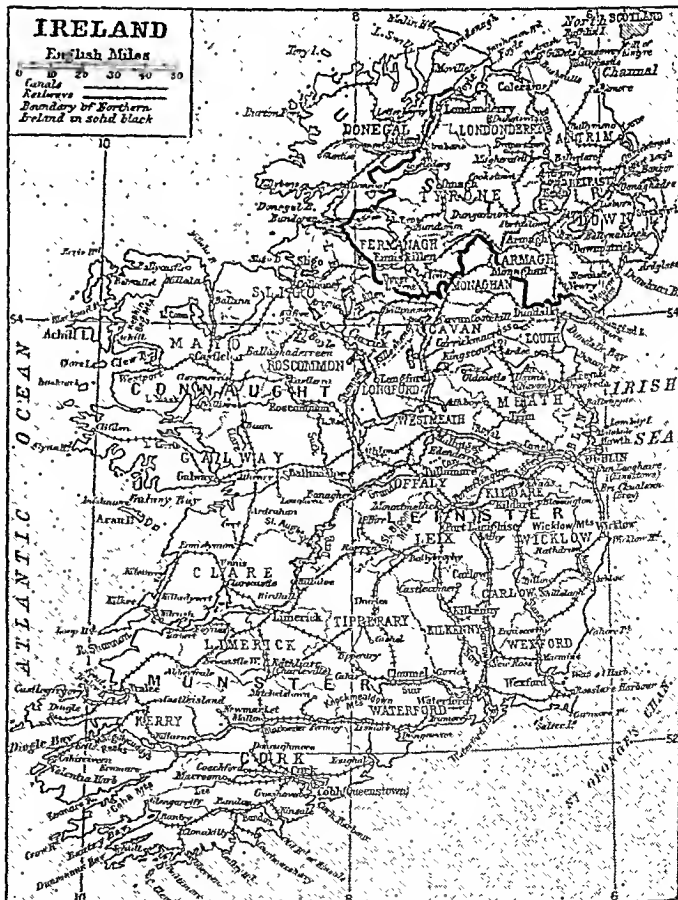
The people depend largely on agriculture. The chief crop is oats, grown most extensively in the N.E., where flax is almost equally important. About one-tenth of the arable land is still devoted to potato culture, while lily is grown on nearly half. Dairying, largely for butter, and the attendant pig-rearing on dairy by-products, as well as cattle, sheep and horse breeding, are important industries. The co-operative movement is well developed, especially in dairy farming. The great manufacturing industries are linen and shipbuilding, both centred in Belfast. Brewing is carried on chiefly at Dublin, Belfast, and Cork, and bacon curing at Limerick, Cork, Waterford, and Dublin. The fisheries are important. Increasing attention is being given to harnessing the power of the rivers, and there are large works for obtaining power from the Shannon.

There are over 3,000 m. of rly. track, of which nearly 800 are in Northern Ireland. In 1924 the Irish Free State passed a measure for amalgamating the rlys. Leaving alone the Gt. Northern as a line largely in Northern Ireland, the others were all combined into one, the Gt. Southern Rlys. In Northern Ireland the separate companies remain, save that one, the Northern Counties Committee, is part of the L.M.S. system. Ireland has 650 m. of inland waterways, which are mostly in the Irish Free State.

The Bank of Ireland is the state bank of the Irish Free State. It was established in



Ipswich. Sparrowe's House in the Buttermarket, built in 1567



Ireland. Fuller topographical details of this country will be found in the larger scale maps which are given under the headings of the respective counties

1783, and acts for the Free State much as the Bank of England does for England. Its headquarters are in the building on College Green, Dublin, which was once the Irish Houses of Parliament.

HISTORY. The early inhabitants of Ireland were of neolithic race and were called by the native historians Fir Bolg and Erainn, from which is derived the name, Erin. About 300 B.C. a blonde Aryan race who called themselves Gaedhil entered Ireland, conquered the whole of it, and imposed their Celtic speech upon it. The country was divided into a number of kingdoms, all under the supreme authority of a high king.

In 1154 the pope gave Henry II power to conquer Ireland, and soon English warriors entered the country. The Irish kings accepted Henry as their overlord, and a period of English domination began. Vast tracts of land were granted to English settlers, English law was introduced, and towns were founded. Somewhat later a parliament was established.

In 1494 Poyning's law made the Irish parliament definitely subservient to the English, and in 1541 Henry VIII was recognized as king of Ireland, instead of the former title of lord. In his reign religion raised the first serious breach between England and Ireland. The bulk of the Irish remained Roman Catholic, and in the reign of Elizabeth broke out into a fierce insurrection, due partly to the policy of confiscating the lands of the Irish.

During the early years of the Stuart period Ireland was in a fairly prosperous and contented condition. The settlement of Ulster with Scottish settlers was, however, resented, and this led to a rebellion in 1640. After 1649 Cromwell again made the English dominion effective, but at a high price in bitter memories. James II found a good deal of support in Ireland in his struggle with William III, and the events of his time divided, much more sharply than ever before, Protestant Ulster from the rest of the country.

The settlement that followed the defeat of James II placed the Roman Catholics in a position of inferiority which lasted for about a century. They had no share in the government, and their disabilities were many and serious. The commercial policy of Great Britain crippled the trade and industry of Ireland. With the American War came hopes of freedom, and after an agitation the country was granted legislative independence and the Roman Catholics were given the right to vote. Parliament, however, was still closed to them. In 1798 came the rising put down at Vinegar Hill, and in 1800 the parliament of Ireland was united with that of Great Britain.

The agitation led by Daniel O'Connell did not bring about a repeal of the union, but Roman Catholic emancipation was secured. The outbreak of a terrible famine in 1845 diverted attention from political questions, and when it ended death and emigration had seriously reduced the population. The land question was the next bone of contention. The grants of land to English settlers had created a difficult problem in a country where land hunger was strong, and the British Government therefore spent many millions in buying the land from the landlords and selling it on easy terms to the peasantry. In this way the wealth of Ireland was increased, but its discontent was by no means allayed. The republicans, now called Fenians, attempted one or two armed risings, but more serious were a series of outrages which culminated in the Phoenix Park murders of 1882.

About 1870, led by Isaac Butt and then by C. S. Parnell, some Irish members of parliament formed themselves into a home rule party seeking to obtain some measure of independence by constitutional means.

Early in the 20th cent. a new party called Sinn Féin arose, and this demanded complete independence for Ireland. In 1916 it was responsible for a rising in Dublin, and in 1918 it secured the return of 73 members to Parliament; refusing to take their seats, these formed themselves into a national

assembly and proclaimed a republic. For some time a great part of the land was in a state of civil war, in the midst of which an Act was passed giving self-government to both parts of Ireland. Northern Ireland accepted the measure, but the Sinn Féiners refused to do so, and with even greater brutalities the war was continued. At length a settlement was reached by a treaty signed on Dec. 6, 1921, and the republicans secured almost all their demands. See Fenianism; Home Rule; Irish Free State; Northern Ireland; Sinn Féin.

IRENAEUS (c. 120-202). Saint and bishop of Lyons. Supposed to have been born at Smyrna, he went to France, became a priest at Lyons, and succeeded Pothinus in the bishopric in 177. He preached Christianity, and helped to settle the dispute between the bishop of Rome and the Asiatic Churches concerning the date of Easter. He is said to have been martyred under Severus.

IRÈNĒ (Gr. Eirēnē). In Greek mythology, the goddess of Peace, daughter of Zeus and Themis. She was worshipped by the Romans under the name of Pax. Pron. I-ree-nee.

IRENE (752-803). East Roman empress, 797-803. After the death of her husband Leo IV in 780 she acted as regent for their son Constantine VI. Irene was a strong anti-iconoclast, and at the council of Nicaea, 787, the worship of images was restored. When Constantine rebelled she had his eyes put out, and for five years reigned alone.

IRETON, HENRY (1611-51). English soldier. Born at Attenborough, near Nottingham, he joined the parliamentary forces in the Civil War and was soon associated with Cromwell in Lincolnshire. He was at Marston Moor, Newbury, and Naseby. In Parliament Ireton drafted the Heads of the Proposals and strove to reunite the moderate men of both parties. When this failed he took an active part in the renewal of the Civil War, and was one of the



Henry Ireton,
English soldier

king's judges, signing the death warrant. In 1650 Ireton was left by Cromwell as lord deputy in Ireland, and there he died of the plague, Nov. 26, 1651. Ireton married Cromwell's daughter, Bridget.

IRIDIUM. Metallic element. Its chemical symbol is Ir; atomic weight 193.1; atomic number 77; specific gravity 22.40; and melting point approximately 2,000° C. It is obtained chiefly as a by-product of the refining of platinum, in which it is combined with osmium. Iridium is a bright, white metal, having the appearance of steel, extraordinarily hard, and resistant to all kinds of atmospheric or chemical influences. It is used for the tips of the gold nibs of fountain pens. See Osmium; Platinum.

IRIS (Gr. rainbow). In Greek mythology, the messenger of the gods, more especially of Hera, and the personification of the rainbow.

Iris is the name of one of the asteroids, seventh in order of discovery. It was first observed by Hind in 1847. See Asteroid.

IRIS. Large genus of perennial herbs often referred to as flags. Of the two sections, gardeners regard the rhizomatous section as flags and the bulbous section as irises. The latter are separated into English irises and Spanish irises; but no bulbous iris is a native of Britain. The common flag of our gardens with purple flowers is *Iris germanica* from Central and S. Europe, introduced as far back as 1573. The Florentine flag (*I. florentina*), with delicate lavender-tinted flowers, furnishes the orris-root of the druggist and perfumer. The golden flag (*I. aurea*) comes from the W. Himalayas. See Flag.

IRIS. Membrane surrounding the pupil of the eye. It has the power of contracting or enlarging in order to regulate the amount of light which enters the eye. Iritis, or inflammation of the iris, may be acute or chronic. The condition may follow an injury to the eye, but is most frequently due to tuberculosis, syphilis, and other infectious diseases.

IRIS. British steamer. A Liverpool ferry steamer, she was commandeered by the navy in the Great War. With the Daffodil she won fame in the attack upon Zeebrugge Mole, April 23, 1918. See Zeebrugge.

IRISH FREE STATE. Self-governing dominion of the British Empire. The Free State covers the whole of Ireland except six counties in the north-east, which form Northern Ireland. Dublin is the capital. The area is 26,600 sq. m. and the pop. 2,971,992, of whom 300,000 live in the three Ulster counties, Cavan, Donegal, and Monaghan. Irish is the national language, but English is officially recognized. The Free State is a member of the League of Nations and as a British dominion is represented at the Imperial Conference.



Arms of the Irish
Free State

The constitution, which was drawn up and accepted in 1922, provides for government by the king, who is represented by a governor-general, and a parliament of two houses. The Senate (Seanad Éireann) consists of 60 members, who are elected for nine years by members of the two houses voting on the principle of proportional representation. Twenty senators are chosen in this way every three years. The first senate was nominated by the elected chamber and the president. The senate has no power over money bills, and only a power of delay over other legislation.

The elected assembly, called Dail Éireann, is chosen for six years or less. The members are elected by all adults on the principle of proportional representation, and their number varies. In 1930 it was 153. The executive duties are directed by a council or cabinet, which must not exceed 12 members. Its head is the president, who is elected by the Dail.

In local matters the administration is very much the same as it was before 1922, although certain changes have been made. There are 27 administrative counties, each with a council. At the head of the legal system is the Supreme Court. A defence force is maintained.

HISTORY. When after the treaty of 1921, the British authorities ceased to function in Ireland the affairs of the Free State were taken over by a provisional government in which the chief spirits were Arthur Griffith and Michael Collins. The republicans under De Valera took up arms, and for a time there was serious disorder almost all over the country, in the midst of which Griffith died and Collins was shot. W. T. Cosgrave was then elected president, but a year of warfare passed before peace was in sight. Meanwhile, T. M. Healy had taken office as the first governor-general.

In Aug., 1923, the first general election under the new constitution, which had by now been approved, was held. Cosgrave's government obtained 63 seats and the republicans 44, the others going to independents and parties representing labour and agriculture. The republican deputies did not sit in the Dail, as they refused to take the oath of allegiance.

With the revolution stamped out, the condition of the country improved and the government could carry out certain reforms. An Act reformed the administration of poor relief and provided for new measures to safeguard and improve the public health. The courts of justice were remodelled. Certain

taxes were reduced, other revenue being raised by tariffs making the Free State a protectionist country.

In 1927 there were two general elections. One held in June proved so unsatisfactory to the government that President Cosgrave had to choose between resignation and another appeal to the country. In September the second election took place. Cosgrave's friends secured 61 seats, and the supporters of De Valera 57. As these now took the oath of allegiance, it was only by the aid of the independent members that Mr. Cosgrave was able to secure a working majority in the Dail.

In 1928 James McNeill succeeded T. M. Healy as governor-general. The most important piece of legislation was a measure altering the method of electing senators and abrogating the right to use the initiative and the referendum. A strict censorship of publications was established and a new coinage introduced. In 1929 some difficulty was caused by the reluctance of the Irish government to recognize the right of appeal to the Judicial Committee of the Privy Council. In 1930 a Legion of Honour was established. See Ireland.

IRISH GUARDS. Regiment raised in April, 1900, to commemorate the bravery shown by the Irish regiments in the S. African War. In the Great War, their first campaign, the Irish Guards fought at Mons, Le Catcau, and in the first battle of the Aisne. At the first battle of Ypres they stood firm in several critical days, and, with the Coldstreamers, regained the trenches captured by the Germans at Quinchy in Feb., 1915. It was on this occasion that Michael O'Leary won the V.C. The Irish Guards distinguished themselves at Loos, Sept., 1915, on the Somme, 1916, at Ypres and Cambrai, 1917, and in 1918. See Guards.



Irish Guards badge

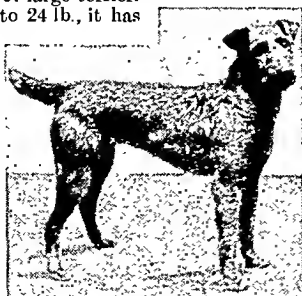
IRISH MOSS (*Chondrus crispus*). Small seaweed of the order Rhodophyceae. It grows on rocks about low-water mark. The frond is flat, thick, and cartilaginous, repeatedly forking in one plane, varying in colour from greenish-white to dull purple. Under the name of carrageen dry fronds of this moss were formerly prescribed for invalids.



Irish Moss. Frond of the edible seaweed

IRISH SEA. Shallow sea separating the E. of Ireland from the S.W. of Scotland and the W. of England and Wales. It is connected with the Atlantic Ocean by the North Channel on the N. and S. George's Channel on the S. Its extreme breadth is 150 m.

IRISH TERRIER. Breed of large terrier. Ranging in weight from 18 lb. to 24 lb., it has a rough wiry coat, and in general build resembles the fox terrier, but is reddish brown in colour. It is exceedingly courageous, faithful, and affectionate, and few dogs show more enthusiasm for hunting. The Irish terrier originated in a cross between the fox terrier and one or more of the rough-coated breeds, and first appeared about 1870.



Irish Terrier. A breed introduced about 1870

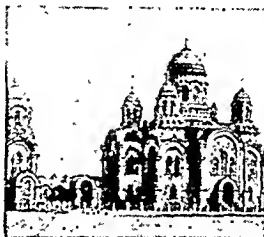
IRISH WOLFHOUND. Breed of hunting dogs. One of the largest varieties of dog used in the chase, it stands about 32 ins. high at the shoulder and weighs about 120 lb. Somewhat resembling a

very large, heavily built, and rough coated deerhound, it is believed to have existed in Ireland from a very early period. Early in the 19th century the original breed, in anything like a pure strain, had become extinct, and its revival is the result of scientific selection in crossing.

IRKUTSK. Town of the Union of Socialist Soviet Republics, in the Siberian area. It stands on the right bank of the Angara. A station on the Siberian rly. it has a gold foundry, through which all the metal found in E. Siberia passes. A commercial centre, a large trade is carried on in tea and furs. It has a university. Pop. 98,979. See Russia; Siberia; also illus. below.

IRLAM. Urban district of Lancashire. It stands on the Manchester Ship Canal, at the junction of the Irwell and Mersey, 8 m. S.W. of Manchester.

It is served by the Cheshire Lines and L.N.E. Rlys. By an alteration of the boundary between Lancashire and Cheshire, carried out in 1920, parts of the townships of Partington and Carrington were transferred from Cheshire to Lancashire and made part of Irlam. Pop. 12,500.



Irkutsk. The five-domed cathedral and, left, the belfry

IRON. Elementary metal, chemical symbol Fe (Lat. ferrum), atomic weight 55.84, atomic number 26, specific gravity 7.86, and melting-point 1,505° C. Pure, it is silver or greyish white in colour; it is soft and malleable, easily magnetised, but does not retain its magnetism. In moist air, in the presence of carbonic acid gas, it rusts or oxidises quickly; dissolves readily in most acids; and combines easily with arsenic, phosphorus, and sulphur, forming compounds more readily fusible than the metal. It forms two permanent oxides, the red or ferric oxide and the black or magnetic oxide. Iron shares with platinum the property of being weldable without the intervention of any "soldering" agent. Iron combined with carbon (and usually with other substances) in considerable percentages forms common cast or pig iron; combined with the same element in very much smaller proportions, it forms steel.

Iron is very widely distributed as an ore; but it is doubtful if it ever occurs native.

The most important deposits of iron ores are those of the U.S.A., the United Kingdom, France, Germany, Spain, Sweden and Norway, Russia, Canada, Italy, Austria, India, and China. An important ore, one of the commonest, occurring in rocks of all ages, is iron pyrites or iron sulphide, the normal composition of which is iron 46.7 and sulphur 53.3. It is the chief source of the iron sulphate (green vitriol or copperas) and the sulphuric acid of commerce.

In the extraction of iron from its ores two processes are recognized: (1) A suitable ore is heated in a furnace with charcoal or coal.

When in a plastic mass, and before it is actually fused, the metal is taken out and worked by hammering or rolling or pressing, to separate and force out of it as much as possible of the foreign matter, slag and impurities. This is the process used by primitive man and by all iron-makers until well on in the Middle Ages. (2) The metal is melted out of the ore mass into a fused liquid condition and is then poured into moulds, in the first instance usually in the form of pigs. Pig iron is thus cast iron, but the latter term is applied particularly to manufactured articles made directly from melted iron as distinguished from wrought or malleable iron. The tensile strength of cast iron is about 6 to 18 tons per square inch, less than one-fifth of its compressive strength. The metal is brittle. From pig iron are formed all the many varieties of iron and steel.

Wrought or malleable iron is the purest form of commercial iron; it does not harden like steel by being quenched in water while hot; it is easily magnetised, but does not retain the magnetism. In tensile strength it ranges from 17 to 27 tons per square inch. The process of manufacture, termed puddling, is practically identical with the ancient semi-fusion process, with the exception that, instead of beginning with iron ore, it begins with pig iron, which is first melted down on the hearth of the puddling furnace and then treated so that it becomes practically the spongy, impure mass of the ancient iron-worker.

The world production of pig iron in 1929 was 96,180,000 tons, made up as follows: United States 42,700,000; Germany 13,100,000; France 10,300,000; Gt. Britain 7,500,000; other countries, 22,580,000. See Bessemer; Blast Furnace; Forge; Steel.

IRON AND STEEL EXCHANGE. Institution for the transaction of business in the iron, steel, and allied trades. The exchange is located at Imrie House, King William St., E.C. The Iron and Steel Institute is an association founded in 1869. It has a technical library at its headquarters, 28, Victoria Street, London, S.W.1.

IRON AGE. Archaeological term denoting a cultural phase conditioned by the use of iron, especially for edged tools and weapons. Iron was known as a curiosity by the pyramid-builders, but it was not until 1000 B.C. that iron-working became general in the Mediterranean basin. Its gradual development from bronze precursors is traceable at Hallstatt, and its fuller employment at La Tène (q.v.). These places give their names to the first and second periods of the early Iron Age in central and western Europe. The Teutonic culture overlapped that designated in Britain late-Celtic, which passed into Romano-British and Anglo-Saxon civilizations. In N. Europe iron began somewhat later.

In all these regions cast bronze continued and developed side by side with wrought iron, the production of cast iron being virtually unknown until the Middle Ages. In north and central Africa iron appeared in direct succession to stone. In aboriginal America, apart from the hammered implements of compact unsmelted ore of the mound builders, there was no Iron Age as such before the discovery. See Archaeology; Bronze Age.

IRON-BARK TREE (*Sideroxylon dulcificum*). Tree of the order Sapotaceae, native of W. Africa. It has leathery, alternate leaves,

and small, whitish flowers in clusters. Its fruit is an oval berry, known as miraculous-berry, its intense sweetness clinging to the palate and nullifying the acidity of other food taken shortly after. The timber is very hard.

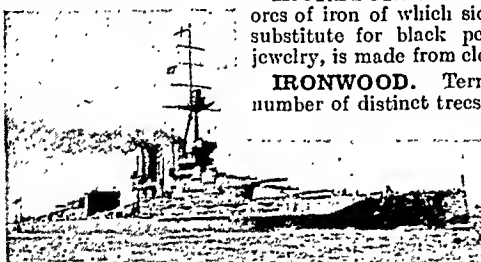
IRONCLAD. Name given to the first armoured warships. The earliest British ironclads were the *Warrior*, completed at Blackwall in 1860, and the *Black Prince*, completed at Glasgow in 1861. In time wrought-iron armour as a protection for warships gave way to specially hardened steel plates. See *Battle Cruiser*; *Battleship*; *Destroyer*.

IRON CROSS. Prussian order. It was instituted by King Frederick William III in 1813 during the struggle against Napoleon, and was remodelled by William I in 1870. It has three grades, and is divided into civil and military divisions. The badge is an iron cross pattée, with silver edging and mountings. During the Great War it was said that about 3,000,000 of these crosses were awarded.



Iron Cross of Prussia

IRON DUKE. British battleship, the flagship of Lord Jellicoe while in command of the Grand Fleet, 1914-16; also nameship of a class of battleships completed in 1914. Their length is 622 ft. over all, and they are 90 ft. in beam. They displace 25,000 tons and have engines of 29,000 h.p., giving a speed of 22½ knots. These vessels carry ten 13.5-in. and twelve 6-in. guns. On their main gun positions and conning tower they have 6-in. armour, and a 2½-in. armoured deck. In this class are the *Iron Duke*, *Marlborough*, *Benbow*, and *Emperor of India* (formerly the *Delhi*). In 1919 *Iron Duke* became the flagship of the Mediterranean fleet. Under the London Naval Treaty (q.v.) three of this class were to be scrapped, and the *Iron Duke* retained as a training ship.



H.M.S. *Iron Duke*, battleship on which Lord Jellicoe flew his flag, 1914-16, during the Great War

IRON GATES. Name given to the narrowing of the Danube between Orsova and Turnu Severin in S.W. Rumania. It is about 2 m. long. Here are the great rapids beside an island in mid-stream, due to the Danube cutting through the mountains. Between 1890 and 1900 a navigable way was made by blasting. Both the main road and rly. follow the left bank from the Banat to the Wallachian plain. See *Danube*; *Rumania*.

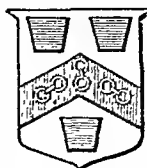
IRON MASK, THE MAN IN THE. Unidentified French state prisoner. On Sept. 18, 1698, Saint Mars, a trusted officer of Louis XIV, brought to the Bastille a male prisoner, whose face was hidden by a mask. Five years later, Nov. 19, 1703, the prisoner died in the Bastille, and was buried in the churchyard of S. Paul, just outside the prison. The official entries of his reception in the Bastille, his death and interment, the sole incontestable documents in the case, are extant. The mask, described in some versions of the story as of iron, seems actually to have been of black velvet.

Many legends arose concerning his identity, one being that he was a hasty brother of Louis XIV, another that he was his legitimate twin brother. Modern criticism has suggested that he was Count Mattioli, who had negotiated the sale to Louis of the frontier fortress of Casale, belonging to the duke of Mantua, and, for a double bribe, had betrayed both his master and the French king.

IRONMONGER. Dealer in hardware. The trade includes the sale of builders' materials and requisites and, in its retail side, cutlery, tools, and household fittings.

The Ironmongers' Company is the tenth of the twelve chief London city livery companies.

Formed c. 1300, its arms were granted in 1435, by-laws framed in 1455, and the first of its six charters granted in 1464. Ironmongers' Hall, in Fenchurch Street, E.C., the site of which was acquired in 1457, was rebuilt in 1748-52. The trust estates and charities of the company include schools, almshouses, scholarships, and pensions.



Ironmongers' Company arms

IRONMOULD. Name given to the red stains resulting from the contact of iron, in soluble form, with linen or cotton fabrics. Ink is one of the chief causes of ironmould on linen. Oxalic acid or the so-called salts of lemon removes the stains.

IRONSIDES. Name given to the troopers of Oliver Cromwell. Rupert is said to have described Cromwell himself as an ironside, possibly with sarcastic reference to his body armour, and about 1648 the term was applied to Cromwell's troopers in recognition of their excellent discipline.

IRONSTONE. Name given to various ores of iron of which siderite is the chief. A substitute for black pearls, called ironstone jewelry, is made from close-grained haematite.

IRONWOOD. Term applied to a large number of distinct trees whose timber is hard and heavy. Almost every country has an ironwood tree, but in each the name is applied to a species distinct botanically, and even in one country it may indicate several species.

IRONY (Gr. *cirōneia*, dissimulation). In rhetoric, a method of speech by which the words used convey a meaning the reverse of that which is really intended. It is a form of ridicule, exposing errors or faults by seeming to adopt or approve them. Pascal's Provincial Letters is an admirable example of delicate irony. Swift was a master of savage irony.

IROQUOIS. Confederacy of North American Indian tribes, once occupying part of New York state. During the 16th century the Mohawks, Cayugas, Oneidas, Onondagas, and Senecas formed the so-called Five Nations; the incorporation (1715) of the Tuscaroras resulted in the Six Nations group. After the Revolution the Mohawks entered Canada, settling to the north of Lakes Erie and Ontario. The remainder are to be found in New York State and Wisconsin. See illus. p. 73. Pron. *Irrokwoy*.

IRREDENTISM. Name given to a movement in Italy which aimed at delivering all Italian land from foreign rule. The party cry was *Italia Irredenta*, the word *irredenta* meaning unredeemed, and the party came into existence soon after the formation of the kingdom of Italy, in which certain districts inhabited by Italians were not included. By 1920 most of the Irredentist demands had been conceded, and with D'Annunzio's failure to annex Fiume the party came to an end. See *Italy*.

IRRESISTIBLE. British battleship of the *Formidable* class. She was sunk by mines in the Dardanelles, March 18, 1915. A sister ship, the *Bulwark* was blown up at Sheerness, Nov. 26, 1914. See *Formidable*.

IRRIGATION (Lat. *irrigare*, to water). Method of supplying water to land in order to increase its productivity. In India 35,000,000 acres of land, hitherto worthless, have been put to useful account by irrigation. The irrigated area of the U.S.A. is about 12,000,000 acres, while the prosperity of Egypt depends almost entirely upon irrigation. Water for irrigation purposes is obtained either from rivers or wells. As the normal level of a river is below that of the lands to be irrigated, it is usual to construct a barrage or weir across the bed and raise the level of the river sufficiently to direct part of its flow into canals having intakes above the weir.

To make fuller use of a river which derives its water from the melting snow or rainfall of mountainous regions, the annual discharge must be regulated by a dam built in an appropriate location. In the flood season immense quantities of water are impounded behind the dam for consumption during periods of smaller natural flow. The most important irrigation schemes of the U.S.A., India, Egypt, and Australia are based upon the formation of huge artificial dam reservoirs. In India 13,000,000 acres are irrigated from wells, from which water is laboriously raised by hand or crude mechanical appliances. In America pumping windmills, the cheapest means of lifting water, are widely used.

Among notable irrigation works in India are the Lloyd dam at Bhatnagar, and the Wilson dam at Bhandardara. Works in progress include the Sukkur barrage and canals in Sind, and the Sutlej Valley canals in the Punjab. The Sukkur barrage, the greatest work of its kind, will measure 4,725 ft. between the faces of the regulators. The scheme commands an area of 7,500,000 acres. The Sutlej scheme involves over 5,000,000 acres, and comprises four weirs.

In Australia a great deal of land in the region of the Murray and Murrumbidgee rivers has been irrigated. In the Sudan large areas have been made suitable for cotton growing by means of irrigation schemes.



Irrigation canal of concrete in an Arizona desert

IRTHING. River of England. Rising in the Northumberland and Cumberland borders, it flows between these counties, and then S.W. through Cumberland to the Eden.

IRTHLINGBOROUGH. Urban district of Northamptonshire. It is 2 m. from Higham Ferrers, on the L.M.S. Rly. The chief industry is the manufacture of boots and shoes. Pop. 4,809.

IRVINE. Burgh and seaport of Ayrshire, Scotland. It stands on the Irvine, 30 m. S.W. of Glasgow, on the L.M.S. Rly. Shipbuilding.

engineering, and the manufacture of chemicals are carried on, and coal and chemicals are exported Pop. 11,826

IRVING, EDWARD (1792-1834). Scottish divine. Born at Annan, Dumfriesshire, Aug. 4, 1792, he became a schoolmaster at Haddington, where Jane Baillie Welsh, afterwards Mrs Carlyle, was one of his pupils. He and Carlyle were rival schoolmasters at Kircaldy. In 1819 he was assistant to Dr Thomas Chalmers, at S. John's, Glasgow, and in 1822 he became chaplain at the Caledonian Asylum's chapel in Hatton Garden London. His congregation removed to a new building in Regent's Square, 1824. In 1832, charged with heresy, he left the Presbyterian Church and associated himself with the Catholic Apostolic Church (q.v.). An appeal against his dismissal failing in 1833, his health gave way, and he died Dec 7, 1834.



Edward Irving,
Scottish divine
After J. Slater

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IRVING, SIR HENRY (1838-1905) English actor. Born at Keinton Mandeville, Somerset, Feb. 6, 1838, his real name being John Henry Brodribb. Irving made his first public appearance at The Lyceum, Sunderland, in 1856. He played for two years and a half under R. H. Wyndham at Edinburgh; then for five years at Manchester. The part that brought him to London in 1866 was his Rawdon Scudamore, the villain in Boucicault's drama Hunted Down. In 1871 he became leading man at The Lyceum, where, as Mathias, in The Bells, he at length achieved fame.

On Dec. 30, 1878, he began his own management of The Lyceum, playing Hamlet to the Ophelia of Ellen Terry, thus commencing a famous connexion of 24 years. His greatest popular and financial success was won in Wills's version of Goethe's Faust. His greatest artistic triumph was achieved in Tennyson's Becket, Feb. 6, 1893. His final appearances at The Lyceum, in the summer of 1902, were made in Faust and in The Merchant of Venice. Irving, who was knighted in 1895, died at Bradford, Oct. 13, 1905, while on tour with Becket.



H. B. Irving,
British actor
Elliott & Fry

His elder son, Henry Brodribb Irving (1870-1919), became a member of Comyns Carr's company at the Comedy in 1894, and was with George Alexander, 1896-1900. A student of criminology, he wrote A Life of Lord Jeffreys, 1898; French Criminals of the 19th Century, 1901; The Trial of Mrs. Maybrick, 1913. He died Oct. 17, 1919.

Sir Henry's second son, Laurence Sydney Brodribb Irving (1871-1914), supported his father in many plays, and wrote for him Peter the Great, Lyceum, 1898. He first made his mark as Hjalmar



Sir Henry Irving,
British actor
Elliott & Fry



Laurence Irving,
British actor
Langflier

Ekdal in Ibsen's Wild Duck. Royalty 1894. He and his wife (Miss Mabel Hackney) were drowned when the Empress of Ireland foundered in the St. Lawrence river on May 29, 1914.

IRVING, WASHINGTON (1783-1859) American author. Born in New York, April 3, 1783 of Anglo-Scottish parentage, in 1802 he contributed to The Morning Chronicle a series of letters signed Jonathan Oldstyle, in the manner of Addison and Steele. In Dec., 1809 he issued his first book Diedrich Knickerbocker's History of New York, a good-humoured burlesque of the old Dutch settlers of New Amsterdam.



Washington Irving,
American author

Irving was military secretary to the governor of New York in 1812, and was in Europe 1815-22. In 1819-20 appeared The Sketch-Book of Geoffrey Crayon, Gent., which, in addition to sketches of English life, contained The Legend of Sleepy Hollow and Rip Van Winkle. Braebridge Hall a further study of English life, followed in 1822, and The Tales of a Traveller in 1824. The Life and Voyages of Columbus appeared in 1828, the Chronicle of the Conquest of Granada in 1829, Voyages and Discoveries of the Companions of Columbus in 1831, and The Alhambra in 1832. He died at Sunnyside, near Tarrytown, N.Y., Nov 28, 1859.

IRWELL. River of Lancashire. Rising on the E. side of Rossendale Forest, near Burnley, it flows S. to Manchester and then S.W. to the Mersey. Its lower course forms part of the Manchester Ship Canal. Its length is about 30 m. See Manchester Ship Canal.

IRWIN, EDWARD FREDERICK LINDLEY WOOD, 1ST BARON (b. 1881). British politician. The son and heir of Viscount Halifax (q.v.). In 1910 he was chosen M.P. for the Ripon division, and between 1922-25 was in the Cabinets, first as president of the board of education and then as minister for agriculture. In 1926 he went to India as viceroy, and was made a peer. He was there during the unrest of 1930.

ISAAC. One of the Hebrew patriarchs, and the inheritor of the promises made by God to his father Abraham (q.v.) (Gen. 21, 22, 24, 27, 35). A prosperous farmer and stock-keeper in the S. of Palestine, he is said to have been forty years old when he married Rebekah, and his sons Jacob and Esau were not born till twenty years later. Isaac is the first patriarch mentioned as sowing seeds, and was also notable as a well digger. He is said to have died at the age of 180, and was buried with his father at Machpelah.

ISAAC. Name of two East Roman emperors. Isaac I Comnenus, who reigned 1057-59, was the first imperial representative of the Comnenus family. During his brief reign he strove to check extravagance.

Isaac II, called Angelus, was emperor, 1185-95 and 1203-4. Belonging to a noble Greek family of Asia Minor, he was proclaimed emperor in place of Andronicus I, slain in 1185. Distrusting the Crusaders under Frederick Barbarossa, he formed an alliance with Saladin. The Bulgarians again took up arms, and after two severe defeats Isaac was blinded and imprisoned by his brother Alexius, April 10, 1195. Later, when the Latins entered Constantinople, he was again set on the throne with his son Alexius, July 18, 1203, but early in 1204 they were overthrown.



Baron Irwin,
British administrator

ISABELLA (c. 1292-1358) Queen of Edward II of England. Daughter of Philip IV of France, she married Edward in Jan., 1308. Edward neglected her, and about 1324 she became practically a prisoner. She made her way to France, where, with her lover Mortimer, she planned an invasion of England. Landing at Harwich in 1326, she captured her husband and Despensers, returned to London, and proclaimed Edward III as king. Causing her husband to be murdered at Berkeley Castle she and Mortimer held the regency until 1330 when Edward III seized both and sent his mother into retirement. She died at Hertford, Aug. 23, 1358. See Edward II.



Isabella I,
Queen of Castile

ISABELLA (1451-1504). Queen of Castile. Daughter of John II of Castile and Leon, she married Ferdinand of Aragon in 1469, and in 1474, with her husband, ascended the throne of Castile and Leon. Five years later Ferdinand succeeded to the throne of Aragon, and thus the greater part of Spain was united under one monarchy. Isabella died Nov. 26 1504. See Ferdinand V; Spain.

ISABELLA (1830-1904). Queen of Spain. Born at Madrid, Oct. 10, 1830, the daughter of Ferdinand VII she benefited by a decree which set aside the Salic law, and at the age of three succeeded her father under the regency of her mother, Maria Christina, and for the next seven years her uncle, Don Carlos, maintained constant conflict for his rights. In 1840 Maria Christina resigned the regency in favour of Espartero, and in 1843 Isabella was declared of age by the Cortes. Isabella was compelled to marry her cousin, Don Francis of Assisi, an unhappy match. Continued insurrections broke out and in 1868 she was deposed and banished. In 1870 she abdicated in favour of her son, Alphonso XII. The rest of her life was passed in Paris, where she died, April 10, 1904. See Carlos; Spain.



Isabella, Queen of
Spain, 1833-68

ISAIAH. Hebrew prophet, the author of one of the books of the Bible. A son of Amoz he lived in the 8th century B.C. He seems to have spent his life in Jerusalem, and received his call probably about 740 B.C. Apparently a man of rank and influence, his activity was at its height in the great crises that agitated the nation from the Syro-Ephraimitish war in 735-734 B.C. (Isa. 7, 1; 8, 18) to the invasion of Sennacherib in 701 B.C. (Isa. 36-39). Isaiah's great task was to warn people that, in consequence of their neglect of Jehovah, severe punishment at the hand of Assyria was about to overtake them. He warned them that salvation lay in a return to Jehovah and in renewed confidence in Him.

ISANDHLWANA. Place in Zululand, S. Africa. It stands near the Tugela river, 105 m. from Durban, and is noted as the scene of a fight between the British and Zulus, Jan. 22, 1879. A British army encamped here went out against the enemy, leaving a small force in charge. This was attacked by 10,000 Zulus and destroyed. The British losses were 800, and those of the native allies 600, only about 40 Europeans escaping alive. The honours were with the S. Wales Borderers. See Zulu Wars.

ISCHIA. Island of the Mediterranean, belonging to Italy. The ancient Pithecusa or Anagnina. It lies off the Campanian coast, 16 m. W.S.W. of Naples. Its area is 18 sq. m.

Of volcanic origin, it is mountainous, fertile, and most picturesque. Its highest point is Monte Epomeo. Ischia (pop 7,815), the capital, is the seat of a bishop, and has a 15th century castle. Other towns are Casamicciola, noted for its hot springs, and Forio, a port on the W coast. The island is subject to earthquakes. Pop. 28,500. Pron. Ees-keca

ISÈRE. River of France. It rises in the Graian Alps on the Italian frontier and flows mainly W., joining the Rhône near Valence. Its length is about 180 m., but its swift current makes it unsuitable for navigation. Its chief tributaries are the Drac, Are, and Breda.

The river gives its name to a department of France of which Grenoble is the capital.

ISHMAEL. Son of Abraham by his wife's Egyptian maid Hagar. The jealousy of Sarai and the birth of Isaac some years later led to Hagar being sent away with her son, and settling in the wilderness of Paran, where Ishmael married an Egyptian (Gen. 16-25). He was famed as an archer. His descendants occupied the land E. of Palestine. See Hagar.

ISHTAR. Babylonian and Assyrian goddess. A primitive Semitic deity, she had a chapel in the Esagila temple at Babylon, approached from the resplendent Ishtar gate. She appears as queen of heaven (Jer. 44), mother of all life, and goddess of love and war.

ISINGLASS. Gelatinous substance obtained by drying the swimming bladder of the sturgeon and other fish. It is used for clarifying wines, beers, and spirits, and is employed in cookery for making jellies.

ISIS. Egyptian goddess. Originally local, she became pre-eminently the great mother (Demeter), sister-wife of Osiris, and mother of Horus. Represented in human form, she bore, after assimilation with Hathor the cow-horned sun-disk. Her XXXth-dynasty temples were at Behbet and Philae, where her worship ceased about A.D. 560.

Isis. Name given to the upper part of the Thames, that about Oxford. See Thames.

ISLA. River of Scotland. It rises in the Grampians on the N.W. of Angus (q.v.), and flows 48 m. in a south-east direction to the Tay which it joins 4½ m. S.W. of Coupar Angus. It makes two fine falls—Reekie Linn and the Slugs of Auebrannie, both in the Angus ravine, the Den of Airdie. Pron. I-la.

ISLAM (Arab. making of peace). Name given in the Koran to the Mahomedan religion. Allah is called the Author of Peace; and Islam is held by all believers in it to lead to the Abode of Peace. See Koran; Mahomedanism; Mahomet.

ISLANDS, BAY OF. (1) Bay on the W. coast of Newfoundland. It penetrates inland by three branches, receiving the waters of the Humber, and containing numerous small islands. (2) A commodious, secure, and deep harbour in North Island, New Zealand, on the E. side of the Auckland peninsula.

ISLANDSHIRE. Formerly a detached portion of the co. of Durham. Consisting of land near Berwick-on-Tweed, together with the Farne Islands, it was incorporated with Northumberland (q.v.) in 1844.

ISLAY. Island of the Inner Hebrides, belonging to the co. of Argyll. It is separated from Jura by the Sound of Islay. Its area is 235 sq. m. The inhabitants are chiefly engaged in dairy farming and rearing sheep and cattle. Oats, barley, and potatoes are grown. Distilling is an important industry, slate and marble are quarried, and peat is cut. The surface is generally level. Bowmore is the chief town. Islay was the headquarters of the MacDonalds, lords of the isles, and afterwards

the island passed to one of the branches of the Campbells, whose seat was Islay House, situated near Bridgend. Pop. 5,743.

ISLEHAM. Village of Cambridgeshire. On the L.N.E. Rly., 6 m. from Newmarket, it gives its name to a fen partly drained during 1918-19 by German prisoners. Pop. 1,490.

ISLES, LORD OF THE. Title borne by the chieftains formerly ruling the Western Isles of Scotland, now surviving only as one of the titles of the prince of Wales.

ISLEWORTH. Urban district of Middlesex. It stands on the Thames, 12 m. W.S.W. of London on the Southern Rly. There are soap and perfumery works, breweries, flour mills, and market gardens. Syon House (q.v.) is a seat of the duke of Northumberland. The 14th century parish church of All Saints, rebuilt in 1705 and enlarged in 1865, contains old brasses and other monuments. Gumley House, Lacey House, and Worton Hall are noteworthy. Well-known residents in the past include the duchess of Kendal and R. B. Sheridan. Pop. 46,664. Pron. Iselworth.

ISLINGTON. Metropolitan borough of the co. of London. It is bounded S. by Finsbury and Shoreditch, N. by Hornsey and Highgate, E. by Stoke Newington, and W. by St. Pancras, and covers 4½ sq. m. The Royal Agricultural Hall, 1861-62, is notable for its cattle, dairy, horse, and dog shows. The Naval and Military Tournament (until 1906), and the Christmas fairs. In Liverpool Road is the London Fever Hospital. On Islington Green is a statue of Sir Hugh Myddelton.

Until early in the 19th century Islington was a village enclosed by fields. It was famous for its archery butts, dairy produce, mineral spas, tea gardens, and ducking ponds. The Philharmonic music hall stood in the High Street. Pop. 330,737. See Angel Inn; Canonbury; Highbury; Highgate.

ISLIP. Village of Oxfordshire. It stands on the Ray, near its junction with the Cherwell, 6 m. from Oxford, on the L.M.S. Rly. There is an old church, S. Nicholas, restored in the 19th century. Pop. 522.

ISMAILIA OR ISMAILIYA. Town of Egypt. On Lake Timsah



Ismail Pasha, Khedive of Egypt.

through which passes the Suez Canal, it was the headquarters of the works during the canal's construction. Pop. 10,400.

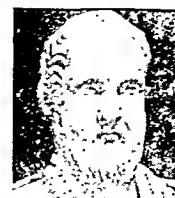
ISMAIL PASHA (1830-95). Khedive of Egypt. The second son of Ibrahim Pasha, he was born Dec. 31, 1830. He supported the Suez Canal scheme, and in 1867 was appointed khedive by Turkey. His extravagance occasioned the interference of Great Britain and France, and necessitated his abdication, 1879. He first retired to Naples, but died at Constantinople, March 2, 1895.

ISOBAR. Map line through places where the average barometric pressure is the same for the same period. The commonest use of isobars occurs upon the daily weather map. The arrangement of the isobars indicates the type of weather as cyclonic, etc. See Cyclone; Isotherm; Meteorology.

ISOCLINE. In geology, term used for rocks which are equally inclined in the same direction. Isoclinal strata often appear in mountain chains and Palaeozoic strata, and are the result of heavy tangential pressure. See Geology; Rocks.

ISOCRATES (436-338 B.C.). One of the so-called ten Attic orators. A pupil of Socrates in his early life, he gave up philosophy and started as a writer of speeches for clients to deliver in law cases, later composing

speeches dealing with public affairs and intended to be read, not spoken. He was thus the first political pamphleteer. Of his twenty-one extant speeches, the finest is the Panegyricus, in which he extols Athens as the natural leader of Greece.



Isocrates, Athenian orator. From a bust.

ISOLATION. Medically, the segregation of persons suffering from infectious diseases, in order to prevent the spread of the malady. Isolation hospitals are provided for persons suffering from smallpox and from certain other infectious diseases. Partial isolation in a private house can be effected by prohibiting all unnecessary persons from entering the patient's room, and by hanging a sheet, kept moist with carbolic acid or other disinfectant, in front of the door. See Notification.

ISOMERISM. In chemistry, the arrangement of the same elements in the same proportions to form different compounds. Ethyl alcohol and methyl ether both are represented by the formula C_2H_5O , but are different substances. The difference in properties is due to a different arrangement of the atoms. Substances of this kind are called isomerides, and are frequently met with in carbon compounds. See Polymerism.

ISOMORPHISM. Phenomenon exhibited by compounds of various elements of crystallising in the same form. The arsenates and phosphates of sodium, potassium, and ammonium possess the same crystalline forms, and under proper conditions form homogeneous mixed crystals. Such substances thus formed are termed isomorphous.

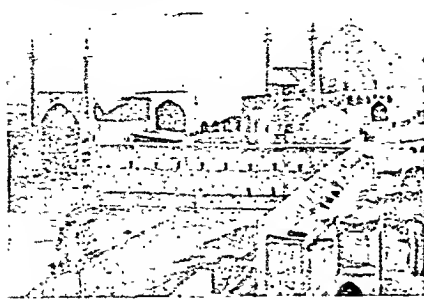
ISONZO. River of Italy, formerly of Austria. It rises in the Julian Alps, near the Predil Pass, and flowing S. issues into the Gulf of Trieste, 10 m. E. of Grado. The chief town on its banks is Gorizia, others being Plezzo, Suzzio, and Tolmino. Its length is 82 m.

BATTLES OF THE ISONZO. These were fought between the Austrians and the Italians, 1915-17. Italy declared war on Austria, May 23, 1915, and attacking on her E. front reached the line of the Isonzo by the end of the month. The Austrians withdrew mostly to the E. bank of the river, their centre being the entrenched camp of Gorizia, but they retained important bridgeheads on the W. bank. The second battle was a renewed offensive against Gorizia, and on July 2 the attack was general from Plava to Castelnuovo. Fighting continued for nearly a fortnight, with the result that the Italians pushed forward their line.

The third battle began on Oct. 18, 1915, with a general bombardment by the Italians of the Austrian positions from Plava to the sea, and fighting went on until Dec., the Italians gaining positions enabling them to bombard Gorizia. In the fourth battle, begun on Aug. 1, 1916, the Italians captured Gorizia. In the final offensive of May, 1917, the attack was from Plava to Salcano, and the heaviest fighting took place against the formidable Austrian positions on the Kuk, Vodice, Santo, and San Gabriele heights.

ISOTHERM (Gr. isos, equal; thermos, heat). Map line through places where the temperature is the same for the same period. The mean July isotherm of 90° F. passes through all places where the July temperature averaged over many years reaches that amount. In general, isotherms indicate temperatures which are corrected for the elevation of the meteorological station to an estimated corresponding value at sea level. The effect of mountains on air temperatures is shown only by isotherms specially drawn to show actual temperatures. See Meteorology; Temperature.

ISOTOPES. Term applied to different varieties of a chemical element which appear to be identical in chemical properties, and may have slightly different atomic weights. See Atom; Chemistry



Isfahan, Persia. The Grand Mosque

ISPAHAN or **ISFAHAN.** City of Persia, formerly the capital. It is on a fertile tableland above the river Zaindeh Rud, about 200 m. S. of Teheran. During its greatest prosperity, under Shah Abbas, 1586-1628, it was one of the largest cities of Asia, and possessed many fine buildings, some of which still stand, notably the Palace of the Forty Pillars and the Grand Mosque. It trades in tobacco, opium, cotton, and fruits. The suburb of New Julfa is inhabited by Armenians. Pop. 80,000.

ISRAEL (Heb. Perseverer with God). Name given by God to Jacob (Gen. 32 and 35). It became a synonym for Jew or Hebrew. See Hebrew; Jews; Palestine.

ISSUS. Ancient port of Cilicia. It stood on the gulf now called Iskanderun, and is celebrated for the battle fought in 333 B.C. between Alexander the Great and Darius III, in which the latter was totally defeated. Near here, also, Septimius Severus defeated Pescennius Niger in A.D. 194, and Heraclius overcame the Persians under Chosroes in 622.

ISTANBUL. Name by which Constantinople, the former capital of Turkey, is now known to the Turks. It lies on the shore of the Bosphorus, near the point where it broadens out into the Sea of Marmara. The distinctive feature of its situation is the inlet called the Golden Horn (q.v.), providing a fine natural harbour capable of floating the largest ships. The Golden Horn divides the city into two parts,



Istanbul. 1. Galata Bridge, looking towards Pera, with its famous tower. 2. General view across the Golden Horn from Pera, the European quarter

the Turkish city (Stamboul) on the southern side, and Galata, the business quarter, and Pera, the foreign residential quarter, on

the northern. N.E. of Galata lies the palace of Yildiz Kiosk (now a casino). The Fanar is the Greek quarter, the Jews are found at Chasskoi on the Golden Horn, while across the Bosphorus is the Asiatic suburb of Seutari.

Istanbul proper, which is connected with the northern suburbs by two bridges across the Golden Horn, contains the memorials of the Greek city. It is also a typically Asiatic city. The Palace of the Old Serai, which contained the offices and the Porte or Gate that gave a title to the Turkish Government, occupies the site of the residence of the Greek emperors; the square of the At-Meidan is the ancient hippodrome; and the column of the Three Serpents, brought from Delphi and crowned with the golden urn of Plataea, still forms the chief ornament of its vast expanse. Even more remarkable than all these is the church of S. Sophia, converted into a mosque.

Despite the removal of the capital and the consequent diversion of trade, Istanbul remains the financial, business, educational, and cultural centre of Turkey. It is still an important depot for sugar and coffee and a centre for silk production. It is the seat of the national university, founded in 1900. Pop., including suburbs, 673,029.

Founded by Constantine the Great in 330 as a new capital for his empire, Constantinople occupied the site of the Greek city of Byzantium. It remained under Greek and Latin rulers until May 29, 1453, when the Turks captured the city, remaining in possession of it without a break down to 1920.

After the armistice with Turkey in 1918 the Allied Fleet arrived off Constantinople, Nov. 13, 1918, and a high commissioner was appointed. An Allied force continued to occupy the city until shortly after the ratification by the Angora government of the treaty of Lausanne in Aug., 1923. In that year Angora was chosen as the capital of Turkey in place of Constantinople. See Angora; Caliphate; Turkey.

ISTHMIAN or **ISTHMIAN GAMES.** One of the four great athletic festivals of ancient Greece, the others being the Olympic, the Pythian, and the Nemean. The festival was

held every two years, near the isthmus of Corinth, in honour of Poseidon, god of the sea. See Olympic Games.

ISTHMUS (Gr. isthmus). Narrow neck of land either uniting a peninsula to the mainland or joining two continents together. Examples of the first are the isthmuses of Corinth, Kiel, and Kra (Malay Peninsula); of the second those of Panama and Suez. The cutting of a canal through an isthmus often shortens shipping routes very considerably.

ISTRIA. Italian peninsula at the head of the Adriatic Sea. The land boundary lies on the slopes of the Karst mountains overlooking the narrow strip of lowland between Trieste and Finme. Formerly an Austrian province, it included the Quarnero island, and passed to Italy after the Great War.

Pola is the largest town. Other towns include Pisinò (Mitterburg) and Rovigno, a flourishing small port. Its area is 1,913 sq. m. Pop. 319,700.

ITALIA. Airship in which General Nobile, commander of an Italian air expedition, flew over the North Pole on May 24, 1928. On the return voyage to Spitzbergen the ship crashed on a floe. Eight men, including Nobile, were marooned on the ice, while seven others were carried away with the balloon and never heard of again. The marooned men were located by aeroplane and rescued. In searching for the Italia, Amundsen lost his life. See Aeronautics; Amundsen, R.

ITALIAN GREYHOUND. Small breed of toy dog, closely resembling a diminutive greyhound. The average weight of a specimen is about 7 lb., and the favourite colour a golden fawn. The breed, which comes from Italy and dates from the beginning of the 15th century, has speed but is too delicate for sporting use.



Italian Greyhound. Prince Ivanovitch, a prize dog of the breed

ITALIC (Lat. italiens). In printing, a type, the letters of which slope up towards the right. Originally called Aldine or Venetian, and known also as cursive, it was first used at Venice in 1521 by Aldus Manutius (q.v.) and dedicated by him to the Italian states. At one time prefaces to books and all proper names were printed in italic. Later usage is for emphasis, foreign words, side headings, etc. See Printing.

ITALY. Kingdom of S. Europe. It comprises the long peninsula stretching S. from the Alps into the Mediterranean, as well as Sicily, Sardinia, Elba, the Lipari Islands, and other smaller islands. The country encloses the extra-territorial domains of the Papacy and the tiny republic of San Marino. The collapse of Austria after the Great War resulted in a rearrangement of the Italo-Austrian frontier and in the addition to Italy of large tracts of what were formerly Austrian lands. The Alps now form the N. frontier, while the agreement with Yugoslavia sets the N.E. frontier along the Dinare Alps, giving Italy the old coastland provinces of Austria, Görz (Gorizia) and Gradisca, Trieste, and Istria. Italy is a member of the League of Nations, Rome is the capital. Area, 119,743 sq. m.; pop. 41,173,000.

The Italian peninsula is traversed from N. to S. by the Apennines. The chief rivers are the Po, Adige, Tiber, and Arno. There is much volcanic and earthquake activity, as at Vesuvius, Etna, Stromboli, and Messina. The main agricultural products are cereals, olives, beans, chestnuts, rice, potatoes, fruit, sugar beet, hemp, flax, and cotton. Flowers are grown in the S.; vine growing and silk culture are carried on all over Italy. The minerals include sulphur, zinc, quicksilver, lead, iron, manganese, and antimony. Marble, limestone, and gypsum are quarried.

The textile industries are very important, especially cotton, silk, and wool. In production of artificial silk Italy holds the second place in the world. The manufacture of sugar and of cheese are growing industries. Other manufactures include motor cars, aeroplanes, chemical products, glass, and leather goods. The fisheries, particularly for tunny, are valuable. Water power is being increasingly utilised. There are more than 13,000 m. of

ry., of which over 10,000 m. are controlled by the state. Wireless stations have been erected in several places. Commercial air routes link up Brindisi with Istanbul via Athens, Rome with Vienna via Venice, etc.

The people of Italy, though of origins as diverse as those of Great Britain, have a distinctive quality of nationality, although from the days of the Roman Empire till the middle of the 19th century they never enjoyed political unity. At the centre of Italy, however, stands Rome, which from being the civilized world's imperial city became the western world's pontifical city and the central point of western culture till the 16th century, the close of the Middle Ages. Rome ruled religion; the Popes disputed with emperors and kings for a universal supremacy; the self-governing maritime cities, Venice, Genoa, and Pisa, had no other rivals in their control of sea-borne commerce; in the 14th and 15th centuries Italy had almost the monopoly in the revival of letters and art, which had originated there.

Modern Italy, then, has a past to be lived down for which she is far less responsible than the powers which held her in thrall, and a glorious past to live up to which is all her own. Not a century since, she became a united nation, under a constitutional monarchy framed on the British model which had been the gradual growth of a thousand years, with the task before her of organizing herself as a first-class power on the basis of resources less in themselves and far less developed than those of her powerful neighbours. It is not unnatural that she should feel impelled to a somewhat more active self-assertion than is altogether conducive to general harmony under the guidance of a chief whose extraordinary abilities are the warrant for his unbounded self-confidence; the aggressive spirit can hardly be lacking in the successful dictator. But until the rise of Mussolini it can hardly be said that Italy's front-rank position was definitely established.

A dictatorship has superseded the constitutional government; avowedly setting aside the conception of civic liberty and completely subordinating individual and personal interests to those of the state as the latter are conceived by the controlling authority, criticism of which is as sternly repressed as direct disobedience to its decrees. The new autocracy, known as Fascism, has the enthusiastic support of a large body of citizens, who regard it as essential to the maintenance of law and order; under

group of acari. The sufferer should take a hot bath, vigorously scrubbing the skin with soap, so helping to remove the superficial layers of the skin and lay open the burrows. Following this,



Italian types. Left, peasant girl from Bellagio; right, church beadle

sulphur ointment should be applied daily to the whole body. At the end of a week another hot bath should be taken, and the patient should then be cured. The clothes also should be disinfected by heat or formalin. See Mite.

ITCHEN. River of Hampshire. Rising near Alresford, it flows W., and then S. to Southampton Water, passing by Winchester. It enters the sea by a tidal estuary, 3 m. long. There is a river in Warwickshire named Itchen, a tributary of the Avon.

Itchen, a suburb of Southampton, stands at the mouth of the Itchen, 1 m. E. of Southampton proper. Until 1920, when it was included in Southampton, it was a separate urban district. Itchen Abbas is a village on the Itchen, 5 m. from Winchester. Pop. 206.

ITHACA (mod. Itbáki, Thiáki). One of the Ionian Islands, belonging to Greece. It was regarded as the home of Odysseus (Ulysses). It has an area of 45 sq. m. Vines, currants, and olives are grown, and goat-rearing and sponge and coral fishing are carried on. The island is cut almost in half by the Gulf of Molo, on which is the capital, Vathy. Some consider the ancient Ithaca a fictitious island, but the general opinion favours its identification with one of the Ionian islands. Pop. 11,715. See Greece.

ITO, PRINCE HIROBUMI (1841-1909). Japanese statesman. Born Sept. 2, 1841, a stay in Europe made him an advocate of western civilization. On his return home he advocated many reforms. In 1878 he became minister of the interior and in 1885 premier, a post he held with intervals until 1901. In 1906 he was made resident

general in Korea, and he was murdered at Kharbin, Oct. 26, 1909. Ito was largely responsible for a new constitution for Japan, the successful conduct of the war with China, and the alliance with Great Britain.



Intellectually, like Hellas of old, she was far in advance of the rest of the world; but, as with Hellas, there was among her city states no semblance of political unity. City states could not hold their own individually against the ambitions of the Great Powers which had now come into being, in whose international and dynastic conflicts they became pawns for two and a half centuries, the helpless prizes for which Hapsburgs, Capets, and Bourbons contended, ruling them as alien masters. Nevertheless, or in consequence, a pervading nationalist sentiment at last awoke. The spirit inspired by Mazzini and Garibaldi, joined with the politic statecraft of Cavour and Victor Emmanuel, achieved in 1861 and completed in 1866 the unification of Italy under a single monarchy and her liberation from foreign dynasts.

Italy. Map of the kingdom as established under Victor Emmanuel II, together with the territory acquired from Austria after the Great War

it the power of the government is and aims at being irresistible. See Fascisti; Mussolini; Naples; Rome; Savoy, etc.; also illus. p. 435.

ITCH OR SCABIES. Disease of the skin produced by a small parasite belonging to the

ITURBIDE, AUGUSTUS DE (1783-1824). Emperor of Mexico Bora Sept. 27, 1783, he became a soldier and later governor of two provinces of Mexico, then under Spanish rule. In 1820 he commanded a Spanish army against some rebels, but he soon changed sides and put forward a declaration demanding independence. This was granted by the viceroy, and Iturbide became emperor in May, 1822. In March, 1823, owing to a rebellion, he abdicated and went to Europe. Having returned to Mexico, he was arrested and shot July 19, 1824. Pron. Ee-tur-heeday.

IVAN OR **JOHN**. Name of several rulers of Russia. Pron. Ee-van.

Ivan III (1440-1505), surnamed the Great, grand duke of Muscovy 1462-1505, was the real founder of the tsardom of Muscovy.

Ivan IV (1530-84), surnamed the Terrible, was tsar of Russia 1547-84. He made himself master of Kazan, Astrakhan, and Western Siberia, but his attempts to obtain possession of the Baltic provinces were frustrated. He encouraged commerce, and was the first Russian ruler to conclude a treaty with England. He died March 18, 1584. Ivan IV was the first ruler to assume the title of tsar.

IVEAGH, EDWARD CECIL GUINNESS, 1ST EARL OF (1847-1927). British brewer and philanthropist. Born Nov. 10, 1847, a younger son of Sir B. L. Guinness, Bart., he became head of the great Dublin firm. He established in 1839 the Guinness Trust for building houses in London and Dublin, and subscribed liberally to hospitals and other charitable undertakings.



1st Earl of Iveagh, British philanthropist. Lajayette

In 1885 he was made a baronet; in 1891 a baron, taking the title of Iveagh; in 1905 a viscount, and in 1919 an earl. Lord Iveagh died Oct. 7, 1927. By his will, which was proved at £11,000,000, he left the Ken Wood (q.v.) estate and mansion, with a magnificent collection of pictures, to the nation. See Guinness.

Rupert Edward Cecil Lee Guinness (b. 1874), who became the 2nd earl on his father's death, was Unionist M.P. for Haggerston 1908-10; South East Essex 1912-18; and Southend-on-Sea, 1918-27. His wife, a daughter of the earl of Onslow, succeeded him as M.P. The first earl's third son, Walter Edward Guinness (b. 1880), M.P. for the Bury S. Edmunds division, was minister of agriculture and fisheries 1925-29 in the Baldwin Government. Like his eldest brother, he was a noted oarsman both at Eton and Cambridge.

IVINGHOE. Parish of Buckinghamshire. It is 9 m. from Aylesbury, and 4 m. from Tring. Its 13th century church is noteworthy. Ivinghoe Beacon (762 ft.) and Ringshall or Ivinghoe Common have been the property of the National Trust since 1926. Pop. 810.

IVORY. Name given to a variety of dentine or tooth substance, of various animals. Ivory proper is usually restricted to that obtained from the tusks of elephants, but that from the hippopotamus, narwhal, and walrus is also recognized. Ivory, on account of its hardness, whiteness, durability, and ability to take a high polish, has been from the earliest times a favourite article of ornament. It can be dyed by various chemical means, but no method has yet been discovered of restoring its colour when yellowed with age. Its principal commercial use, apart from ornamental carving, is for the manufacture of piano keys, billiard balls, knife handles, toilet ware, etc.

IVORY COAST (La Côte d'Ivoire). French colony in W. Africa. It is bounded N. by Upper-Senegal-Niger (French Sudan), W. by French Guinea and Liberia, S. by the

Gulf of Guinea, and E. by the Gold Coast Colony. The only highlands of importance are on the borders of Liberia. The coastal regions are broken by a series of lagoons. The forest area covers over 74,000 sq. m., with a width of about 186 m. The capital is Bingerville. From Abidjan a rly. runs N. for some 300 m. Its area is 126,100 sq. m.; pop. 1,216,300.

IVORY NUT OR **VEGETABLE IVORY** (Phyl. *elephas macrocarpa*). Dwarf tree of the order Palmae, native of the north of S. America. The greater part of the trunk lies along the



Ivory Nut. Foliage and fruit, with open nut on right

IVRY, BATTLE OF. Fought between Henry IV of France and the forces of the Catholic League, March 13, 1590. The two armies met near Ivry, 42 m. from Paris. The fight was short, the Leaguers being utterly defeated. Henry is estimated to have had about 11,000 men against 22,000. The battle is the subject of a well-known ballad by Macaulay.

Ivry-sur-Seine is a suburb of Paris on the left bank of the Seine, 4½ m. S.S.E. of the city, immediately outside the fortifications. On the river bank above Pont de Conflans is a harbour for river traffic, the Port d'Ivry.

IVY (*Hedera helix*). Climbing shrub of the order Araliaceae, native of Europe, N. Africa, and Asia. In old specimens the trunk may be nearly 1 ft. in thickness, and it reaches to the tops of tall trees and buildings, clinging to its support by peg-like rootlets. The thick, glossy leaves have five lobes, which vary in depth and the acuteness of their points; the upper leaves are oval or heart-shaped without lobes. The yellow-green flowers grow in umbels, and are produced from Sept. to Nov. The fruit is a small, black berry.



Ivy. Foliage and fruit of the climbing shrub



IXIA. Flowers of the South African herb

IXIA. Genus of bulbous herbs of the natural order Iridaceae. Natives of S. Africa, they have narrow sword-shaped leaves and spikes of showy salver-shaped tubular flowers. The flowers of the ixia vary through white, pink, and rose to dark red and blue, or cream colour to orange.

IXION. In Greek mythology, king of the Lapithae in Thessaly. Having murdered his father-in-law, he was taken to heaven by Zeus for purification. For attempting the virtue of Hera, wife of Zeus, he was condemned to be bound to a continuously rolling wheel in the nether world. See Hera

J. Tenth letter of the English and Latin alphabets, although its use in Latin texts is now generally abandoned. Its English value is that of g in gem 1 and J were once used in English indiscriminately, and were not separated in dictionaries until the middle of the 17th century. See Alphabet.

JABBOK (mod. Nahr ez Zerqa) Stream in Gilcad, Transjordan. A tributary of the Jordan, 110 m. long, it separated the kingdom of the Amorites from that of Bashan. Jacob's wrestling with the angel took place on its bank (Gen. 32).

JABESH-GILEAD. One of the chief cities in Gilcad. Its inhabitants were slain for refusing to help the Israelites against the Benjaminites (Judges 21), and Saul and his sons were buried close by (1 Sam. 31).

JABIRU (Mycteria). Genus of large birds of the stork family. They are found in India, Africa, Australasia, and S. America. Some have almost naked heads and necks, and the beaks are large and massive. The legs are very long, the toes comparatively short. The American species has white plumage, the African black and white. See Stork.



Jabiru, the South American species

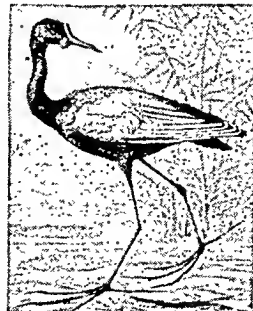
JABORANDI (*Pilocarpus jaborandi*). Brazilian plant from whose leaves is prepared the nitrate of an alkaloid, pilocarpine. Externally, preparations of pilocarpine are employed to stimulate the growth of the hair; internally, to promote sweating in certain cases of Bright's disease. Applied to the eye, pilocarpine causes contraction of the pupil.

JACAMAR (Galbidae). Bird of tropical S. America, related to the woodpecker. Somewhat resembling a large humming-bird, it has beautiful plumage, reflecting metallic hues. It feeds chiefly on insects, and nests in holes in river banks.



Jacamar, bird of South America

JACANÁ (Pardidae). Group of birds found in India, Australasia, and the tropical regions of Africa and America. Including about ten species, they resemble coots, but are remarkable for their long legs and the extraordinary length of their toes, which enables them to walk on the floating leaves of large water-lilies. They feed upon insects, and make nests which sometimes float on the water.



Jacanà. Long-toed aquatic bird of the Tropics

JACK. Word used in many senses. The most common is as a familiar term of endearment in lieu of John, derived from Jacken, a variant of Jankin, diminutive of John. It is given to the heroes of many popular nursery tales, e.g. Jack the Giant-killer. This nominal use appears in Jack Tar, Jack Frost, cheap-jack, and many others. In an easily derived sense the word is applied to things which supplied the place of a boy-help, e.g. a boot-jack, and

thence to other purely mechanical appliances, such as the apparatus for raising weights. Its other use as a diminutive is equally easily

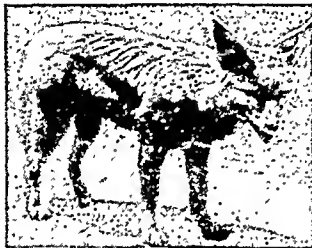


Jack. Garage implement used for lifting motor vehicles.

building operations known as a jack rafter

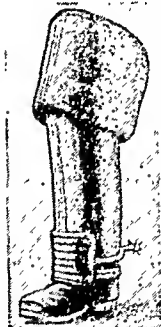
JACK, RICHARD (b. 1866). British painter Born at Sunderland, he studied in Paris at the Académie Julian, and did much black and white illustration. He was regarded as the most brilliant student of his day. He first exhibited at the R.A. in 1893. In 1912 his *Rehearsal with Nikisch* was purchased by the Chantrey Trustees. A member of the royal society of portrait painters, he became R.A., 1920. His portrait of King George V is notable.

JACKAL (*Canis aureus*). Animal of the dog tribe, common in Africa and S. Asia. Jackals are nearly related to the wolves, but are much smaller and have short, bushy tails. The Egyptian jackal is the largest, being about 50 ins. in total length and 16 ins. high at the shoulder. The general colour is brown of various hues, but one African species has a saddle of silvery black, while the rest of the body is bright tan. Jackals roam mainly at night and feed upon carrion and small animals, sometimes upon fruit and sugar-cane.



Jackal. Specimen of the black backed African variety

JACKASS. Male of the domesticated ass or donkey. Laughing Jackass (q.v.) is the popular name for an Australian bird (*Dacelo gigas*) belonging to the kingfisher family.



Jack Boot of 17th century
S. Kens. Museum

JACK BOOT. High riding boot of the 17th century. It reached above the knee, and had a large piece of leather covering the instep. It was superseded by a similar boot, cut away at the top, introduced by the duke of Wellington. A modified jack boot is still worn by fishermen.

JACKDAW (*Corvus monedula*). Bird of the crow family, common in Great Britain. Much smaller than the rook, it may be recognized by its greyish neck, white eye, and smaller beak.

It is commonly found about castles and church towers, where it builds its nest in holes in the masonry. It feeds mainly on worms, grubs, and insects.

JACKSON, ANDREW (1767-1845). American statesman. Born, probably in Lancaster county, S. Carolina, March 15, 1767, he was member of Congress, 1796-97, and senator, 1797-98. He held a command in the war against Great Britain, gained a signal victory at New Orleans, Jan. 8, 1815, and crushed the Seminole Indians in 1818. In 1821 he was made governor of Florida, and from 1823-25 was a senator. He was elected president in 1828, and in 1832 was re-elected. His term is memorable for the



Andrew Jackson, American statesman

bank war, due to his veto of the bill for renewing the charter of the Bank of the United States. He died June 8, 1845.

JACKSON, SIR FRANCIS STANLEY (b. 1870). English cricketer and politician. Born Nov. 21, 1870, he was educated at Trinity College, Cambridge, and was soon known as a cricketer. In 1893 he was captain of Cambridge, and he became one of the regular members of the Yorkshire team. He played several times for England against Australia, being captain in 1905, and for the Gentlemen. Both as a batsman and a bowler, Jackson was one of the finest all-round cricketers of the time. From 1915-26 he was M.P. for the Howdenshire div. of Yorkshire. In 1927 he was appointed governor of Bengal, and was knighted.



Sir Stanley Jackson
English cricketer
Elliott & Fry

JACKSON, JOHN (1769-1845). English pugilist. The son of a London builder, he was born Sept. 28, 1769. He became champion in 1795, and retained the title until 1803, although he had only three fights during the period, his first a victory over George Fewterel, 1788, his last an easy victory over Mendoza at Hornchurch, Essex, April 15, 1795. After his retirement Jackson became famous as a teacher of boxing, and Byron, one of his pupils, celebrated him in verse. His nickname was Gentleman Jackson. He died Oct. 7, 1845.

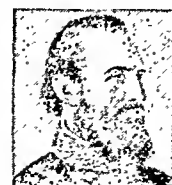
JACKSON, PETER (1861-1901). Negro boxer. Born July 3, 1861, at Porto Rico, West Indies, his first fight took place in Sydney, where he eventually won the championship of Australia by beating Tom Lees in 1886. In 1891 he fought his famous drawn battle of 61 rounds with James J. Corbett. His crowning victory was over Frank Slavin on May 30, 1892, at the National Sporting Club, London. He died in Australia, July 13, 1901.



Jackdaw, a bird of the crow family

JACKSON, SIR THOMAS GRAHAM (1835-1924). British architect. Born at Hampstead, Dec. 21, 1835, he trained as an architect under Sir Gilbert Scott. In 1861 he began to practise, and during the next fifty years was responsible for many important buildings. Among these are a number at Oxford, including the new Radcliffe Library, additions to some of the colleges, various museums and laboratories, and the city high school. His many restorations include Winchester Cathedral, Bath Abbey, and Christchurch Priory. Jackson was made A.R.A. in 1892 and R.A. in 1896. In 1913 he was created a baronet. He died Nov. 7, 1924.

JACKSON, THOMAS JONATHAN (1824-63). American soldier, commonly known as Stonewall Jackson. Born Jan. 21, 1824, he served in the Mexican War, 1845-48, winning the rank of brevet-major. His religious convictions induced him to leave the army, and in 1851 he went to Lexington military academy as instructor. On the outbreak of the Civil War he joined the Confederates, and in 1861 was promoted



Thomas J. Jackson
American soldier

brigadier and then major-general. In 1862, by a rapid march, he joined Lee in the seven days' battle for the defence of Richmond and helped in McClellan's defeat. From this time he became Lee's most trusted subordinate. He gained victories over the Federals at Cedar Mountain in the second battle of Bull Run and at Harper's Ferry.

Jackson's corps had a share in the battle of Antietam and was equally to the fore at Fredericksburg, while the Confederate success at Chancellorsville was due in great part to his skill. After the battle he was shot by mistake by his own outposts. A wound in the left arm made amputation necessary; pneumonia supervened, and Jackson died May 10, 1863. See American Civil War.

JACKSONVILLE. Seaport and winter resort of Florida, U.S.A. It is on the St. John's river, 140 m. S.W. of Savannah. Cotton, phosphates, lumber, and fruit are among the chief exports. The industries include iron-founding, the manufacture of lumber products, fertilisers, cigars, and there are shipbuilding yards and brick works. Pop. 95,450.

JACK THE RIPPER. Popular name given to an unaptured criminal who murdered and mutilated eight women in the East End of London during 1887-89. Sir Robert Anderson has left it on record that the murderer was probably a sexual maniac, a Polish Jew known to the police.

JACOB. Younger son of Isaac and Rebekah (Gen. 25). Having obtained his elder brother Esau's birthright and his father's blessing by stratagem, he became his father's heir and one of the three great patriarchs of the Israelites. He served his uncle Laban 14 years as a shepherd and obtained Leah and Rachel as his wives. The sale of his son Joseph to Egypt was a bitter grief, only allayed when a famine caused him to send his other sons to Egypt to buy corn, and the high position of Joseph was discovered. Later he removed with his family to Egypt, where he was honourably received by Pharaoh, and spent the remainder of his life in prosperity.

JACOB, SIR CLAUD WILLIAM (b. 1863). British soldier. Born Nov. 21, 1863, he entered the Worcestershire Regiment in 1882, and two years later transferred to the Indian Staff Corps. In 1908 he attained the rank of colonel. In 1914 he went to France at the head of the Dehra Dun brigade of the Indian army corps, and in Sept., 1915, took over the Meerut division. He took command of the 21st division in Nov., 1915, and in May, 1916, commanded the 2nd corps at the battle of the Somme in 1916, and throughout 1917 and the German offensive of 1918. In 1920 he was appointed chief of the Indian Army general staff, and promoted field-marshal in 1926, in which year he became secretary, military dept., India Office. He was knighted in 1917, and retired in 1930.

JACOBINS. Political society in France prominent during the Revolution. The Jacobins at first were constitutional monarchists, and styled themselves the Friends of the Constitution, including among their number d'Aiguillon, Mirabeau, de Noailles, Grégoire, Barnave, and Chénier.

After the king's flight to Varennes, 1791, there was a schism in the club, and henceforth the extreme republicans—Robespierre, St. Just, Marat, and Couthon—dominated the body in the capital and in the provinces. During the Terror they had unrivalled power, but the fall of Robespierre brought their sway to an end, and the club was closed in Nov., 1794. Attempts at revival were unsuccessful. The Jacobins wore a badge showing a Phrygian cap of liberty.

JACOBITE CHURCH. Name given to the followers of Jacob Baradaeus, a

Monophysite monk of Edessa (d. 578), who re-organized and restored the sect. The name was later applied to the Oriental churches of Egypt, Antioch, and Armenia, which were charged with holding the Monophysite heresy. At the present time the Jacobite Church includes the three patriarchates of Alexandria, Antioch, and Armenia, but its bishops repudiate Monophysite doctrines and are as orthodox as those of other Oriental Churches.

JACOBITES. Supporters of James II of England and his descendants. After his flight from England in 1688, through the rest of his life and that of his son James, the Old Pretender (q.v.), the adherents of the exiled Stuarts were known as Jacobites. In Scotland they were relatively much more numerous than in England.

The Jacobites were responsible for two risings, one in 1715 and the other in 1745; but both were crushed, and 1745 marks the end of the Jacobites as a political force, although the last male descendant of James II Henry, cardinal of York, lived until 1807. As a sentiment it survived, and there were Jacobite or legitimist societies in existence in the 20th century. See Charles Edward; Culloden; Prestonpans; Stewart.

JACOBS, WILLIAM WYMARK (b. 1863). British novelist. Born in London, Sept. 8, 1863, he entered the civil service, and until 1899 was a clerk in the Post Office Savings Bank. By this time he had made a success with some short stories and with a novel. The Skipper's Wooing, and henceforward gave his whole attention to writing. His volumes of short stories of seafaring men include *Many Cargoes*, 1896; *Sea Urchins*, 1898; *Light Freights*, 1901; *Captains All*, 1905; *Short Cruises*, 1907; *Sailors' Knots*, 1909. *Ship's Company*, 1911. *Night Watches*, 1914. *Deep Waters*, 1919; and *Sea Whispers*, 1926.

The chief of his longer stories are *The Skipper's Wooing*, 1897; *A Master of Craft*, 1900; *At Sunnyside*, 1902; and *Dialstone Lane*, 1904. He was part author of a play, *Beauty and the Barge*. Jacobs also excelled in short stories of the occult, and *A Monkey's Paw*, one of the most powerful of its kind, was dramatised by L. N. Parker in 1910.



W. W. Jacobs,
British novelist
Russell

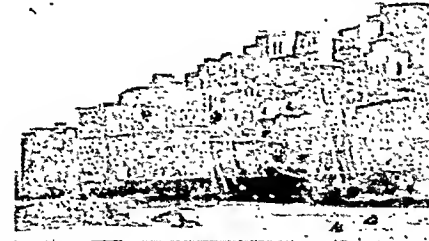
weaver and invented a loom, which was exhibited in Paris in 1801. Improvements and modifications of the original loom revolutionised the weaving industry, and in 1806 the invention was acquired for the nation. Jaquard being granted a royalty and a pension. He died August 7, 1834.

JACQUEMART, JULES FERDINAND (1837-80). French engraver and painter. Born at Paris, he studied under his father, Albert Jacquemart, his first considerable work being a series of etchings for the *Gazette des Beaux Arts*, 1859. In 1862 he supplied the plates for his father's *Histoire de la Porcelaine*, for the *Histoire de la Céramique*, and for the *Histoire du Mobilier*, and produced 60 plates for Barbet de Jonny's *Les Gemmes et Joyaux de la Couronne*, and about 400 other etchings.

JADE. Member of the pyroxene group of minerals. Hard, tough, varying in colour from white to dark green, it takes a high polish, and has been used for ages as an ornamental stone. Specimens of jade ornaments have been found in the lake dwellings of Switzerland, in ancient Egypt, Greece, etc., while some of the oldest Chinese ornamental vases are made of jade. The stone is found in S. Asia, Burma, and China.

JAEGER. Name given to a certain type of foot soldier in the armies of Germany and Austria. The word means hunter, and was applied to battalions of soldiers who were more lightly armed than the rest of the infantry, in order that they might march more rapidly and perform pioneer duties of various kinds. In France the corresponding name is *chasseur*. Before the Great War the German army had 18 regiments of jaegers.

JAEL. Wife of Heber the Kenite (Judges 4 and 5). After the defeat of Jabin's army by the Israelites under Barak and Deborah, Jabin's general Sisera fled to Jael's tent for refuge. Jael, choosing between violation of the laws of hospitality and betrayal of Israel, killed the fugitive in a manner described



Jaffa. The seaport town of Palestine from the sea

differently in the prose of ch. 4 and in Deborah's song (the earlier version) in ch. 5.

JAFFA. Seaport of Palestine, the ancient Joppa. It is on the Mediterranean about 50 m. N.W. of Jerusalem, with which it is connected by rly. Its harbour is suitable only for small vessels. It has long been famous for its oranges, and is the centre of a fair amount of trade, oil and wool being amongst its exports. The town was taken by Napoleon in 1799, and it was captured by the British in the Palestine campaign, Nov. 17, 1917. Pop. 47,709.



Jacobus. Obverse and reverse of the gold coin struck by James I

JAGERSFONTEIN (Dutch, hunter's spring). Town of the Orange Free State, S. Africa, 9 m. E. of Fauresmith. An important diamond mine was discovered here in 1878. Pop. 9,500.

JAGUAR (*Felis onca*). Largest species of the spotted cats of Central and S. America and Argentina. A savage beast, heavily



Jaguar, the American member of the cat tribe
Gambier Bolton, F.Z.S.

built, the jaguar's coloration is similar to that of the leopard, but the black spots are larger and squarer, and in more definite rows.

Arboreal in its habits, the jaguar is destructive to monkeys, alligators, and turtles, and destroys cattle, horses, and sheep.

JAGUARONDI (*Felis jaguarondi*). Species of wild cat. Found in Central and S. America, it varies in colour from almost black to a reddish grey, and preys upon birds and small mammals. Its length is about 4½ ft.

JAIN. Member of a Hindu faith. Said to date from the 6th century B.C., Jainism rejected the Brahman sacred writings and evolved a kind of pantheon of Jina or Jains. Its followers believe in a future existence for all forms of life, and try to avoid killing even the smallest creature. The temples are noted for their superb architecture. See Calcutta.

JAIPUR. Capital of Jaipur state, Rajputana, India. An important rly. junction, with lines to Delhi, Jodhpur, Baroda, and Bombay, it was founded in 1728. Amber, the ancient capital, is a picturesque collection of ruins 5 m. distant. Pop. 120,207.

The area of the state is 15,579 sq. m. It lies between the Punjab, Bikaner, and Ajmer-Merwara. The principal crops are millet and barley. The ruler is a maharajah, with a salute of 17 guns. Pop. 2,338,802.

JALALABAD OR JILALABAD. Town of Afghanistan. It stands on the Kahl river, 80 m. E. of the city of Kabul, in the midst of a fertile plain, near the Khyber Pass. Here in 1841-42 the British, under Sir Robert Sale, kept the Afghans at bay for about five months. Pop. 5,000.

JALAPA (*Ipomoea purga*). Tuberous evergreen climbing herb of the order Convolvulaceae, native of Mexico. The tuber yields the drug called jalap. The smooth, alternate leaves are long heart-shaped, and the silver-shaped flowers are of a purplish rose colour. Several other species of *Ipomoea* furnish jalap.



Jalapa. Foliage and flower

JAMAICA. Chief island of the British W. Indies. One of the Greater Antilles, it has an area of 4,450 sq. m. and a pop. of 860,000, of whom about 15,000 are whites. Dependent



Jacob's Ladder. Stalks with flowers and foliage

up, feather-wise, into from six to twelve pairs of smooth, lance-shaped leaflets. The stem and branches terminate in a large cluster of blue or white drooping flowers.

Jacob's ladder is the name popularly given to the carvings of angels ascending and descending on the W. front of Bath Abbey.

JACOBUS (Lat. for James). Name of a gold coin struck by James I of England. Its value was 25s. See Coinage.

JACQUARD, JOSEPH MARIE (1752-1834). French inventor. Born at Lyons, July 7, 1752, he was trained to his father's trade of

islands are Grand Cayman, Little Cayman, Cayman Brac; and the Turks or Caicos group. The coastline is broken and the interior is an elevated plateau. In the E. the Blue Mts. rise to 7,360 ft. The lower slopes of the mountains in the N. are covered with luxuriant pimento groves and flowering shrubs, and the higher levels by dense forests of ebony, cedar, mahogany, fustie, logwood, lancewood, etc. Other trees are the ceiba, mango, and acacia. The numerous rivers are small.

Over 1,000,000 acres are under cultivation, and sugar, rum, coffee, bananas, oranges, coconuts, pepper, tobacco, yams, arrowroot, tamarinds, nutmegs, and lime juice are the chief products.

The climate is warm and agreeable, but hurricanes have at times caused enormous damage. There are no indigenous mammals and only a few reptiles. The commonest birds are parrots, buzzards, humming birds, tyrant birds, and the green tody. Mosquitoes and sand flies abound.

Kingston, on the S., is the chief port and seat of government. Next in importance are Spanish Town (the old capital), Montego Bay, and Port Antonio. The governor is assisted by a privy council and a legislative assembly. There are 200 m. of rly. Jamaica was discovered by Columbus in 1494, settled by the Spaniards in 1509, and ceded to Britain in 1670.

JAMBOREE. American Indian word for a merry meeting or joyful gathering of the tribes. It has been adopted by the Boy Scouts (q.v.) for their international rallies, a noted one being that held at Birkenhead in 1929.

JAMES. River of Virginia, U.S.A. Formed by the confluence of the Cowpasture and Jackson rivers, it enters Chesapeake Bay through Hampton Roads. Its length is about 450 m. At Newport News it is crossed by a bridge 5½ m. long, one of the longest in the world. Called the Powhatan by the Indians, the river was named after James I.

JAMES. Name of a bay, a large S.E. extension of Hudson Bay, Canada, between Ontario and Quebec. It contains numerous islands. The Albany, Ekwan, Moose, and Attawapiskat rivers discharge into it on the W. side, and Rupert on the E. The water is shallow.

JAMES. Saint and apostle. A fisherman of Galilee, he was one of the sons of Zebedee and a brother of John. The two were called Boanerges, or the sons of thunder. He was put to death by Herod Agrippa, A.D. 44 (Acts 12).

James, son of Alphaeus, is called James the Less to distinguish him from the son of Zebedee (Mark, 15-16, John 19).

JAMES. Brother of Jesus Christ. The relationship implied has been much discussed. James may have been the son of Joseph by a former marriage, or a cousin of Christ. He was converted after the Resurrection. Known as James the Just, he rose to be head of the Church at Jerusalem, wrote the Epistle which bears his name, and was martyred in A.D. 62 (Acts 15 and 21).

JAMES, THE EPISTLE OF. One of the N.T. Epistles. Addressed to Christians in general, the Epistle has been regarded as in some respects a sort of charter of Christian socialism. It is perhaps the earliest book of the New Testament.

JAMES I (1566-1625). King of Great Britain from 1603-25, previously, as James VI, king of Scotland from 1567. Born in Edin-

burgh, June 19, 1566, he was the son of Mary, Queen of Scots, and Lord Darnley. His personal reign began in 1583, and until 1603

lived mainly at Stirling, his person occasionally in danger of seizure. As king of England he disappointed the hopes of both Puritans and Catholics. Down to 1612 he was guided mainly by the opportunist statesmanship of Robert Cecil, earl of Salisbury. He stopped the long war with Spain, but was dragged into the Thirty Years' War. He died at Theobalds, March 27, 1625.



James I.
King of Great Britain
After Paul van Somer

James married in 1589 Anne, daughter of Frederick II, king of Denmark. Three of his children were Henry, prince of Wales (d. 1612), Charles I, and Elizabeth, from whom the present royal family is descended. James was a man of poor physique and ungainly appearance, untrustworthy, tactless, thriftless, and slovenly. On the other hand, he had been carefully educated and was a thinker and writer, his Counterblaste to Tobacco and his Daemonologie, a short work against witchcraft, being still read. See Gowrie, Earl of; Gunpowder Plot; Ruthven; Scotland; consult also The First Two Stuarts, S. R. Gardiner, 1900.

JAMES II (1633-1701). King of Great Britain and Ireland 1685-88. The younger son of Charles I, he was born at St. James's Palace, Oct. 14, 1633, and succeeded to the throne Feb. 6, 1685. He married (first) in 1659, Anne Hyde, daughter of Lord Clarendon, who bore him two daughters, Mary and Anne; and (in 1673) Mary of Modena, the mother of his son James Edward.

As a young man James displayed marked courage in the field, and as admiral he was devoted to the development of the navy. As king he drove both Anglican and constitutional sentiment into opposition by replacing Churchmen by Romanists, and by the Declaration of Indulgence. The arrest, trial, and acquittal of the seven bishops, 1688, turned public sentiment solidly against him, and when his son-in-law William of Orange landed at Torbay (Nov. 5) James took refuge with Louis XIV of France. His defeat at the battle of the Boyne (q.v.) in 1690 and the capitulation of Limerick in 1691 ended all his hopes. He returned to France, and died Sept. 6, 1701, leaving one son, James Edward.

JAMES II. King of Great Britain
After Kneller

JAMES. Name of six kings of Scotland. The last of them, James VI, became king of Great Britain and Ireland as James I.



Jamaica. Map of the largest of the British West Indian Islands

James I, the third son of Robert III, was born at Dunfermline in July, 1394. He became king in 1406, but was a prisoner in England until 1423. He reigned until Feb. 20, 1437, when he was murdered at Perth. He left a son, James II, and six daughters, one of whom became the wife of Louis XI of France. James was a man of exceptional culture. Two poems by him are extant: The Kingis Quair (King's Book) and Good Counsel.

James I was succeeded by his son, James II, who was born Oct. 6, 1430. He assumed power in 1449 and was involved in warfare with the Douglas and with England. He was killed whilst besieging Roxburgh Castle, Aug. 3, 1460.

James III, who was born July 10, 1451, succeeded his father James II in 1460, but regents governed the kingdom until about 1469. In a battle with some rebels, led nominally by his son, James was defeated and fled. He took refuge at Beaton's Mill, where he was killed, June 11, 1488.

James IV was born March 17, 1473. He married Margaret, daughter of Henry VII of England, an alliance which led to the union of the two crowns in 1603. But he soon quarrelled with Henry VIII, and when war broke out the two armies met at Flodden, where, on Sept. 9, 1513, James was killed.

James V, who was born at Linlithgow, April 10, 1512, was not two years old when his father's death at Flodden made him king. In Nov., 1542, the Scots were routed by the English at Solway Moss, and the king, grieving over this disaster, died at Falkland, Dec. 14. He married Mary of Guise, and was the father of Mary Queen of Scots.

JAMES, THE OLD PRETENDER (1688-1766).

Jacobite prince, also known as James Edward Stewart. Born in London, June 10, 1688, he was the son of James II and Mary of Modena. He was at St. Germain when his father died in 1701. Several disastrous attempts were made to secure his claim to the throne, the most notable being in 1715 and 1745. James married, in 1719, Maria Clementina, granddaughter of John Sobieski, king of Poland, and had two sons, Charles Edward and Henry, cardinal of York. James died in Rome, Jan. 2, 1766, and was buried in St. Peter's. See Charles Edward.



James Edward,
The Old Pretender

JAMES, HENRY JAMES, BARON (1828-1911).

British lawyer. The son of a doctor, he was born at Hereford, Oct. 30, 1828, educated at Cheltenham College, and called to the bar in 1852; he entered Parliament as a Liberal in 1863, being in succession solicitor-general and attorney-general. He was knighted in 1873. From 1885 a leading Liberal Unionist and an opponent of tariff reform, he was chancellor of the duchy of Lancaster from 1895, when he was made a peer, till 1902. He died Aug. 18, 1911. He was unmarried.

JAMES, HENRY (1843-1916). Anglo-American novelist. He was born in New York, April 15, 1843, son of Henry James, a well-known Swedeborgian, and younger brother of William James (q.v.).

The first of his novels to bring him recognition was Roderick Hudson, 1875. This was followed by some forty to fifty books in all, most of them novels. From 1869 onwards he made his home in Europe, living chiefly in London and at Rye in Sussex. Naturalised as a British subject, July, 1915, he was given the O.M. in Jan., 1916, and died Feb. 28, 1916.



Henry James, Anglo-American novelist
Hoppe

His novels include *The American*, 1877; *The Europeans*, 1878; *Washington Square*, 1880; *The Bostonians*, 1886; *The Tragic Muse*, 1890; *The Awkward Age*, 1899; *The Wings of a Dove*, 1902; *The Golden Bowl*, 1905; and *Julia Bride*, 1909. James's wide knowledge of French literature is reflected in his French Poets and Novelists, 1878

JAMES, JOHN ANGELL (1785-1859). British divine. Born at Blandford, June 6, 1785, he was apprenticed to a shopkeeper at Poole. Leaving that work, he studied for the ministry at Gosport. In 1805 he was chosen minister of a church in Carr's Lane, Birmingham, and for 50 years he was one of the foremost preachers of the Congregational denomination. James died Oct. 1, 1859.

JAMES, MONTAGUE RHODES (h. 1862). British scholar. Born Aug. 1, 1862, he became a fellow of King's College, Cambridge, and in 1905 was elected provost. He resigned in 1918 on being made provost of Eton. At Cambridge he was also Sanders reader in bibliography, director of the Fitzwilliam museum, and from 1913-15 vice-chancellor. He wrote many books on Biblical and historical subjects, did much bibliographical work, which gave him material for his *Wanderings and Homes of MSS.*, 1919, and was the author of *Ghost Stories of an Antiquary*, 1905, and *More Ghost Stories*, 1911. In 1930 he was given the Order of Merit.



Montague R. James,
British scholar

JAMES, WILLIAM (1842-1910). American philosopher. Born in New York, Jan. 11, 1842, brother of Henry James, the novelist, in 1881 he was appointed professor in Harvard University. In 1899-1901 he delivered the Gifford lectures on Natural Religion at Edinburgh, and the Hibbert lectures at Manchester College, Oxford, 1909. He died Aug. 26, 1910. James was an important representative of modern introspective psychology and radical empiricism or pragmatism. See Pragmatism.

JAMESON, SIR LEANDER STARR (1853-1917). British administrator. Born in Edinburgh, Feb. 9, 1853, he qualified in medicine, and, owing to ill-health, established himself at Kimberley, South Africa, in 1878. Here began his lifelong friendship with Cecil Rhodes, at whose invitation he gave up medical practice to go to Matabeleland in 1889, the chief, Lobengula, having been one of his patients.

The Chartered Company was duly formed, and in 1891 "Dr. Jim" was appointed administrator of Rhodesia. While acting in this capacity he organized the Jameson Raid. For this Jameson was sentenced to 15 months' imprisonment, May, 1896, but was released in Dec. owing to ill-health. In 1900 he became a member of the Cape Legislative Assembly for Kimberley, and was premier from 1904-1908. Made a baronet in 1911, in 1912 he returned to England, and in 1913 was appointed chairman of the British South Africa Company. He died in London, Nov. 26, 1917.



Sir L. Starr Jameson,
British administrator
Russell

JAMESON RAID. Name given to a coup d'état attempted in S. Africa in 1895 by Leander Starr Jameson. With the connivance and support of Cecil Rhodes, Jameson organized a force of some 500 men to invade the Transvaal simultaneously with a rising of

Uitlanders in Johannesburg. The latter was postponed, but Jameson crossed the Bechuanaland border with his men on Dec. 28, 1895. On Jan. 2 his small force was surrounded by the Boers under Cronje at Doornkop, and after 24 hours was compelled to surrender. The Boers handed them over to the British authorities, and Jameson with his military chief, Sir John Willoughby, and minor officers, were sentenced to various terms of imprisonment. See Rhodes, Cecil; South Africa.

JAMESTOWN. Town of Virginia, U.S.A. The first permanent English settlement in U.S.A., it was founded in 1607 on a peninsula in the river James, some 30 m. from its mouth. Here, in 1619, the first legislative assembly in America met, and slavery began in the original thirteen colonies. In 1699 the seat of government was transferred to Williamsburg. The action of the river James converted the peninsula into an island, which, with the ruins of a church, the fort, and other remains, were acquired in 1900 by the Association for the Preservation of Virginia Antiquities. In 1907 an exhibition was held to commemorate the tercentenary of the settlement.

JAMSHID. Traditional ruler of Persia. He is reputed to have flourished about 1000 B.C., and his memory is associated with the possession of a magical cup that contained the elixir of life. Jamshid's cup is referred to in Edward Fitzgerald's *Omar Khayyam*, and in Thomas Moore's *Lalla Rookh*.

JANICULUM. Hill of Rome. On the west bank of the Tiber, it lies to the W. of the city, and has an altitude of 275 ft. It was connected with the E. bank by a wooden bridge, the Pons Sublicius. Along the river front many villas were erected, inhabited mostly by foreigners and Jews, the latter forming a community here to the end of the 15th century. It was named from Janus, a mythical king of Latium, who is said to have built a citadel on the ridge. The site is now occupied by the district of Trastevere. See Rome.

JANINA or **YANNINA.** Town of Greece. On the lake of the same name in Epirus, and near the Albanian frontier, it is the seat of a Greek archbishop, and the capital of the department of Janina. From 1788 to 1818 it was famous as the stronghold of the Lion of Janina, Ali Pasha, who made himself independent, and tyrannised over the surrounding country. It was captured from the Turks during the first Balkan War. During the Great War it was occupied for a time by the Allies. Pop. town, 20,485; district, 180,418.

JANISSARIES or **JANIZARIES** (Turk. new soldiery). Special regiments of the Turkish army. The corps, recruited chiefly from boys taken as tribute from his Christian subjects, was first instituted by the sultan Orkhan (1326-59), was more fully developed by Murad I (1359-89), and became the flower of the Turkish army, specially distinguishing itself at the taking of Constantinople in 1453. From the 17th century onwards the tribute of Christian boys ceased to be levied, and the Janissaries became simply a corps of picked men. In 1825 a great mutiny of the Janissaries broke out under the sultan Mahmud II, and in 1826 the force was abolished.



Janissaries. Soldier of
the Turkish corps
From *The Day of the Crescent*,
courtesy of Camb. Univ. Press

JAN MAYEN ISLAND. Volcanic island in the Greenland Sea. N.E. of Iceland, it covers about 160 sq. m. Seal and whale fishing are carried on in summer, but the island is not permanently inhabited.

JANSENISM. Name given to the teachings of Cornelius Jansen (1585-1638), a Dutch Catholic divine, and his followers. Jansen was a professor at Louvain until made bishop of Ypres in 1636. He died May 6, 1638.

In 1640, Jansen's *Augustinus* was published, and this started the movement which aimed at reforming the Roman Catholic church from within. Its centre was Port Royal, and Pascal was one of its adherents; indeed his *Provincial Letters* were inspired by it. The movement aroused much opposition; Port Royal was destroyed and the Jansenists driven from France.

A section of them found a haven in the Netherlands, where the small existing Jansenist Church maintains its claim to episcopal succession by scrupulous adherence to the rules of the Roman pontifical, while rejecting the dogmas of papal infallibility and the Immaculate Conception. The Jansenist Church has conferred consecration on the Old Catholic bishops of Germany and Switzerland.

Jansen taught that man before the Fall was perfect, with a will subject only to his love of God, but subordinate only as love is subordinate to its object; that after the Fall salvation depended upon divine grace manifested by personal experience of predestination or inward spiritual joy, which experience was a qualification for communion.

JANSSEN or **JOHNSON, CORNELIUS** (c. 1593-1664). Dutch painter. He was born in London and spent the greater part of his life in England, where he was known as Johnson. He worked for a time with Van Dyck, by whom his style was influenced, at the court of Charles I. Among his portraits are those of Charles I. at Chatsworth; others are in the National Gallery, London, at The Hague, and Dresden.

JANUARIUS (4th century A.D.). Saint and martyr. He is said to have been a native of Naples, and bishop of Beneventum in the reign of Diocletian. Having visited some Christians who had been imprisoned at Pozzuoli for their faith, he was arrested and thrown to the lions; but as they did not injure him, he was beheaded. His day is Sept. 19.

JANUS. In Roman mythology, a god who presided over the beginnings of things. He was thus the patron of births, of the first month of the year, which was named after him, and of the first steps in all human activities. In art, he is represented with two heads, looking in opposite directions.

JAPAN. Empire of eastern Asia. Known to the Japanese as Nippon (Nihon) or Dai Nippon, Japan is a member of the League of Nations. The empire consists of a chain of islands in the N.W. of the Pacific Ocean, together with various dependencies. Japan proper comprises the four large islands of Honshu, Kyushu (Kiushiu), Shikoku, and Hokkaido or Yezo, and a number of smaller islands. These, with Formosa (Taiwan), Korea (Chosen), Karafuto (the S. part of Sakhalin), the Pescadores, the leased territory of Kwangtung, and the former German islands in the Pacific N. of the equator, namely, the Marshall, Caroline and Ladrone Islands, which are governed by Japan under mandate, make up the empire. Tokyo is the capital. The area of the Japanese empire is 265,129 sq. m. Pop. 83,455,000.



Janus, the two-headed god
From a coin

The islands are mountainous, only about one-sixth of the land being available for cultivation. Of many volcanoes the sacred mountain, Fujiyama, is well known. Earthquakes are frequent. The coastline is very broken, and contains many good harbours. The Inland Sea, an island-studded inlet of the Pacific S. of Honshu, is one of the most picturesque seas in the world. Japan is famed for its wealth of flowers and flowering trees. The country is subject to greater extremes of

The Japanese claim that their emperors trace descent in unbroken line from Jimmu, who ascended the imperial throne in 660 B.C. For centuries Japan followed a policy of national isolation. The 16th century marked the beginning of foreign trade, but in the 17th all intercourse with Europeans and all trade, except with the Dutch, were proscribed. Not until 1859 was the country open to foreign trade and residence. In 1871 the feudal system was suppressed, and Japan resolved henceforth to model her national life no longer on the old and effete civilization of China, but on that of Europe. From that date the country has steadily progressed, and for many years Japan has been one of the Great Powers. This was seen in her war with Russia, 1904-5, and her participation in the Great War.

The emperor, known to foreigners as the Mikado, exercises the executive power with the assistance of a cabinet appointed by and responsible to himself. The diet consists of a house of peers and a house of representatives. In 1925 manhood suffrage was introduced. In 1929 Baron Tanaka was succeeded as prime minister by Osachi Hamaguchi. Consult *The Story of Old Japan*, J. H. Longford, 1910; *The Evolution of New Japan*, J. H. Longford, 1913; *Japan (The Nations of To-day)*, J. H. Longford, 1928; *The Romance of Japan through the Ages*, J. A. B. Scherer, 1927; *Modern Japan*, G. C. Allen, 1928.

The Japan Society is a British society founded in 1892 for the study of the arts and industries of Japan. Its headquarters are at 22, Russell Square, London, W.C.1.

JAPHETH. One of the sons of Noah, whose son Javan was the reputed ancestor of the Ionians (Gen. 10. 1-4). The name Japhetic, now replaced by Aryan or Indo-European, was formerly used to designate the Caucasian peoples of Europe and parts of Asia, as contrasted with the Hamitic and Semitic.

natives of, or were first observed in, Japan. The word is in common use among gardeners, who generally mean by it *Pyrus japonica*.

JARGOON. Variety of the mineral zircon, usually yellow in colour. The mineral has the curious property of losing its colour when heated, and the well-known Matura diamonds of Ceylon are varieties of jargoon which have been so treated. It is much used as a gem, and is found in Ceylon, and in New South Wales and Queensland, Australia.

JARRAH. Dark coloured, close-grained wood of *Eucalyptus marginata*. It is much like mahogany, and very durable when kept dry. The tree is a native of Australia, and has a light-coloured bark, from which it is known as yellow jacket.

JARROW. Borough and river port of Durham. It is on the Tyne, 4 m. W.S.W. of South Shields on the L.N.E.R. Its growth is due to the ship-building industry established here by Sir C. M. Palmer. There are iron foundries, engine works, rolling mills, and chemical and paper manufactories, and near are extensive collieries. From Jarrow Slake, a river lay between Jarrow and South Shields, coal is shipped. In the monastery here the Venerable Bede spent most of his life. Pop. 35,590.

JASMINE or **JESSAMINE.** Family of hardy and exotic climbing and trailing plants of the order Olacaceae, genus *Jasminum*. Of the hardy sorts the most popular is *J. officinale*, which bears white star-like flowers in summer time and flourishes in any ordinary garden soil. *Jasminum nudiflorum*, the yellow winter jasmine, is a valuable climbing plant for town gardens.



Jasmine. Spray of *J. officinale*

JASON. In Greek mythology the leader of the Argonauts. He was the son of Aeson, king of Iolcus in Thessaly, whose throne had been usurped by his brother Pelias. Pelias, to get rid of the rightful heir, persuaded him to organize an expedition to fetch the famous Golden Fleece from Colchis on the Black Sea. On his return Jason found that Pelias had murdered his father. To avenge the murder, Medea, Jason's wife, persuaded the daughters of Pelias to cut their father in pieces and boil him in a cauldron. Expelled for this deed, Jason and Medea then went to Corinth, where Jason deserted his wife for Creusa. Medea avenged herself by sending Creusa a poisoned robe, which burned her to death, and by killing her children by Jason. See Argonauts.

JASPER. Crystalline variety of quartz. It varies in colour from reddish brown to brownish black, and is often streaked with white, grey, yellow, and blue bands. It takes a high polish and is used extensively as an ornamental stone.

JASPER. Ware or form of porcelain invented by Josiah Wedgwood. It had a smooth, unglazed surface, of a uniform colour, on which were placed cameo-like embellishments in white. As a rule Wedgwood adopted Grecian forms for his decorations.

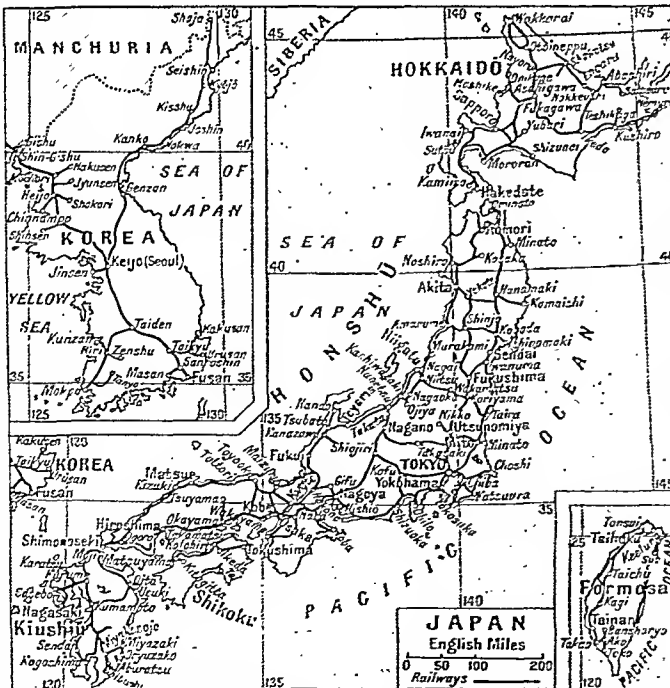
JASSY. Yassy, or Iasi. City of Rumania, formerly the capital of Moldavia. It is about 200 m. N.E. of Bukarest, is an important rly. centre, and trades in cereals, petroleum, salt, and cattle. It has a university. In 1821 Alexander Ypsilanti here raised the standard of Greek independence against Turkey. During the Great War Jassy was for two years the seat of the Rumanian government after it left Bukarest in Dec., 1916. Pop. 80,000.



Japan. 1. Buddhist priest. 2. Typical hawk. 3. Little girls carrying babies on their backs. 4. Jinricksha, the Japanese cab

heat and cold than Britain. The E. coast is milder than the W. and the southern islands than the northern. The rivers are increasingly used for developing electric power.

Rice is the staple food of the people. Wheat and other cereals, cotton, tea, tobacco, and fruit are grown, and silk is widely cultivated. The minerals include copper, coal, iron, antimony, sulphur, zinc, and petroleum. There are large deposits of kaolin. The forests produce valuable timber, and the fisheries are important. Japan's two leading industries are the manufacture of cotton and silk goods. The engineering industry has made great strides, especially in the production of industrial and electrical machinery and internal combustion engines. Exports include silk and cotton, tea, matches, porcelain, earthenware, paper, marine products, and toys. There are over 11,000 m. of rlys., and a number of wireless stations.



Japan. Map showing the provinces, with insets, Korea and Formosa

JAPONICA. Species name applied by botanists to indicate that certain plants are

JAUNDICE (Fr. jaunisse, yellowness). Symptom which arises in the course of many diseases of the liver. The commonest cause is obstruction of the bile duct, through which the bile passes into the duodenum. If this becomes obstructed by a tumour or gall-stone, the bile is held up in the liver, and is forced into the blood stream. The earliest sign of jaundice is the yellow tinting seen in the whites of the eyes. As the condition progresses the whole skin changes from a lemon yellow to a deep olive green in colour. Treatment consists in the removal of the cause.

JAURÈS, JEAN LÉON (1859-1914). French Socialist. Born at Castres, Sept. 3, 1859, he was elected deputy in 1885. Jaurès joined the Socialist party in 1893, and henceforward was its chief orator and parliamentary leader. In 1893 Jaurès joined the staff of *La Petite République*, but left it in 1904 and founded *L'Humanité*. His action as an apostle of international peace and the reduction of armaments led to his assassination, on July 31, 1914, by a youth, Raoul Villain, who was tried and acquitted in 1919. Jaurès published many books on socialism and allied subjects.



Jean Jaurès,
French Socialist

Raoul Villain, who was tried and acquitted in 1919. Jaurès published many books on socialism and allied subjects.

JAVA. Island of the Malay Archipelago, belonging to the Netherlands. It is separated from Borneo by the Java Sea, from Sumatra by the Strait of Sunda, and from the island of Bali by the Bali Strait. The area, including the island of Madura, is 50,745 sq. m. Pop., with Madura, 37,384,343.

Low-lying and covered with mangrove swamps on the N., the interior is mountainous, with many active and extinct volcanoes. The S. coast is bold and rugged, and on the N. coast are several good harbours. The chief towns are Batavia, Surabaya, and Tjilatjap. Large areas are under rice, the staple crop, and petroleum is found. Before the landing of the Portuguese in the 16th century, Java was the seat of powerful Hindu princes. In the 16th century the Portuguese were ousted by the Dutch. Java has yielded fossil bones of the earliest known anthropoid exhibiting the erect posture of man. See Asia.

JAVELIN. Short, light spear, which can be thrown. As used for military purposes in classical times, its estimated range was from 30-40 yards. In England, javelin-men were formerly provided by the sheriffs as an escort for judges on assize circuit. Javelin throwing was revived in the modern Olympic games. See Spear.

JAW. Bones of the mouth containing the teeth. The upper jaw is formed by the margins of the two superior maxilla bones. They lie beneath the cheeks and form part of the orbits and the larger part of the nose. The bony structure into which the teeth are inserted is termed the alveolar margin. The lower jaw is formed by the two inferior maxilla bones, which are united in the chin in front. At the back the lower jaw articulates on each side with a cavity, the glenoid fossa of the temporal bone. The jaw-bone is

roughly shaped like an L, the vertical part being known as the ramus, and the horizontal part as the body, the point where the two parts meet forming the angle of the jaw.

JAY (Garrulus). Genus of birds of the crow family, corvinae, natives of Europe, Asia, Africa, and North America. The typical species is the Common Jay (*G. glandarius*) of British woodlands and the greater part of Europe. About the size of a jackdaw, its general colour is cinnamon with a grey crest which is streaked with black, black bill and moustache and a white throat.



Jay. Specimen of
Common Jay

JAY, JOHN (1745-1829). American statesman. Born in New York, Dec. 12, 1745, he became a lawyer and entered public life as secretary of a commission appointed to settle the boundary between New York and Connecticut. In the troubles between Britain and her colonies, Jay was prominent, though not as an extremist. He drew up the constitution of New York State, and was chief justice of his state for two years (1777-79). Jay went to Paris in 1782 to assist Franklin and Adams in concluding the treaty of 1783 with Great Britain. He was secretary for foreign affairs 1784-90, and chief justice of the Supreme Court 1790-95. From 1795-1801 he was governor of New York state. He died May 17, 1829.

His son, William Jay (1789-1858), was an opponent of slavery and an advocate of peace.



Java. Map of the most progressive of the Dutch East Indian islands, famed for its tropical products

JEANS, SIR JAMES HORWOOD (b. 1877). British scientist. Born Sept. 11, 1877, he was professor of applied mathematics, Princeton Univ., 1905-9; and Stokes Lecturer in applied mathematics, Cambridge Univ., 1910-12. In 1923 he became secretary of the Royal Society. His works include *The Dynamical Theory of Gases*, 1904; *Theoretical Mechanics*, 1906; *Problems of Cosmogony and Stellar Dynamics*, 1919; *Atomieity and Quanta*, 1926; *Astronomy and Cosmogony*, 1929; and *The Universe Around Us*, 1929. He was knighted in 1928.

ists of the past. His edition of Sophocles is generally considered to be his greatest contribution to classical scholarship. Other works include *Translations from Greek and Latin*, 1873; *The Attic Orators*, 1876-80; and *Primer of Greek Literature*, 1877.

JEDBURGH. Burgh of Roxburghshire, also the co. town. It stands on the Jed, 56 m. from Edinburgh, on the L.N.E. Rly. Interesting old houses include those once occupied by Mary Queen of Scots (presented to the burgh in 1928), Prince Charlie, and Robert Burns. Jedburgh Abbey is one of the finest ruins in Scotland. The chief industries are the manufacture of tweeds and woollen goods. The name, sometimes spelt Jeddart or Jethart, is commemorated by the Jethart axe, a terrible weapon in the hands of the burghers, and by Jethart justice, indicating the hanging of a man first and trying him afterwards. Pop. 2,426

JEDDAH or JIDDA. Seaport of the Hejaz. It stands on the E. side of the Red Sea, about 65 m. W. of Mecca. It played a large part in connexion with the pilgrimage to Mecca. With the building of the Hejaz Egyptian and Palestine rlys. it has lost much of its importance. Coffee, hides, leather, and mother-of-pearl are among its exports. During the Great War it was captured from the Turks by the Hejaz Arabs in 1916. It is the diplomatic headquarters of the kingdom. Pop. 30,000.

JEFFERIES, JOHN RICHARD (1848-87). British essayist and writer on natural history. He was born near Swindon, Nov. 6, 1848, and became reporter on the North Wilts Herald in 1866, but his health failed, and the rest of his life was occupied in contributing essays—mainly on natural history and agricultural subjects—to the press. His literary style had a peculiar charm, and his essays met with great success in book form. He died Aug. 14, 1887.



Thomas Jefferson,
American president

JEFFERSON, THOMAS (1743-1826). President of the U.S.A. Born at Shadwell, Albemarle co., Virginia, April 13, 1743, he became a lawyer. As a member of the second Continental Congress he helped to draw up the Declaration of Independence, July 4, 1776. He was governor of Virginia, 1779-81, member of Congress, 1783-84, and minister to France, 1785-89. Jefferson became secretary of state under Washington in 1790, and leader of the Democratic-Republican (afterwards Democratic) Party.

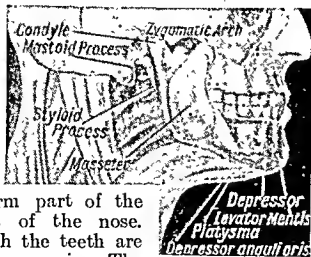


Sir James Jeans,
British scientist

From 1797-1801 Jefferson was vice-president, and from 1801-9 president of the U.S.A. During his term of office he sent an expedition against the Tripoli pirates; purchased Louisiana from the French; effected a considerable reduction in the national debt; and issued an embargo prohibiting the sailing of American vessels for foreign ports. After his retirement from public life he founded the university of Virginia. He died July 4, 1826.

JEFFREY, FRANCIS JEFFREY, LORD (1773-1850). Scottish lawyer and critic. Born at Edinburgh, Oct. 23, 1773, he entered Parliament as member for Perth in 1830, became lord advocate, and was made a Scottish law lord in 1834. He died Jan. 26, 1850. Jeffrey was one of the founders and first editor of *The Edinburgh Review*. His essays were published in four volumes in 1844 and 1853.

JEFFREYS, GEORGE JEFFREYS, 1st BARON (1648-89). English lawyer, best known as




Jaw. Its bones and muscles

the O.M. in 1905.

Jebb was one of the greatest scholars of his time, and a true successor of the great human-

JEBB, SIR RICHARD CLAYVERHOUSE (1841-1905). British scholar. Born at Dundee, Aug. 27, 1841, he was made fellow of Trinity College, Cambridge, 1863. In 1875 he was chosen professor of Greek at Glasgow, but in 1889 he returned to Cambridge as regius professor of Greek, and there he remained until his death. He was M.P. for the university, 1891-1905, was made a knight in 1900, and received the O.M. in 1905.

Judge Jeffreys. Born at Aeton, Denbighshire, he was called to the bar in 1668, and made a reputation in the courts, chiefly by his forcible speech and hec-


1st Baron Jeffreys, English lawyer
After Kneller

torious in the trial of the rebels who had followed Monmouth in 1685. His reward was the lord chancellorship. After the Revolution of 1688 he was arrested, and died a prisoner in the Tower of London, April 18, 1689.

JEHANGIR or **JAHANGIR** (1569-1627). Mogul emperor. Son of Akbar the Great, he ascended the throne at Delhi in 1605, and between 1616-18 was engaged in negotiations with the East India Company, who desired a commercial treaty in their favour. His wife, Nur Jahan, was famed for her beauty and wit.

JEHOIACHIN. King of Judah in succession to his father Jehoiakim. He only reigned three months (597 B.C.), and was carried captive to Babylon by Nebuchadrezzar, being released after thirty-seven years of imprisonment (2 Kings 24, 25).

JEHOIADA. High priest at Jerusalem during the reigns of Ahaziah, Athaliah, and Joash (2 Kings 11). He abolished the worship of Baal, raised funds to restore the Temple, and was buried among the kings.

JEHOIAKIM. King of Judah. The son of king Josiah, he was made king by Pharaoh Necho, the country at that time being under Egyptian domination. His reign lasted eleven years (608-597 B.C.), during three of which he was the vassal of Nebuchadrezzar.

JEHOSHAPHAT. King of Judah, 876-851 B.C. He came to the throne in succession to his father, Asa. In his earlier years he did much to exterminate idolatry, and built numerous strongholds. Alliance with Ahab, king of Israel, led him to take part in the battle of Ramoth Gilead. Later he was at war with Moab and Ammon. He joined Ahaziah in sending a maritime expedition to Tarshish to obtain gold from Ophir, but his fleet was destroyed at Ezion-Geber (1 Kings 22; 2 Chron. 17-20).

JEHOVAH. Proper name of the God of Israel. It is the name by which (Exod. 3, 12-15) He revealed Himself to Moses at Horeb. Jehovah is an artificial pronunciation of the consonants Jhvh or Yhwh, obtained by giving to the consonants the vowels of another divine name, Adonai, which means simply "My Lord." According to tradition the word was pronounced Ya-be. This seems to indicate Jahveh or Jahweh, Yahveh or Yahveh, a pronunciation adopted by many modern scholars. The word then gains a suitable meaning, either "he who causes to be" (giver of existence), or "he who is" (the absolute and unchangeable one).

JEHU. Son of Jehoshaphat, and king of Israel 843-815 B.C. He became a general under Jehoram, and during the illness of that king was proclaimed king by acclamation of the army (2 Kings 9), afterwards slaying Jehoram at Naboth. To protect himself against the Syrians, he formed an alliance with Shalmaneser II of Assyria. The reference to his furious driving (2 Kings 9, 20) has made his name a synonym for a driver of horses.

JELICOE, JOHN RUSHWORTH JELICOE, 1st EARL (b. 1859). British sailor. Born at Southampton, Dec. 5, 1859, he entered the navy in 1872. He became a lieutenant in 1880, served in the Egyptian War of 1882, and in China, 1898-1901. From 1902-10 he was almost continuously serving at the Admiralty on shore. He was created a K.C.V.O. in 1907, in which year he reached flag rank. From 1908-10 he was third sea lord and controller, being in charge of the construction of ships, under Sir J. Fisher. He commanded the Atlantic Fleet, 1910-11, and the 2nd squadron of the Home Fleet, 1911-12, and then became second sea lord. At the outbreak of the Great War, being then a vice-admiral in rank, he was made commander-in-chief of the Grand Fleet, Aug. 4, 1914, and held that post until Nov., 1916, when he became first sea lord. Jellicoe was in command at the battle of Jutland.

In Dec., 1917, he retired, and in Jan., 1918, he was raised to the peerage as Viscount Jellicoe of Seapa. On Aug. 5, 1919, he received the thanks of the nation and a grant of £50,000 for his war services. Promoted admiral of the fleet in 1919, he made a tour of the empire in that year in connexion with naval defence. Governor-general of New Zealand, 1920-24, he was created an earl in 1925, and in 1928 succeeded Earl Haig as president of the British Legion. He received the O.M. and the G.C.V.O. after Jutland.

In 1919 Jellicoe published *The Grand Fleet, 1914-16*, an account of its work under his command, and in 1920 *The Crisis of the Naval War*. See Jutland, Battle of.

JELLY FISH. Popular name applied to marine hydrozoa, which form a large class of the Coelenterata (q.v.). They embrace three divisions: (1) Siphonophora, colonies of bell-shaped organisms. (2) Hydromedusae, solitary bells. (3) Scyphomedusae, which have a kind of tube or gullet between mouth and stomach. In both (1) and (2) the mouth opens directly into the stomach. In the more common forms of free-swimming jelly fish the animal resembles a bell or parachute of translucent gelatinous matter, fringed with waving tentacles, some of which have the power of stinging or paralyzing the minute creatures on which the animal feeds. It swims by alternately expanding and contracting its bell.



Jelly Fish. Physalia pelagica, or Portuguese Man-o-War

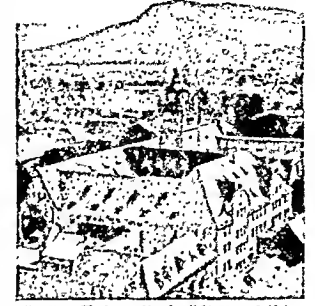
The egg hatches out as a free-swimming larva which fixes itself on some object and develops into a hydra-tube about half an inch long. This alternately widens out and contracts till it resembles a small pile of plates. The top one splits off, floats away, and develops into an adult jelly fish. This process is repeated until the pile is disposed of. See Medusa.

JEMAPPES. Town of Belgium. It is 4 m. from Mons, with which it is connected by canal. Its industries are mainly connected

with the coal mines in the district. There are also glass works. Pop. 14,881.

Jemappes is famous for the battle fought here between the French and Austrians, Nov. 6, 1792. The French were superior in numbers, and gained a victory, decisive because it placed the southern Netherlands in their power. The French lost about 1,000 men, the Austrians about 7,000. There was also fighting here during the Great War. On Aug. 23-24, 1914, the British blew up the bridge in face of the advancing Germans. See Charleroi; Mons, Battle of.

JENA. Town of Germany, in Thuringia. It stands on the river Saale, 56 m. from Leipzig. The chief buildings, apart from the university, are the 15th century Rathaus and the Stadthaus. The industries centre round the university, the most famous being the manufacture of optical instruments by Zeiss. The university was founded in 1548. It has an observatory. Pop. 52,640. See Germany.



Jena. University buildings of this old German town

The battle of Jena was fought between the French and Prussians under Prince Hohenlohe, Oct. 14, 1806. Napoleon, who commanded in person, gained a sweeping victory, Hohenlohe's disorganized force being driven to meet the stream of fugitives from Auerstädt (q.v.), where on the same day the Duke of Brunswick's forces had been totally defeated. So decisive were these two battles that Napoleon was able to march without serious opposition to Berlin.

JENGHIZ KHAN (1162-1227). Mongol emperor. Son of a petty Mongol chieftain, he succeeded his father while still a boy. From about 1177 he was involved in almost unbroken warfare with various tribes, and in 1206 proclaimed himself khan or emperor. Further wars spread his dominion west beyond the Jaxartes river in Turkistan and to Bokhara, 1219. His armies penetrated through Samarkand into Khorasan, to Merv, and into Georgia, 1222, across the Indus into Peshawar and Lahore, and sacked Herat; and further campaigns in China made him ruler over almost the whole of the Chinese empire. Jenghiz was famous for his extremely enlightened legal code and the skilful administration of his far-spread possessions. He died Aug. 24, 1227. See Kublai Khan.

JENKINSON, ANTHONY (d. 1611). English sailor and traveller. After a youth spent in voyages to the Levant he was appointed captain-general of the Muscovy Company's fleet in 1557. Landing at St. Nicholas on the Drina in that year, he made his way into inland Russia, visited Ivan the Terrible at Moscow, pushed S. to the Caspian Sea, went to Bokhara, and returned to Moscow and England in 1560. His courage won for him the friendship of Ivan, who granted him valuable trading concessions, which Jenkinson transferred to his employers. He died in Feb., 1611.



Edward Jenner, English physician
From an engraving

JENNER, EDWARD (1749-1823). English doctor, the discoverer of vaccination. Born at Berkeley, Gloucestershire, May 17, 1749, he

came to London and studied under John Hunter, after which he returned to Berkeley to practise medicine. There he remained until his death, Jan. 25, 1823.

About 1775 Jenner began to study smallpox seriously, and after some years of this, meanwhile carrying on his practice, he made his first inoculation in May, 1796, on a boy, who was afterwards shown to be immune from smallpox. Other inoculations were carried out, and in spite of much opposition the practice of vaccination made great headway. A society named after the inventor was formed to promote it. In 1802 Parliament voted £10,000 to Jenner and in 1806 a further £20,000, while additional gifts were made to him, much of which went towards the advocacy of the cause. See Vaccination.

JENNER, SIR WILLIAM (1815-98). British physician. Born at Chatham, Jan. 30, 1815, he was made professor of pathological anatomy at University College, London, in 1849, later becoming professor of the principles and practice of medicine there. He was physician at several London hospitals, and also had a wide practice as a specialist. Jenner wrote much on fever, and the difference between typhus and typhoid was made known by his researches. In 1864 he was made F.R.S., and in 1868 was created a baronet. He died Dec. 11, 1898.

JEPHTHAH. One of the judges of Israel. An illegitimate son of Gilead, he was asked by the Gileadite elders to command the army against the Ammonites, and won a complete victory over the enemy at Rabbath-Ammon. He had vowed to God that, if successful, he would sacrifice the first thing he met on his return; it proved to be his own daughter.

JERBOA. Family of small rodents, found in the sandy regions of E. Europe, Asia, and N. Africa. Mouse-like in general form, with short forelegs and very long hind ones, they take long leaps. The tail is long and tufted at the extremity. The commoner species are about 6 ins. long and have light-brown fur. They often do great damage to crops.

JEREMIAH. Hebrew prophet, the author of one of the prophetic books of the Bible. He belonged to the priestly line, and was active during one of the most critical periods of Hebrew history—the period before and just after the final destruction of Jerusalem by the Chaldeans (586 B.C.). When Jerusalem fell he migrated, with other Jews, to Tahpanhes, the ancient Daphnae, in Egypt. According to a late tradition, he met his end there by martyrdom.

The book of Jeremiah consists partly of narrative (biographical) and partly of discourses. Three parts, each containing various chapters and passages throughout the book, have been distinguished: (1) prophecies written by Jeremiah; (2) biographical chapters written by another person, apparently after the prophet's death; and (3) a few chapters and verses written by a third person. Jeremiah did his utmost to dissuade his countrymen from following the counsels of false prophets. As a prophet he gave the Hebrew rulers and people inspired advice and also proclaimed a new covenant, that of a personal, spiritual relationship between God and each individual.

JERICHO. Town of Palestine, about 15 m. N.E. of Jerusalem. In the days of Christ it was a beautiful city, surrounded with gardens and such an abundance of palms that it was called the City of Palms. It remained a place of importance till the Jewish wars, when it was reduced to ruins. A neighbouring hill being traditionally believed to be the scene

of the Temptation, Jericho became a favourite retreat of anchorites and monks. The modern Jericho, a mere village, is a short distance from the old site. Jericho was captured by British troops under Allenby in the Palestine campaign on Feb. 21, 1918. See Palestine.

JEROBOAM. Names of two kings of Israel. Jeroboam I, the son of Nehat, became king after the death of Solomon. He set up the worship of the golden calf at Dan and Bethel, and so gained the epithet of "Jeroboam, son of Nehat, who made Israel to sin."

Jeroboam II, king of Israel, 781-740 B.C., was famed as a warrior under whom Israel defeated the Syrians and rectified its boundaries (2 Kings, 14).

JEROME (c. 340-420). Saint and father of the Latin Church. His full name was Sophronius Eusebius Hieronymus. As a result of a vision he retired to the Syrian desert and devoted himself to the mastery of Hebrew. In 379 he was ordained at Antioch by Paulinus and studied under Gregory Nazianzen at Constantinople. Leaving Rome in 385, he settled at Bethlehem, where he built a monastery and a hospital for pilgrims, and died Sept. 30, 420. He translated the Holy Scriptures into Latin (the Vulgate).

JEROME, JEROME KLAPEA (1859-1927). British author. Born at Walsall, May 2, 1859, he made his name with *Three Men in a Boat*, in 1880. In 1892, having earlier scored another success with *The Idle Thoughts of an Idle Fellow*, he started, with Robert Barr, a monthly magazine called *The Idler*, and in

1893 appeared *To-day*, a weekly which he edited. As a serious novelist, Jerome made a success in 1902 with *Paul Kelter*, and as a playwright with *The Passing of the Third Floor Back*, 1907. His later books include *The Second Thoughts of an Idle Fellow*, 1898; *Tommy & Co.*, 1904; *They & I*, 1909; and *All Roads Lead to Calvary*, 1919. His autobiography, *My Life and Times*, appeared 1925. He died June 14, 1927.

JERRAM, SIR THOMAS HENRY MARTYN (b. 1858). British sailor. Born Sept. 6, 1858, he joined the navy in 1871. In 1890 he served in the Vitu expedition, and also acted as vice-consul at Beira and Mapondosa during the Portuguese crisis, 1891. He was rear-admiral second in command of the Mediterranean fleet, 1910-12, and commanded the second battle squadron, 1915-16, which he led at the battle of Jutland, May 31, 1916. Promoted admiral in 1917, he was awarded the G.C.M.G. in 1919.

JERROLD, DOUGLAS WILLIAM (1803-57). British author, dramatist, and wit. Born in London, Jan. 3, 1803, he early began to write, and in 1821 his first play, *More Frightened than Hurt*, was produced. Altogether he produced nearly seventy plays, which include *Nell Gwynne*, 1833, and *The Prisoner of War*, 1842. Several of his most popular books appeared serially in *Punch*, notably *Punch's Letters to his Son*, 1843; *The Story of a Feather*, 1844; and *Mrs. Caudle's Curtain Lectures*, 1846. He edited *Douglas Jerrold's Shilling Magazine*,

1845-48; the *Illuminated Magazine*, 1846-49; and *Lloyd's Weekly Newspaper*, 1852-57. He died June 8, 1857. Consult *Douglas Jerrold, Dramatist and Wit*, Walter Jerrold, 1918.

JERSEY. Largest of the Channel Islands. The most southerly of the group, 12 m. from France, its area is 45 sq. m. St. Helier is the capital; other places are St. Aubyn, St. Mary, St. Brelade, and St. Ouen. The inhabitants are mainly Norman-French, and French is the principal language. Potatoes, grapes, flowers, etc., are raised for the English market. Corn is grown, and there is an excellent breed of milk-producing cattle.

Jersey is governed by a lieutenant-governor appointed by the crown, and a bailiff, who serves for life. For judicial purposes there is a body called the royal court, and for legislative purposes there is the States, which consist of both official and elected members. The bailiff presides over both these bodies. The dean is the chief ecclesiastic and the island is in the diocese of Winchester. Pop. 49,494. See Cattle; Channel Islands.

Earl of Jersey is an English title borne since 1697 by the family of Villiers. It descends from Sir Edward Villiers (d. 1626), who belonged to the same family as George Villiers, duke of Buckingham. George, the fifth earl, eloped with the granddaughter of Robert Child the banker, since which time each earl has been a partner in Child's bank, and the family name has been Child-Villiers. Victor George Albert (1845-1915), the 7th earl, was governor of New South Wales, 1890-93. George, the 9th earl, succeeded in 1923. The earl's seats are at Middleton Park, Bicester, and Osterley Park, Isleworth, Middlesex.

JERSEY CITY. City of New Jersey, U.S.A. It stands on a headland formed by the Hackensack river and Newark Bay on the W. and the Hudson River on the E., and lies opposite New York, with which it is connected by rly. tunnels under the Hudson river and by steam ferries. The terminus of several important rlys., it forms part of the port of New York. There is a trade in coal, iron, and agricultural produce, while other industries include slaughtering and meat packing. There are sugar refineries and factories for tobacco, glass, chemicals, radio apparatus, etc.; also lumber mills, grain elevators, and rly. workshops. Among the principal buildings are the city hall, court house, People's Palace, public library, and historical museum. The county park covers 200 acres. Pop. 298,103.

JERUSALEM. Chief city of Palestine. The Holy City is 33 m. from the Mediterranean and 15 from the Dead Sea. It occupies a plateau with two southward-pointing spurs bounded by the Hinnom and Kidron valleys, with an intermediate ravine, the Tyropoeon valley. Of the whole elevated area of 1,000 acres barely one-fifth lies within the present walls. Pottery finds on the E. hill attest a pre-Semitic settlement before 2500 B.C. The E. hill became a fortified town, as mentioned in the Amarna correspondence, about 1400 B.C.

The city remained Canaanite until about 1000 B.C., when its Jebusite population was subdued by David. Jerusalem was destroyed by Titus in A.D. 70, and Hadrian rebuilt it in 135, renaming it Aelia Capitolina. Islam's domination began in 1187, and culminated in the Ottoman occupation under Selim I and the erection in 1542 of the present walls. The city surrendered to British forces under Gen. Allenby on Dec. 9, 1917.

The modern city embraces four quarters, Mahomedan, Jewish, Christian, and Armenian. The Haram, an oblong platform resting partly on vaults, includes the temple area, which had a circuit of a mile in Herod's day. In the centre stands the Dome of the Rock, often called the mosque of Omar. The



Jerome K. Jerome,
British author
Russell



Jerboa. Specimen of the small
leaping rodent



Douglas Jerrold,
British author
After Sir D. Macnee

Musjid el-Aksa arose, about 690, out of the remains of Justinian's and other churches. The Christian quarter includes the Church of the Holy Sepulchre. Within the Jaffa gate on the W stands the crusader structure usually called David's tower. The sacred places associated with the life of Christ have been localised by long tradition. The supreme site of all, that of Calvary and the Tomb, has been the object of much controversy.

One of the first results of the British occupation was the construction of a new water supply. Age-long accumulated refuse in the streets and lanes



Jerusalem. 1. The Jews' Wailing Place. 2. Church of the Holy Sepulchre in the Christian quarter

was removed, and many other improvements were put in hand. A department of antiquities has been formed to work in conjunction with the British School of Archaeology and other national institutions previously established. A Hebrew university was founded on Mount Scopus in 1918, and was opened by Lord Balfour in 1925. In August, 1929, friction occurred between the Jews and the Moslems over the Wailing Place. Serious rioting took place. Pop. 62,578. See Calvary; Crusades; David; Palestine; Siloam; consult also Jerusalem, Sir G. A. Smith, 1908.

JERVAULX. Hamlet of Yorkshire (N.R.). It is 13 m. from Ripon and is famous for its ruined Cistercian abbey. The Ure flows past it, and about here Wensleydale begins. It has a station on the L.N.E. Rly., but the ruins are about 4 m. from this. The abbey was founded in 1156 by monks from Byland.



Jervaulx. Ruins of the abbey buildings; in the foreground are remains of the chapter house
Frith

JERVIS BAY. Inlet of Australia, 82 m. S. of Sydney. Covering an area of about 28 sq. m. it was acquired in 1917 as a port for Canberra (q.v.). Here is the Australian Naval College.

JESMOND. District of Newcastle-upon-Tyne. It has a station on the L.N.E. Rly. Jesmond Dene, a beautiful glen, was presented to the city by Lord Armstrong.

Originally Jesus Mount, it was a place of pilgrimage. Remains of the pilgrimage chapel can still be seen. See Newcastle-upon-Tyne.

JESSE. Biblical character, known only as the father of David. He is described as a native of Bethlehem, and had seven sons, in addition to David (1 Sam. 16). As the father of David, he is regarded as the first person in the genealogy of Jesus Christ. A Jesse tree is a representation, in the form of a genealogical tree, showing the descent of Jesus Christ from Jesse. Such are frequently found on stained-glass windows, which are called Jesse windows.

JESSEL, SIR GEORGE (1824-83). British lawyer. Born in London, Feb. 13, 1824, he became a barrister in 1847. In 1868 he entered Parliament as Liberal M.P. for Dover, and from 1871

to 1872, when he was made master of the rolls, he was solicitor-general. In 1881 the master of the rolls was made a president of the court of appeal, and he was still master when he died, March 21, 1883. His elder son, Charles James (1860-1928), was made a baronet in 1883.

JESSOP, GILBERT LAIRD (b. 1874). English cricketer. Born at Cheltenham, May 19, 1874, he entered Christ's College, Cambridge, in 1896. In 1896 and 1898 he played for the university against Oxford, and in 1899 he captained the team. Afterwards Jessop's cricket career was mainly in Gloucestershire, of which county team he was captain. He played for England against Australia, and also for the Gentlemen. Jessop was renowned for his hitting powers, and was one of the finest fielders who have ever played the game of cricket.



Gilbert L. Jessop, English cricketer

JESSOPP, AUGUSTUS (1824-1914). British author and divine. Born at Cheshunt, Dec. 20, 1824, he was made headmaster of Helston Grammar School in 1855, and from 1859 to 1879 was head of King Edward VI School, Norwich. From 1879 to 1911 he was rector of Scarning, Norfolk. He died Feb. 12, 1914.

Jessopp devoted much time to studying the past of E. Anglia. His best work is *The Coming of the Friars*, 1888. Other books are the semi-historical *One Generation of a Norfolk House*, 1878; *Arcady*, for Better for Worse, 1887, a clear presentation of E. Anglian life; *Trials of a Country Parson*, 1890; *Frivola*, 1896; *Life of John Donne*, 1897; *Before the Great Pillage*, 1901; *England's Peasantry*, and *Other Essays*, 1914.

JESTER. Retainer attached to royal or noble households in medieval and later periods, and supposed originally to have been a teller of stories or gesses. The term came to be applied more particularly to one who was also known as the Court Fool, and was privileged by his supposed foolishness to utter sharp things without having to suffer for it. The custom of keeping such a retainer is of ancient date. See Fool.

JESUITS. Popular and abbreviated name of the Society or Company of Jesus. It was founded in 1534 by a Spanish knight, Inigo Lopez de Recalde (or de Loyola), best known as Ignatius Loyola (q.v.). Long before the

close of the 16th century it had become an international factor of first-rate importance; throughout the 17th and the first two-thirds of the 18th century its activities were apparent in every sphere. From that time it existed only upon sufferance until after the Napoleonic Wars; but its reinstatement by the bull of Pius VII in 1814 was not accompanied by the revival of anything approaching its former influence.

The highest grade of the society consists of the professed who, having passed through ten years of training, have taken the final vows. Next come the coadjutors; then the scholastics, who have passed the novitiate, but are still under education; and finally the novices. The field of labour is divided into provinces, each having its own provincial at its head. Throughout, the rule of complete and unquestioning obedience to the superior officer is absolute and unqualified. The business of each is to execute perfectly the commands which are laid on him. The principle that the end justifies the means, that if the ends be right, the means are lawful, is expressly laid down by authority. The education of the young, and, above all, the education of the society itself, forms an essential part of the Jesuit system.

JESUS CHRIST. All that we know of the life of Jesus is contained in the four Gospels. Mary, the mother of Jesus, described his birth in this way: An angel came and said, "The Holy Ghost shall come upon thee, and the power of the Most High shall overshadow thee, wherefore also that which is to be born shall be called holy, the Son of God." When the boy at the age of twelve achieved the status of manhood, he explained to his mother and to Joseph that he was bound to be "about his Father's business." For eighteen years, however, he lived in obscurity at Nazareth, working as a carpenter. The emergence of his cousin John as a prophet called him out of his retirement. He was baptized in the Jordan.

Gathering around him a few young disciples, he began at Capernaum a ministry of teaching and healing. His teaching was summed up in what we know as the Sermon on the Mount. The freshness, independence, and power of his message and work brought him speedily into collision with the religious authorities. Jesus made it a practice to go up to Jerusalem for the festivals; and going up for the Passover in the third year of his ministry he was conscious that he went to die. By the treachery of a disciple he was arrested; an illegal trial was hurried through in the night; and on the morning of the Paschal Feast the authorities of Judaism demanded from Pilate that he should authorise his crucifixion. The Roman procurator rebelled against this injustice, but a threat to denounce him to Tiberius, at Rome, brought Pilate into line and Jesus was crucified. See Christianity.

JESUS COLLEGE. This is the name of two colleges. Jesus College, Oxford, was founded by Queen Elizabeth in 1571. The buildings are in Turl St. They include chapel, hall, and library, and two quadrangles of the 17th century.

Jesus College, Cambridge, was founded in 1496 by John Alcock, bishop of Ely, on the site of the Benedictine nunnery of S. Radegund.

JET. Black variety of bituminous coal. It is easily cut and carved, and takes a high polish, and is extensively used for beads, as in mourning jewelry, and for ornamentation generally. It is found in many parts of Europe, notably in Bavaria, France, Germany, and Spain, and at Whithy in Yorkshire. Whithy jet is famous.

JETHOU. One of the Channel Islands. It is 4 m. from St. Peter Port, Guernsey, is about a mile in circumference, and, composed of

granite, is infertile. It is administered from Guernsey. See Channel Islands; Guernsey.

JETSAM, JETTISON, or JETSON. Term of English law. It means property that is thrown overboard during shipwreck. (See Flotsam.) Jettison is the act of throwing over the cargo or tackle of a ship when she is in danger of sinking, in order to lighten her. Loss of this kind is treated, on the general average principle, being divided between those who are interested in the ship and its cargo.

JETTY. Structure projecting into the sea or other body of water. The terms pier, mole, jetty, and breakwater are often incorrectly used indiscriminately. The principal purpose of a jetty is to guide or concentrate the current of a river where it enters the sea, or to maintain the entrance to an estuary harbour, when it can serve as a breakwater as well. Jetties may consist of rubble mounds, fascino work, earthwork contained by sheet piling, cribs, or piled stagings filled in solid with stone, or of solid masonry, or may be of open construction, with pile supports. See Breakwater; Pier.

JEVONS, WILLIAM STANLEY (1835-82). British economist. Born at Liverpool, Sept. 1, 1835, he was employed in the mint at Sydney, 1854-59. Again in England in 1866, he became professor of logic and political economy at Owens College, Manchester, and in 1876 removed to London as professor of political economy. He was drowned whilst bathing at Hastings, Aug. 13, 1882. Jevons published a number of notable works on logic and on political economy. As an economist he stressed the close connexion between political economy and mathematics.

JEWRY. Term applied in the Middle Ages to any part of a city chiefly inhabited by Jews. The City of London thoroughfare called Old Jewry is so named from its early Jewish residents. In several other English towns the name lingers, e.g. Jewry Street, Winchester.

JEWS. Men of Judah, or of Judea. In the Bible itself (Esther 2, 5) Jew signified an adherent of Judaism. These two connotations of Jew—the one racial, the other religious—have persisted into modern times.

The Jews have a continuous history of 4,000 years. The earliest dates are uncertain, but the migration of Israel's ancestors from Mesopotamia to Canaan must be placed not later than 2000 B.C. The Exodus from Egypt would, on this view, occur at 1225 B.C., followed by Joshua's invasion of Palestine soon after. David reigned about 1000 B.C. We are on quite certain ground when we date the fall of Samaria at 721 B.C. and the fall of Jerusalem at 586 B.C.

Followed half a century later by the return from the Babylonian exile, these events led up to the dominance of the Seleucids, the Maccabean Revolt, 165 B.C., the elevation of Simon to the principality, 142 B.C., the entry of the Romans under Pompey, 63 B.C., the reign of Herod, 37-4 B.C., the destruction of the Temple by Titus, A.D. 70, and the final suppression of the Jewish national life by Hadrian, A.D. 130.

The Middle Ages, so far as they affected the Jews, may be said to extend from the completion of the Talmud to 1492. This period covers the Gaonic régime and the Golden Age in the Iberian peninsula. The most influential external events were the rise of Islam, the Crusades, the development of the feudal system, which had no place in it for Jews, the infliction of the Jewish badge by Innocent III, the Black Death with its consequent anti-Jewish riots, the growth of feeling against the Jews owing to their enforced occupation with finance, and a variety of papal restrictions which culminated in the Inquisition. The restrictive legislation of Justinian was imitated in the resolutions of successive Church councils.

In early England Jews were treated with a certain rough justice, cruelly interrupted by "popular" riot and massacre, such as occurred at the coronation of Richard I. After that dire experience the English Jewry was reorganized, but their expulsion in 1290 followed when the inroad of Lombard bankers rendered the Jews no longer financially necessary. Cromwell re-admitted the Jews in the very year, 1655, which is assigned for the first important settlement of Jews in New York. The great increase of the Jewish population in America occurred very much later, as a consequence of the Russian persecutions of 1882 onwards. The successful outcome of the equality granted to Jews in America reacted on European conditions, and the conferment of civil and political rights was followed in all European countries by a similar incorporation of the Jews in the national life in the states which admitted them to citizenship.

At present there are about 300,000 Jews in the British Isles, chiefly concentrated in London and other large cities. They have some 300 synagogues and about 200 ministers and readers, under the chief rabbi at 4, St. James's Place, Aldgate, London, E.C.3. They have a training college at Queen Square House, London, W.C.1, and a hospital at Stepney Green, London, E.1.

In the British Empire there are about 550,000 Jews, and throughout the world some 16,000,000. Of these 10,000,000 are in Europe and 4,500,000 in N. America. The Jews have their own calendar, with a new year that begins on Oct. 5 of the Gregorian one, and a system of weights and measures. Hebrew is their national language, but many of them speak Yiddish, in which newspapers are published in London and elsewhere. English law allows them to be married and buried according to their own rites and ceremonies. See Anti-Semitism; Hebrew; Palestine; Semite; Talmud; Zionism.

JEW'S EAR (*Hirneola auriculajudae*). Fungus of the order Hymenomycetaceae. When the air is moist and the fungus is fully expanded, it is shaped like three-fourths of a saucer, with the inner surface thrown into folds and swollen veins. This surface is smooth and of a brownish flesh tint. The exterior is covered with a delicate pile. It grows chiefly on dead elder trunks, and looks like a swarthy human ear nailed to the tree.

JEW'S HARP. Small musical instrument. It consists of a metal frame holding a steel tongue set in vibration by strokes of the finger. The neck of the instrument is held between the teeth, and the varying breathing reinforces the tone and regulates the pitch. The origin of the name is uncertain.

JEX-BLAKE, SOPHIA (1840-1912). British doctor. Beginning life as a teacher, in 1866 she went to Boston, U.S.A., to study medicine, and, returning to England, matriculated in 1869 in the medical faculty of Edinburgh, but was not allowed to take her degree. Leaving Edinburgh, she founded the London school of medicine for women in 1874. In 1878 she started practice in Edinburgh, and in 1886 founded the Edinburgh school of medicine for women. She retired in 1899, and died Jan. 7, 1912.

Sophia's elder brother, Thomas William Jex-Blake (1832-1915), was an assistant master at Rugby, 1858-68, and then became principal of Cheltenham College. He was headmaster of Rugby, 1874-87, and dean of Wells, 1891-1911. He died July 2, 1915. His daughter Katharine was mistress of Gorton

College, and another daughter, Henrietta, principal of Lady Margaret Hall, Oxford. Both retired in 1921.

JEZEBEL. Daughter of Ethbaal, king of the Sidonians. She married Ahab before his accession, and was the first Canaanitish woman to share the throne of Israel. In her hands Ahab was a puppet. She established Phoenician worship in the kingdom, had Nahoth stoned, and persecuted the prophets of Israel. Thrown from her window at the command of Jehu, she was trampled to death under the boofs of his chariot horses (1 Kings, 18, 19, 21). Her name has been ever since a title of reproach, indicating a woman unscrupulous, cunning, and abandoned.

JEZREEL. Canaanitish city. It is about 11 m. from Nazareth. Ahab had his capital there, and the leading events of his reign took place in the neighbourhood (1 Kings 21).

Jezreelites is the name of a sect founded by a private soldier, who took the name of James Jereshom Jezreel and professed to have received a divine call. He commenced to build a tower on Chatham Hill, where the sect was to assemble on the Last Day, but did not live to finish it. Michael Mills, a native of Detroit, U.S.A., claimed to have received Jezreel's mantle, and visited England to finish the temple. Adopting the title of Prince Michael, he was received as an inspired teacher, but was unable to carry out his plans. He died in 1921.

JHELUM. River of India, the westernmost of the five rivers of the Punjab. It rises in Kashmir and flows through the Punjab to join the Chenab about 80 m. N.E. of Multan. Its length is 450 m. Navigable below Islamabad, it is of great importance for irrigation, its two canals supplying water to the doab between the Chenab and Jhelum. It is the ancient Hydaspes.

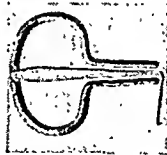
Jhelum district, in Rawalpindi Division, Punjab, covers 2,813 sq. m. Wheat and millet are among the chief crops, and fine horses and cattle are reared. Timber, stone, and grain are among the exports. Jhelum town is a growing trade centre. Pop. dist., 477,068; town, 14,422.

JIB. Foremost sail in any sailing craft. Triangular in shape, it is set between the foremast head and the bowsprit. Jibs are of various kinds, e.g. the halloon jib used in racing yachts, the flying jib of schooners, and the small storm jib used in bad weather. There are also jib top sails. A jibboom is a continuation of the bowsprit used for setting the jib. See Sail.

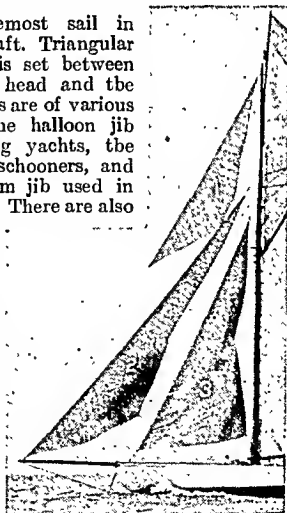
JIBUTION

DJIBOUTI. Seaport of French Somaliland, on the African coast opposite Aden. It is the terminus of the railway to Addis Ababa, the Abyssinian capital, and is the chief outlet for the trade of Abyssinia. It is a free port, a coal depot, and the seat of government of French Somaliland. Pop. 9,414; 540 Europeans.

JIG. Simple machine for the preliminary dressing of ores. A common form consists of a vertical box with a tapering bottom, divided into two portions, in one of which a piston

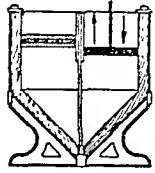


Jew's Harp. Small musical instrument



Jib sails of a cutter. 1. Flying jib. 2. Jib. 3. Foresail

works up and down while the other is fitted with a horizontal screen on which the broken, crude ore is placed. The box is filled with



Jig used for dressing ores

water, and as the piston operates the water is oscillated up and down through the screen, thus washing the lighter and worthless material away over the top of the box, while the more valuable portions gradually work down through the screen into the bottom of the jig.

In metal and wood working a jig is a variety of template used for repetition work. See Template.

JIG. Lively dance. The jig is the single national dance of Ireland, where it is made expressive of a wide range of emotion, and has been accompanied by a correspondingly characteristic music. Some form of triple time, or duple time with triple subdivisions, is the most usual. Corelli, Bach, and others have used the jig or gigue as a lively concluding movement to sonatas and suites.

JINGOISM. Slang term applied to bellicose and provocative patriotism. It came into use in 1878, being derived from the words of a popular song in which occurs the phrase "We don't want to fight, but, by Jingo, if we do." This song was a reflection of popular mistrust of Russia.

The French equivalent is Chauvinism

JINN OR DJINN. In Mahomedan mythology, a race of spirits or beings dwelling in the lowest firmaments. According to the Koran there are good and bad jinn, who are all subject to death and capable of future salvation or damnation.

JINRICKSHA. Japanese word meaning a small two-wheeled vehicle. It is pulled by one or more men and is common in Japan and elsewhere. See illus. p. 791.

JIU. River of Rumania, also known as the Schyl. It rises near the S. frontier of Transylvania, traverses Rumania from N. to S., and enters the Danube 50 m. E. by S. of Vidin (Widin), opposite Rahova, its length being 200 m. It came into prominence in the Great War in the early campaigns between the Rumanian and Austro-German forces.

JOAB. Nephew of David. Made a general of the army of Judah, he became commander-in-chief and one of the king's most intimate counsellors. On David's death he supported the claim of Adonijab to the throne, and he was executed by order of Solomon (2 Sam. 2, 18-20; 1 Kings 2).

JOACHIM, JOSEPH (1831-1907). Hungarian violinist. Born at Kittsee, Hungary, June 28, 1831, he appeared in public at Leipzig when only twelve and met Mendelssohn, and the next year played at concerts in London. He held posts at Weimar and Hanover, and in 1868 settled in Berlin as head of a branch of the Royal Academy of Arts, remaining there until his death, Aug. 15, 1907.

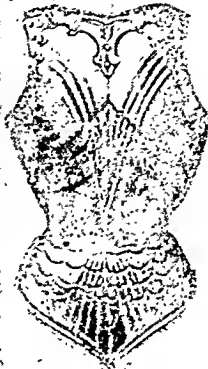


Joseph Joachim, Hungarian violinist

JOAN. Mythical woman pope of the 9th century. According to a legend she was an English girl who went disguised as a man to Rome with her lover, a monk. Having studied theology, she became pope, under the name of John VIII, her pontificate lasting from 853-855. The legend was finally exploded in 1863 by Johann Dollinger.

JOAN OF ARC (1412-31). French heroine and saint. Jeanne d'Arc was a peasant maiden of Domrémy, born Jan. 6, 1412. In 1428 the British and their Burgundian allies laid siege to the town of Orleans. Convinced by heavenly visions and voices that a divine mission had been laid upon her to deliver France, Joan demanded from the French king a troop of soldiers in order to relieve the beleaguered city.

She rode to Orleans and entered it; led by her, the garrison drove the English from post after post. Joan's inspiration breathed a new life into the soul of the French people. Her spell was broken, however, when she failed in an attempt to enter Paris. While heading an unsuccessful sortie from Compiègne, she was captured by the Bur-



Joan of Arc. Sword and breastplate said to have been worn by the Maid. These relics were exhibited at Westminster Cathedral in 1920

gundians (1430), who sold her to the English. Joan was tried on charges of heresy and witchcraft by a court of ecclesiastics, condemned, and handed over to die by fire at the hands of the English in the marketplace of Rouen, May 30, 1431. She was canonized at Rome, May 16, 1920.

JOASH OR JEHOASH. King of Judah. Youngest son of Jehoram, he was crowned in his seventh year. He abolished Baal worship, and reorganized the Temple worship, but in his later days was responsible for the murder of Zechariah. After a reign of forty years (836-796) he was killed by two of his servants (2 Kings 11).

Another Joash was king of Israel (797-781), the son and successor of Jehoahaz (2 Kings 13).

JOB. Hero of a book of the Bible. Ezekiel (14, 14, 20) mentions Job as being, with Noah and Daniel, an example of a proverbially righteous man. The book of Job is mainly a poem, with a prologue and epilogue in prose, which give an account of the hero's fortunes and misfortunes. Job was a blameless and upright man, fortunate and prosperous. This had been noted by Satan, who attended a session held by Jehovah in heaven. When Job's piety was praised, he suggested that it had a mercenary motive, and that if God turned against him he would curse Him to His face. Thus it came about that misfortunes and afflictions were sent to try Job's loyalty.

Although he lost his stock, his servants, and his children, and was smitten with a loathsome disease, Job refused to curse God. Three friends came to bemoan and comfort him. Their words, calculated to shake his faith in the justice of God, only added to his trials. But he was faithful to the end, so that "the patience of Job" has become proverbial.

JOB'S TEARS (Coix lachryma). Grass of the order Gramineae, native of India. It has leafy stems, 3 ft. or 4 ft. high, the leaves broad and drooping. The name is suggested by the large, hard, pearly-grey seeds, which hang in clusters from the upper portions of the stems.

JOCASTA OR EPIKASTE. In Greek legend, wife of Laius, king of Thebes, and mother of

Oedipus. How on the death of Laius, she unwittingly became the wife of her own son, and bore him children, is told under Oedipus. Overwhelmed with horror when she discovered what had happened, Jocasta banged herself.

JOCKEY. One who rides in a horse race. The training of a professional jockey begins with apprenticeship to a licensed trainer of racehorses, the term being not less than three years. All apprentices and full jockeys are required to obtain a riding licence, which must be renewed annually from the stewards of the Jockey Club, or the National Hunt Committee if for steeplechase riding.

Although most flat-race jockeys are professionals, amateur jockeys may ride in races other than those open to gentleman riders by securing annual permission from the stewards of the Jockey Club and paying an annual subscription to the Bentinck Benevolent Fund. Many more amateur jockeys ride under National Hunt rules, the higher scale of weights providing them with more opportunities. See Donoghue, S.; Horse Racing.



Jockey. The English jockey J. Childs

JOCKEY CLUB. Governing body of horse racing in Great Britain. It was founded in 1750 for the purpose of, inter alia, framing rules to govern all flat races, arranging annual fixture lists, arbitrating on all matters in dispute, and sitting in judgement on any person or persons reported to the stewards for malpractices. The usual form of punishment is to warn the offender off Newmarket Heath, equivalent to all racecourses, or permanently or temporarily to suspend training and riding licences. Fines may also be imposed. Its headquarters are at Newmarket.

JODEL OR YODEL. Style of vocalisation affected by the Tirolese. It consists of a verse in the natural voice, which is then followed by a coda in falsetto.

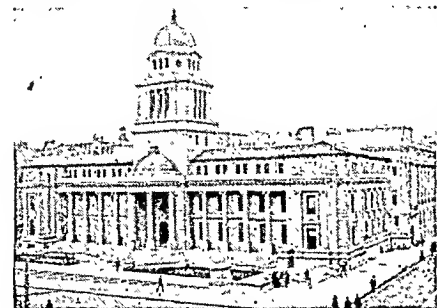
JOEL. Minor prophet. In the O.T. his book, written c. 500 B.C. or later, is inserted between the books of Hosea and Amos. He belonged, apparently, to Judah, was the son of Pethuel, and lived in Jerusalem. He uses the plague of locusts as symbolical, deals with divine judgement, and calls for repentance, pointing out the way of salvation for Judah. He is quoted in Acts 2 and Romans 10. The name is borne by other O.T. people.

JOFFRE, CÉSAIRE JOSEPH JACQUES (b. 1852). French soldier. Born Jan. 12, 1852, he fought in the Franco-Prussian War, took part in the expedition to Timbuktu, 1894, and served under Gallieni in Madagascar, 1896-99. Appointed generalissimo of the French armies, 1911, he was responsible for the violent and disconnected attacks made by the French armies on the opening of the Great War, and for the retreat which exposed the N. of France to German occupation. The credit of the first battle of the Marne (Sept., 1914) he shares with Gallieni, who commanded in Paris. This victory gave him singular prestige, but in the trench warfare which followed, Joffre's unsuccessful operations were accompanied



Marshal Joffre, French soldier
Manuel, Paris

by heavy losses. The French Ministry became dissatisfied with Joffre, though in Dec., 1915, he was given command of all the French armies. The dissatisfaction increased when the German attack on Verdun nearly succeeded in Feb.-Mar., 1916. But in that moment of extreme danger he directed with consummate skill and unflinching determination the measures which saved Verdun. The limited results of the battle of the Somme deepened the discontent of the government, and in Dec., 1916, Nivelle took over the command in the field. Joffre then retired, and was promoted marshal of France. See *Marno: Somme*.



Johannesburg, South Africa. The Town Hall, on Market Square, built in 1915
Courtesy of the High Commissioner of South Africa

JOHANNESBURG. City of the Transvaal, S. Africa. The centre of the gold-mining industry, it lies at an elevation of 5,740 ft., 975 m. from Cape Town and 46 from Pretoria. A well-planned modern city, its buildings include the town hall, post office, law courts, stock exchange, art gallery, and public library. S. Mary's church is the Anglican cathedral, the diocese having been created in 1922. There are parks, zoological gardens, racecourses, and other amenities. The observatory is outside the city proper. Johannesburg is the seat of the University of the Witwatersrand, constituted in 1922, which grew out of the school of mines and technology. The main industry is that of supplying the wants of the mines and miners. There is a large live-stock market, and the meat chilling industry is becoming increasingly important.

Johannesburg was founded in 1886, on the discovery of gold on the Rand. It is named after the surveyor, Johannes Risselk. It grew with amazing rapidity, and in 1896, having meanwhile been linked up by rail with the coast, had a pop. of over 100,000. In Sept., 1928, the town was formally made into a city. Pop. (1926), 170,741 whites. See *Gold; Witwatersrand*.

JOHN. Saint and apostle. The son of Zebedee and Salome, a sister of Mary, the mother of Jesus, he was a master fisherman on the Sea of Galilee, came under the influence of John the Baptist, and with his brother James was among the earliest of the followers of Christ. John was prominent at the Last Supper and present at the trial of Jesus before the Sanhedrim and the Roman procurator. He stood by the Cross, and into his care Jesus committed His mother. His festival occurs on Dec. 27.

JOHN THE BAPTIST. Christian saint, and last of the O.T. prophets. Son of Zacharias and Elisabeth, he was born in Judea. Ordained from birth to be a Nazirite, he lived in the wilderness apart. John soon began to preach, prophesying that the kingdom of Heaven was at hand, proclaiming the coming of Christ, calling the people to repentance, and practising baptism as an outward symbol of repentance. Herod was moved by his preaching, but when John reproved the tetrarch for his unlawful marriage, he was cast into prison, and later beheaded. His birth is commemorated on June 24; his beheading is a black-letter day (Aug. 29). See *Herod*.

JOHN. Name of 23 popes, of whom the following are the most notable. John VIII (d. 882), pope 872-882, directed his efforts chiefly to the conversion of the Slavs and the avoidance of a breach with the Eastern Church. On the death of Louis II, 875, the pope used his influence to secure the imperial crown for Charles the Bald, on whose death in 877 John promoted the cause of Charles the Fat. In 878 Rome was seized by the duke of Spoleto, and John retired to France.

John X, of Ravenna, pope 914-23, led the Italian princes against the Saracens and defeated them at the river Garigliano in 916.

John XII (c. 937-964), pope 955-964, made an alliance with the German king Otto, whom he crowned emperor Feb. 2, 962. In his absence the pope was accused of various crimes, and was declared deposed, a layman being crowned pope as Leo VIII. A counter-revolt enabled John to return and to execute savage vengeance on his enemies. Shortly after he died of paralysis. John XIII, a Roman noble, pope 965-72, allied himself with the emperor Otto II, and developed the hierarchy in Germany and Italy. John XVI, archbishop of Piacenza, was an anti-pope 997-98, who was created by Crescentius and deposed by Gregory V.

John XXII (1249-1334), pope 1316-34 took up his residence at Avignon. The main events of his pontificate were the long conflict with Louis of Bavaria and the establishment of the papal see on French soil. John XXIII (c. 1370-1419) was anti-pope during the Great Schism. Chosen in 1410 as pope of the Pisan party, he was driven from Rome by the approach of Ladislaus, king of Naples. Deposed by a general council in 1414, John was kept in confinement till after the election of Martin V, whom he acknowledged. Created cardinal-bishop, John died Nov. 29, 1419.

JOHN (1167-1216) King of England. The youngest son of Henry II and his wife, Eleanor, he was born at Oxford, Dec. 24, 1167. In 1177 he was made lord of Ireland, and he went to that country in 1185. Returning to England, he joined his brother, Richard, and Philip Augustus of France in their struggle against Henry II. John's reign was a period of disaster. He became involved in a war with France, a quarrel with the pope, and a dispute with his barons. The results were the loss of Normandy, the humiliation of the interdict, and the forced signature of Magna Carta. He had renewed the war against the barons when he died at Newark, Oct. 19, 1216. John had two sons, Henry III and Richard, earl of Cornwall. See *Magna Carta*.

JOHN. Name of several East Roman emperors. Their numbers are variously given, according as some are included in or omitted from the list of rulers. Their surnames were Tzimisces, Comnenus, Ducaas, Lascaris, Palaeologus, and Cantacuzene.

John Cantacuzene (called V or VI), East Roman emperor 1341-54, had been the minister and general of Andronicus III. The latter's widow acted as regent for his son Palaeologus, aged nine years. John, however, had himself proclaimed emperor in Thrace. On Feb. 6, 1347, he entered Constantinople, and was acknowledged as the colleague of Palaeologus. Civil war broke out, and Cantacuzene made the mistake of calling upon the Ottoman Turks for assistance, which gave them a footing in Europe. Finding his unpopularity growing, he abdicated in Dec., 1354.

JOHN (1296-1346). King of Bohemia. A son of the emperor Henry VII, born Aug. 10, 1296, he was crowned king of Bohemia in 1311. Disappointed at not succeeding Henry as emperor in 1313, and tiring of Bohemia, he passed the next few years fighting for his friends in various parts of Europe. Although by now blind, he was eager to help Philip of

France against the English, and was killed at Crécy Aug. 26, 1346. His son Charles became the emperor Charles IV.

JOHN. Name of two kings of France. John I, son of Louis X, was born Nov. 15, 1316. His father having just died, he became king at once, but he only lived seven days. John II (1319-64), surnamed the Good, was born near Le Mans, son of Philip VI, and succeeded his father in 1350. In 1356 John was defeated by the Black Prince at Poitiers, and brought captive to England. In 1359 an agreement for his liberty was rejected by the states-general, and he did not return to France until 1360. His son, Louis, broke his parole as his hostage, 1363, and John returned in 1364 to London, where he died in the same year.

JOHN (1624-96). King of Poland, known as John Sobieski. Born at Olensko June 8, 1624. Sobieski became grand marshal of



John III,
King of Poland

Poland in 1665, and commander-in-chief in 1667. Instigated by the Porte, Cossacks and Tartars advanced into Podolia and captured Kamieniec. To secure peace the king, Michael Wisniowiecki, was compelled to cede the Ukraine. Hereupon Sobieski marched against and destroyed the main Turkish host at Khotin, Nov. 10, 1673. On that same day King Michael died, and in April, 1674, Sobieski secured his own election as king. He proceeded to the Ukraine and conducted a successful campaign against the Turks, who made peace at Zarnovo, Oct. 16, 1678, yielding back the Ukraine on the Polish side of the Dniester. In 1683 Sobieski entered into an alliance with the emperor Leopold to drive the Turks from the Polish and Austrian borders. He crossed the Danube, annihilated the Turkish army, and relieved Vienna. Sobieski died June 17, 1696.

JOHN (1545-78). Spanish soldier, known as Don John of Austria. Born at Ratisbon Feb. 24, 1545, his early life was passed in Spain, and in 1559 his half-brother, Philip II, made him a member of the royal family. In 1571 John was in command of the fleet that crushed the Turks at Lepanto, which feat immortalised his name. He was sent in 1576 as governor-general to the Netherlands. On Oct. 1, 1578, he died of fever.

JOHN, THE EPISTLES OF. Three epistles in the N.T. All written in a style resembling that of the fourth Gospel, they are attributed to S. John. It is usual to group together the fourth Gospel, the three Epistles of John, and the Book of Revelation as the Johannine writings. The problem of authorship concerns all of them. Papias refers to two disciples of the same name, John (evidently the apostle) and the elder John (or the presbyter John). It is not certain which John is intended as the author of the Johannine writings.

JOHN, THE GOSPEL OF. Book of the N.T. It is an attempt to justify Christianity from the historical facts connected with the career of Jesus. There is serious controversy on the question of its authorship. The conservative position maintains that the Gospel was written by John the apostle. Other scholars hold that it was composed by a disciple of the apostle, who embodied material which came from John himself. The most advanced school thinks that the Gospel was written by an unknown Christian, possibly connected with Alexandria or Ephesus, about A.D. 140.

JOHN, AUGUSTUS EDWIN (b. 1878). British artist. He entered the Slade School and began to exhibit about 1899. Unconventional in his presentation of beauty, he possesses great qualities as a draughtsman, has achieved

eminence as a portraitist and subject painter, and is an etcher of exceptional quality.



Augustus John,
British artist

In 1921 he was made an A.R.A. and in 1928 an R.A. Among his works are a cartoon for the Canadian War Memorial, portraits of G. B. Shaw, D. Lloyd George, and Madame Suggia, *The Way Down to the Sea* and *The Orange Jacket*. For the R.A. exhibition of 1930 he produced a notable portrait of Tallulah Bankhead, the actress.

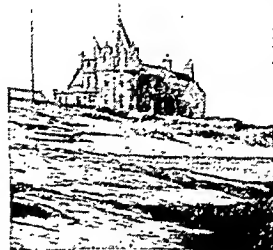
JOHN, SIR WILLIAM GOSCOMBE (b. 1860). British sculptor. He studied under Dalou at the Lambeth School, at the R.A. schools, and in Paris. He also travelled in Italy, Spain, and the East. He became A.R.A. in 1899, R.A. in 1909, and was knighted in 1911. Among his numerous works are Sir Arthur Sullivan (S. Paul's), and statues of King Edward VII (Cape Town) and Lord Salisbury (Westminster Abbey); also a number of war memorials.



John Bull, depicted
by Sir John Tenniel
Courtesy of the
proprietors of Punch

JOHN BULL. Name used as a personification of the English nation, for the English nation as a body, and for the typical Englishman. The name and character were first popularised in 1712 by John Arbuthnot, the friend of Swift and Pope, in the *History of John Bull*, pamphlets attacking the Whig war policy.

JOHN O' GROAT'S. Name given to a spot on the N. coast of Caithness, Scotland. It is about 2 m. W. of Duncansby Head and 14 N. of Wick. Being only slightly S. of Dunnet Head, John o' Groat's came to be used colloquially for the most northerly point of Great Britain. The name is due to a house erected here by a Dutchman named Groot in the early 16th century. The story goes that in order to prevent disputes about precedence in his family, John built an octagonal house with eight doors, so that each of the eight Groots could enter by his own door. See Caithness.



John o' Groat's. Hotel at the most
northerly point of Great Britain

JOHNSON, AMY (b. 1904). British airwoman. Born at Hull, she studied at Sheffield University, where she graduated. Abandoning the idea of becoming a teacher, she went to London and entered on a business career, but in Sept., 1928, decided to devote her whole time to aviation. She soon became a qualified pilot, and was the first woman to take out an engineer's licence. On May 5, 1930, she set out from Croydon on a D.H. Moth machine to fly alone to Australia. After a very plucky but perilous 19 days' flight she reached Port



Amy Johnson,
British airwoman
Lafayette

Darwin, Northern Australia, on May 24. She established a record by reaching Karachi in six days. See *Australian Flight*.

JOHNSON, ANDREW (1808-75). President of the United States. Born at Raleigh, N. Carolina, Dec. 29, 1808, in 1835 he was sent to the state legislature. Member of the House of Representatives, 1843-53, after serving as governor of Tennessee between 1853 and 1857, he returned to Congress, this time in the Senate. In 1864 he was chosen vice-president, and the murder of Lincoln made him president. Johnson followed the policy of clemency inaugurated by Lincoln, but soon a sharp divergence of opinion arose between the president and the Republican majority of Congress, and a constitutional crisis was the result. He was impeached and tried before the Senate, but was acquitted. He left office in 1868, and died July 31, 1875.

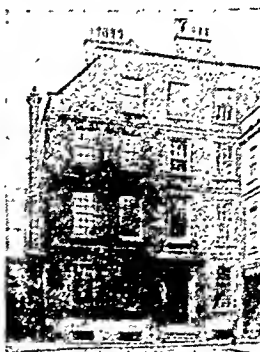
JOHNSON, JACK (b. 1878). Negro pugilist. Born at Galveston, U.S.A., he first became famous by knocking out Bob Fitzsimmons in the second round, at Philadelphia, July 17, 1907, and secured the world's heavyweight championship by beating Tommy Burns at Sydney, Dec. 26, 1908. On July 4, 1910, Johnson fought his famous battle at Reno, Nevada, with James J. Jeffries. Johnson held the world's championship until beaten by Jesse Willard, at Havana, April 5, 1915.

JOHNSON, SAMUEL (1709-84). British essayist and lexicographer. Born at Lichfield, Sept. 18, 1709, the son of a bookseller, he proceeded in 1728 to Pembroke College, Oxford, leaving there without a degree. After trying, without success, to keep a school near Lichfield, he came to London with Garrick, in 1737, to pick up a living by his pen. He did some task work on *The Gentleman's Magazine*, and, in 1744 wrote a vigorous *Life of the poet Savage*. He then turned to poetry, and produced two satires, *London*, 1738, and *The Vanity of Human Wishes*, 1749, and obtained, through Garrick, the production of his tragedy, *Irene*, at Drury Lane. In 1747 he published his *Plan*, addressed to Lord Chesterfield, for the Dictionary. Chesterfield withheld his patronage, but the Dictionary proceeded, and was published in 1755. For this great work he received the not too liberal sum of £1,575.

In 1750 he began to write *The Rambler*, a semi-weekly series of essays and tales, and in 1759 he issued a second series in a lighter vein, entitled *The Idler*. To defray the funeral expenses of his aged mother, Johnson wrote his novel *Rasselas*, in a week, for £100. In 1762 he received a government pension of £300 a year. A year later he met James Boswell, who immediately conceived the happy idea of writing Johnson's life. In 1764 Johnson founded the famous club of which Sir Joshua Reynolds, Burke, Goldsmith, and others were members. Johnson's edition of Shakespeare



Samuel Johnson,
British essayist
After Sir J. Reynolds



Dr. Johnson's house in Gough
Square, London, where he pro-
duced his Dictionary

appeared in 1765, and in 1773 he visited the Hebrides with Boswell, both publishing accounts of the tour. Johnson's last work, *Lives of the Poets*, appeared in 1781. He died Dec. 13, 1784. His house in Gough Square, Fleet Street, was opened to the public in 1914.

In Boswell's inimitable *Life* are described, with masterly genius, the varied characteristics of the great doctor, his rugged personal appearance, his vigorous talk and ready wit, his simple piety and benevolence, his uncouth manners, his kindness of heart, and his wide and thorough scholarship.

JOHNSTON, SIR HARRY HAMILTON (1858-1927). British explorer and writer. Born in London, June 12, 1858, he travelled in N. Africa, 1878-80, and explored Portuguese W. Africa and the Congo, 1882-83. In 1884 he led an expedition to Mt. Kilima-Njaro, was appointed H.M. vice-consul to Cameroons, 1885, acting consul in the Niger Coast Protectorate in 1887, and consul for Mozambique in 1888. In 1889 he explored Lakes Nyasa and Tanganyika and founded the British Central Africa Protectorate. Knighted in 1896, he was commander-in-chief and consul-general for the Uganda Protectorate. Johnston, who wrote largely on tropical Africa, 1899-1901, died July 31, 1927.

JOHNSTON, MARY (b. 1870). American novelist. Born at Buchanan, Virginia, Nov. 21, 1870, she made a success in 1898 with *Prisoners of Hope*, called also *The Old Dominion*, in which, as in later stories, she gave excellent pictures of life in Virginia before the declaration of independence. Other of her novels deal with the period of the Civil War. They include *To Have and to Hold*, 1900; *By Order of the Company*, 1900; *Audrey*, 1902; *Sir Mortimer*, 1904; *The Long Roll*, 1911; *Cease Firing*, 1912; *The Wanderers*, 1917; *Michael Forth*, 1919; *The Exile*, 1927.

JOHNSTONE. Burgh of Renfrewshire, Scotland. On the Black Cart, 10 m. W. of Glasgow, it is served by the L.M.S. Rly. In a mining district, other industries are engineering works, cotton mills, flax mills, paper mills, and foundries. Near is Elderslie, which is said to be the birthplace of Sir William Wallace. The burgh of Johnstone was only a hamlet before the introduction of the cotton manufacture about 1780. Pop. 12,473.

JOHORE. Sultanate in the Malay Peninsula under British protection. At the S. extremity of the peninsula, it covers 7,678 sq. m. Rubber and tin and iron ore are the principal exports. It is crossed by the rly. from Singapore through Johore Bahru, the capital, northwards to the Straits Settlements and the Federated Malay States, the line being carried over Johore Strait on a causeway. Pop. 330,256. See *Malaya*.

JOICEY, JAMES JOICEY, BARON (b. 1846). British coalowner. Born April 4, 1846, as a youth he became connected with the mining industry. He became one of the chief figures in the Durham coalfield. Joicey was Liberal M.P. for the Chester-le-Street division of Durham from 1885 to 1905, when he was made a peer. He had been a baronet since 1893. His dislike of the Budget of 1910 caused him to leave the Liberal party and to sell his extensive estates in Montgomeryshire.

JOINT. In anatomy, articulation between two bones. The following forms of joints are recognized: Synarthroses, or immovable joints, such as those between the component bones of the skull; amphiarthroses, which allow slight movement between the bones, e.g. the inferior tibio-fibula joint; and diarthroses, or freely movable joints. Diarthroses are subdivided into ginglymus or hinged joint; condyloid joint, in which the surfaces are spheroidal and allow of all varieties of angular movements; saddle joint, in which the

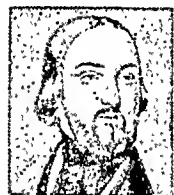
movements are similar to those in the condyloid joint, but the articular surfaces are saddle-shaped; ball-and-socket joint, in which the articular surfaces are approximately spherical and free movement in any direction is allowed; trochoid or pivot joint, in which rotation only is allowed; and arthrodia or gliding joint, in which the articular processes are nearly flat and allow only gliding movements.

In geology, a joint is a plane dividing rock strata. These planes are nearly always approximately at right angles to the bedding planes. They are caused by irregular cooling of molten rocks by earthquakes, and by pressure. See Geology.

In engineering and woodworking, a joint is a device for holding together members of a structure. Hinges, ball-and-socket joints, toggle joints, etc., are examples of movable joints; butt joints welds and fishplates are examples of fixed joints.

JOINTURE. Legal term signifying strictly a joint estate limited to both husband and wife but in common acceptance extended also to a sole estate limited to the wife only. It represents a settlement on marriage.

JOINVILLE, FRANÇOIS, PRINCE DE (1818-1900). French sailor. Born at Neuilly, Aug. 14, 1818. the third son of Louis Philippe, king of the French, he entered the navy in 1836, and for the next ten years saw much active service.

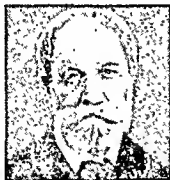


Prince de Joinville.
French sailor

The events of 1848 drove him into retirement, and he was a refugee in England until 1870. He then returned to France. Although expelled, he went back in disguise, and fought in the later stages of the Franco-Prussian War. Two departments elected him to the National Assembly of 1871, and he sat in the Chamber until 1876. He died in Paris, June 16, 1900. His wife was a daughter of Pedro I, emperor of Brazil.

JOINVILLE, JEAN DE (1224-1319). French historian. A member of one of the oldest and noblest families in Champagne, he became a courtier and a soldier. He went on crusade with S. Louis, in the expedition of 1248-54, but declined to take part in the one which ended the king's career. About 1281 he began to write his History of S. Louis, which he finished in 1309. He died July 11, 1319. Joinville gives an excellent picture of his time, and his work is full of interesting, if not always relevant, detail.

JOKAI, MAURICE (1825-1904). Hungarian author. Born Feb. 19, 1825, he became a writer and, living in Budapest, produced novels, histories, dramas, poems, and essays. He edited several papers, and from 1861 to 1897 was a member of the lower house of the Hungarian legislature. Afterwards he sat in the upper house. He died May 5, 1904. Many of his stories have been translated into English. The best known are *The Turks in Hungary*, 1852; *The New Landlord*, 1868; *The Modern Midas*, 1886; *Eyes Like the Sea*, 1893; *Black Diamonds*, 1896; *The Lion of Janina*, 1897; and *A Hungarian Nabob*, 1898.



Maurice Jokai,
Hungarian novelist.

JOLIETTE. Town of Quebec, Canada. On the Assomption river, 36 m. N.N.E. of Montreal, it is served by the C.N.R. and C.P.R. There are lumber and saw mills, foundries, and paper mills. Pop. 9,113.

JOLLY BOAT (Dan. jolle, yawl, confused with the English adj. jolly). Name given to a general utility boat carried by largo vessels. It can be either rowed or sailed, collapsible rigging being provided. See Boat: Cutter.

JONAH. Author of an O.T. book. This belongs to a group of writings known as the "twelve prophets" or the minor prophets. A Jonah is mentioned in 2 Kings 14, 25, as Jonah, son of Amittai, the prophet who was of Gath-hepher. The book of Jonah, which is in the form of a narrative, represents the prophet Jonah as having preached in Nineveh. This may be based upon an old tradition.

JONATHAN. Eldest son of Saul. Famous as a warrior, he was the hero of the campaign against the Philistines called the war of Michmash. He is chiefly remembered, however, for his friendship with David. With his father, Jonathan fell in battle on Mt. Gilboa. (1 Sam 13, 14, 18, 20, 22, and 31: 2 Sam 1.) See David.



Henry Arthur Jones,
British dramatist
Russell

Saints and Sinners, 1884, followed by a long series of successful plays. They include *The Dancing Girl*, 1891; *The Liars*, 1897; *Mrs. Dane's Defence*, 1900; *The Ogre*, 1911; *The Pacifists*, 1917; *The Lie*, 1923. Jones also wrote on the theatre: *Renascence of English Drama*, 1895; and *Foundations of a National Drama*, 1913. Jones entered readily into controversy, as, for example, in his work *My Dear Wells*, 1921. He died Jan. 7, 1929. Consult his *Life and Letters*, by his daughter. Mrs Thorne 1930.

JONES, INIGO (1573-1652). English architect. Born at West Smithfield, he was apprenticed to a joiner. Lord Pembroke provided him with the means for a European tour. Returning in 1604, he was employed in designing court masques, which brought him into keen rivalry with Ben Jonson (q.v.). In 1613 he visited Italy, and in 1615 was appointed surveyor-general. In 1617 he designed the Queen's House at Greenwich, and in 1619 the Banqueting House at Whitehall. In the Civil War he was taken prisoner by the Roundheads. He died June 21, 1652. Jones introduced the Palladian style into England.



Inigo Jones,
English architect
After Van Dyck

JONES, JOHN PAUL (1747-92). Scottish-American sailor. Born at Kirkcubright, Kirkcubrightshire, July 6, 1747, he became skipper of a Whitehaven slaver. Settling in Virginia, he obtained a command in the American navy, 1775, and waged war against British trade. In 1777 he crossed the Atlantic in the Ranger frigate, and the following year landed at Whitehaven and dismantled the already ruined fort. After a similar exploit in Kirkcubright Bay, Jones captured the frigate Drake. In the Bonhomme Richard he captured the British ship Serapis off Scarborough in 1779. Jones was appointed an admiral in



John Paul Jones, Scottish-American sailor
After G. W. Peale

the Russian navy, 1788 but returned to Paris in 1790, where he died; July 18, 1792.

JONES, ROBERT TYRE (b. 1901). American golfer, popularly known as Bobby Jones. A member of the legal profession, he became one of the best amateur golfers in the U.S.A. He won the British open championship in 1926, 1927, and again in 1930, and the American open championship in 1929 and 1930. In 1930 he was captain of the U.S.A. team which retained the Walker Cup in the team match against Great Britain. See Golf.

JONES, SIR WILLIAM (1746-94). British scholar. Born Sept. 28, 1746, he was educated at Harrow and Oxford and showed an extraordinary aptitude for languages. He became a barrister, and in 1783 went to India as judge of the high court at Calcutta. He was then knighted. Jones was the first Englishman to learn Sanscrit, the affinity of which to Greek and Latin he immediately appreciated, a discovery of the utmost importance to the study of philology. He issued many translations of Vedic literature, and died April 27, 1794.

JONESCU, TAKE (1858-1922). Rumanian statesman. Born at Ploeshti, Wallachia, Oct. 25, 1858, he established himself as a lawyer, and became a great advocate. Minister of justice and vice-president of the council, in politics he was the leader of the Conservative-Democrats. After Rumania had thrown in her lot with the Allies in the Great War he joined the coalition government formed by Bratianu. Early in 1918 he and Bratianu both resigned on being outvoted on the question of Rumania's resuming the struggle against the Central powers. He died June 21, 1922.

JONQUIL (*Narcissus jonquilla*). Bulbous perennial herb of the order *Amaryllidaceae* native of Spain, whence it was introduced to British gardens about 1596. From the egg-shaped bulb arise several narrow half-rounded leaves from 8 ins. to 12 ins. long, and one or two tall flowering stems ending in a spathe. From this emerge later from two to six separately stalked fragrant flowers about 1½ ins. across, with a tube almost as long. In colour they are bright yellow, with saucer-shaped crown.



Jonquil. Flower-head and leaves

JONSON, BEN (c. 1573-1637). English poet and dramatist. Born in Westminster, he volunteered for service in Flanders, returning to London about 1592. He became an actor, was employed by Henslowe as a hack playwright, fought a duel with and killed a fellow-actor, Gabriel Spencer, was indicted, 1598, at the Old Bailey, and liberated on pleading benefit of clergy. In 1598 he produced his comedies *Every Man in His Humour* and *The Case is Altered*, these being followed in 1599 and 1600 by *Every Man Out of His Humour* and *Cynthia's Revels*. In 1603 his tragedy *Sejanus* was produced. In 1604-5 came the first of his thirty or more masques. In 1605 he completed his tragedy *Volpone*. The comedy *Epicene* or *The Silent Woman*, 1609-10, was followed by *The Alchemist*, 1610, and *Catiline*, 1611. After visiting the Continent in 1613 as tutor to the son of Sir Walter Raleigh, he wrote his comedy *Bartholomew's Fair*, and began



Ben Jonson, English poet and dramatist
After G. Honthorst.
Nat. Port. Gall.

his quarrel with Inigo Jones. In 1616 he published his Works and was granted a Royal pension. His play *The Devil is an ass* was produced in this year. Jonson's later plays show a decline in power. *The Staple of News*, 1626 was a failure, and with the death of James I, and his own illness, Jonson's star began to wane. In 1629 came *The New Inn*, which, with *The Magnetic Lady*, 1632, and *A Tale of a Tuh*, 1633, failed to obtain public favour. Four years later he died in comparative poverty.

Joppa. Ancient name for the town of Palestine better known as Jaffa (q.v.).

JORDAENS, JAKOB (1593-1678). Flemish painter. Born at Antwerp, he obtained, mainly through Ruhens, the patronage of the kings of Spain and Sweden and the Princess Amelia of Orange, for whom he painted his masterpiece, *The Triumph of Prince Frederick Henry of Nassau*, now in the Huist en Bosch, The Hague. He painted the convivial men and women of his time with rare expressiveness.

JORDAN. River of Palestine. Rising in the Mt. Hermon range, it flows S. through the Waters of Merom to the Sea of Galilee, from which, falling 1,300 ft. below sea level, it descends into the Dead Sea. Its length is about 200 m. Its tributaries, both from the E., are the Yarmuk and the Jabbok. In 1928 a scheme was set on foot for using the waters of the Jordan to provide electric power.

JORDAN, DOROTHY OR DOROTHEA (1762-1816). Irish actress. Born near Waterford, she played for the first time in London at Drury Lane as Peggy in *The Country Girl*, Oct. 18, 1785, and soon became recognized as an admirable performer of breeches parts. She remained at Drury Lane with one interval until 1809, obtaining her chief successes in comedy rôles. She made her final appearance at Covent Garden, June 1, 1814, as Lady Teazle, and died at St. Cloud, July 3, 1816.



Dorothy Jordan,
Irish actress
After Romney

From 1790 until 1811 she was the mistress of the duke of Clarence, later William IV, and bore him a large family, called Fitzclarence.

JORDANES, less correctly Jornandes (6th century A.D.). Historian of the Goths. Belonging to the Alani, a tribe not akin to, though influenced by, the Goths, he wrote two works in Latin, a compendium of history from the Creation to his own times, and a history of the Goths based on a lost work by Cassiodorus. Jordanes represents the Goths as the most enlightened of the barbarian tribes.

JORDANS. Quaker burial ground in Buckinghamshire. It is about 2 m. from Chalfont St. Giles. It contains the graves of Milton's friend Ellwood, and of William Penn. At Jordans the Friends met from their earliest days, and in 1671 they acquired this piece of ground for a graveyard. The present meeting house was erected in 1688. A barn near is believed to have been built out of the timbers of the Mayflower. (q.v.). See Society of Friends.



Jordans. Meeting House of the Society of Friends in Buckinghamshire

ment, where his skill in interpreting dreams brought him to the notice of the king. Pharaoh gave him charge of the arrangements for meeting an impending famine, and thus Joseph rose to be prime minister of Egypt. On the arrival of his brothers to buy corn he disclosed his identity, and invited his father and his family to Egypt, where they settled in Goshen.

JOSEPH. Husband of the Virgin Mary and foster-father of Christ. He was a native of Bethlehem and a carpenter at Nazareth. There is no mention of him after he accompanied Mary to Jerusalem when Christ was twelve years old. See Jesus Christ; Mary.

JOSEPH. Name of two rulers of the Holy Roman Empire.

Joseph I (1678-1711) was born July 26, 1678. Carefully educated and possessing cultured tastes, he was made king of Hungary in 1687, and king of the Romans in 1690. Having seen military service during the war of the Spanish Succession, he became emperor during its progress, 1705. He died April 17, 1711.

Joseph II (1741-90) was born March 13, 1741. In 1764 he was chosen king of the Romans. In 1765, on the death of his father, he became emperor, and colleague of his mother, Maria Theresa, in the government. In Nov., 1780, Joseph became actually ruler of Austria and the other Hapsburg lands. He put in hand a series of reforms, beneficent in the main. In foreign politics he tried to secure Bavaria and to add to his dominions elsewhere. He died Feb. 20, 1790.

JOSEPH OF ARIMATHEA. A wealthy Jew, apparently a member of the Sanhedrim, and a secret disciple of Christ. After the Crucifixion he used his influence with Pilate to obtain possession of Christ's body, which he hurried in the tomb prepared for himself.

JOSEPHINE MARIE ROSE (1763-1814) Empress of Napoleon I. Born at Trois-Ilets, Martinique, June 24, 1763, in 1777 she was married to the viscount de Beauharnais, who was guillotined in July, 1794. Well known in political circles in Paris, in 1796 she married Napoleon, then about to leave for the Italian expedition. She was crowned empress in 1804. Mutual jealousies and the barrenness of the union caused Napoleon to divorce her in Jan., 1810, after which Josephine lived in retirement until she died on May 24, 1814.



Empress Josephine,
wife of Napoleon I
After François Gérard

JOSEPHUS, FLAVIUS (A.D. 37-c. 100) Jewish historian and revolutionary leader. Born at Jerusalem, he was first disinclined to join the Jewish rebellion, but later threw himself into it with energy. After the gallant defence at Iotapata he was taken prisoner, but afterwards released. After the capture of

Jerusalem (70) he went to Rome, where he enjoyed the patronage of Vespasian, Titus, and Domitian, and was granted the citizenship. His works are *The Jewish War*, in seven books, a pro-Jewish propaganda; *Jewish Archaeology*, or *Antiquities of the Jews*, in twenty books; *Autobiography*; and *Against Apion*, this being a defence of Judaism.

JOSHUA. Author of a book of the O.T. It gives an account of the exploits of Joshua, the son of Nun, who succeeded Moses as leader of the Israelites into the Promised Land. It falls into three divisions: (a) History of the Conquest of Canaan, 1-12; (b) Division of

the conquered territory, 13-21; (c) Joshua's addresses to the tribes, with an account of his death and burial, 22-24.

JOSIAH. King of Judah. He succeeded his father Amon when only eight years old. During repairs to the Temple the lost book of the law was found. Greatly affected by its perusal, he set to work to cleanse the land of idolatry. Years of peace and prosperity followed, until Pharaoh Necho came with an army to fight against the Assyrians. Josiah attacked him, and fell at the battle of Megiddo (2 Kings 22-23).



Petrus J. Jonbert,
Boer soldier

JOUBERT, PETRUS JACOBUS (1834-1900). Boer soldier. Born in Cape Colony, as commander-in-chief of the forces of the South African Republic he defeated the British at Laing's Neck, Ingogo and Majuba in the Boer War of 1880-81. On the outbreak of the war with Britain in 1899 he was in chief command, and the result of his careful preparation bore fruit in the initial Boer successes. The rigours of campaigning, however, proved too hard for him, and he died at Pretoria, March 27, 1900.

JOULE, JAMES PRESCOTT (1818-1889). British physicist. Born Dec. 24, 1818, at Salford, he took up the study of electricity and magnetism. At 19 he published his first paper, *On an Electro-magnetic Engine*, and followed it with a number of others which attracted widespread attention. During his experiments and attempts to measure electricity, Joule was led to ascertain the mechanical equivalent of heat, with which his name is imperishably connected. He received numerous honours from the leading universities and scientific societies of the world. He died Oct. 11, 1889.

The joule is a practical unit of electrical work. It is the equivalent of the work done in a conductor in one second by one coulomb, at a pressure of one volt.

Jove. Popular name of Jupiter, who was the chief deity of Roman mythology. See Jupiter.

JOVIAN. Roman emperor, June, 363-Feb., 364. An officer of the imperial guard, he was proclaimed emperor by the soldiery after the death of Julian in the Persian campaign.

Jovian was compelled to conclude a humiliating peace with Persia. Within eight months of his accession he was found dead at Dadas-tana, in Bithynia.

JOWETT, BENJAMIN (1817-93). British scholar. Born at Cambervell, April 15, 1817, he was educated at S. Paul's School and Balliol College, Oxford, and was ordained in 1842.



Benjamin Jowett,
British scholar

He passed from the evangelical school of his youth to attach himself to the liberal party in the Anglican Church. In 1855 he was chosen professor of Greek, and from 1870 until his death, Oct. 1, 1893, he was master of Balliol. The most prominent figure in the Oxford of his day, Jowett raised Balliol to pre-eminence among its colleges. He was an advocate of university reform and of a wider education generally. As a Greek scholar his best work was done on Plato. Many stories are told of Jowett's conversation, shrewd and full of unexpected remarks.



Jovian,
Roman emperor
From a coin

JOWITT, SIR WILLIAM ALLEN (b 1885). British lawyer. The son of a clergyman, he was educated at Marlborough and New College, Oxford. He became a barrister in 1909, and in 1922, when just made a K.C., was elected Liberal M.P. for the Hartlepoons. He lost his seat in 1924, but in 1929 was elected for Preston. Just after his election he joined the Labour Party and was made attorney-general; on appealing to his constituents he was again returned as their member, July 31, 1929.



Sir W. A. Jowitt,
British lawyer
Russell

turned as their member, July 31, 1929.

JUAN FERNANDEZ. Island group in the Pacific Ocean. Belonging to Chile, they are 360 m W of Valparaiso, lat. 80° W. Mas-a-tierra, the largest island, is also known as Juan Fernandez island. Mas-a-fuera and Santa Clara complete the group. Mas-a-tierra is 12 m. by 3½ m. and Mas-a-fuera 6 m. by 3½ m. The islands are of volcanic origin.

Mas-a-tierra was discovered by Juan Fernandez in or about 1565. On it a Scotsman, Alexander Selkirk, lived alone from 1704-9, and his adventures are believed to have furnished Defoe with the groundwork of Robinson Crusoe. The Chilean government, in 1921, proposed to turn the island into a national park. There is a wireless station.

JUAREZ, BENITO PABLO (1806-72). President of Mexico, 1858-72. Born March 21, 1806, in the state of Oaxaca, S. Mexico, he became a judge of the civil court in 1842. When Oaxaca declared its independence in 1846, he became one of the voting triumvirate. On the federal restoration in 1847 he was a member of the constituent congress and governor of Oaxaca. In 1853, on Santa Anna's return to power, Juarez was exiled, but he returned in 1855, and at the beginning of 1858 was elected president and set up his government at Vera Cruz. In 1861 he entered Mexico City, but was driven out by the French who sought to establish the Austrian archduke, Maximilian, as emperor. After the shooting of Maximilian, 1867, Juarez was re-elected president, and again in 1871. He died July 18, 1872. See Mexico.

Jubal. Son of Lamech and Adah. He is traditionally the inventor of musical instruments (Gen. 4, 21).

JUBALAND. Italian territory in Africa, a prov. of Southern Somalia. Bounded S.E. by the Indian Ocean and W. by Tanaland, it consists of a tract of country from 50 to 100 m. wide on the right bank of the Juba river. The capital is Kismayu (q.v.). Formerly part of Kenya, Jubaland, including Kismayu, was ceded to Italy by Great Britain in 1925. Pop. 180,000. See Kenya.

JUBBULPORE. Town and div. in Central Provinces, India. The city, on the Narbada, stands at the junction of the Great Indian Peninsular Rly. from Bombay and the East India Rly. from Allahabad, and is one of the chief rly. centres in India. There is a college affiliated to the university of Nagpur. The area of the division is 18,950 sq. m. Pop., town, 108,793; division, 2,296,508. See India.

JUBILEE (Heb. jobel or yobel, a ram's horn trumpet). Jewish festival celebrated during every 50th year before the Babylonian Captivity. Held in celebration of the release from Egyptian bondage, it was proclaimed by the sound of trumpets, and began on the day of Atonement (q.v.). During the year of jubilee the land was allowed to be fallow, slaves were set free, all property reverted to its original owners or their descendants, and everyone returned to his family.

The term jubilee is used generally to define the 50th anniversary of any noteworthy event. A 60th anniversary is a diamond jubilee.

The Book of Jubilees is one of the non-canonical O.T. Apocrypha or Pseudepigrapha.

Judaea. Alternative spelling of Judea (q.v.), the district of Palestine.

JUDAH. Fourth son of Jacob and Leah. The misconduct of his three elder brothers, Reuben, Simeon, and Levi, resulted in his taking precedence over them. Jacob's prediction of his supremacy started the long feud which separated Judah and Israel. He died during the sojourn in Egypt.

JUDAS. One of the disciples of Christ, distinguished as "not Iscariot." Only mentioned once in the Gospels (John 14, 22), he is generally supposed to have been the person otherwise called Thaddaeus or Lebbaeus (Matt. 10, 3).

JUDAS ISCARIOT. One of the Apostles of Christ, who afterwards betrayed Him to the priests. He was the only Judean of the twelve, all the others being Galileans. He accepted a bribe of thirty pieces of silver to betray Christ, but subsequently returned the money and hanged himself in a fit of remorse.

JUDAS MACCABAEUS. Eldest son of the priest Mattathias. He was his successor in the leadership of the Jews against Antiochus Epiphanes about 166 B.C. He won several victories over the Syrian generals, and set up his headquarters at Jerusalem. He repaired and fortified the Temple, and established a regular service of priests. Demetrius Soter sent an army to Jerusalem to instal a new high priest, and Judas had to retire with his followers. In 161 he won the battle of Adasa and entered into a treaty of alliance with Rome. But Demetrius had invaded Judea with an army under Bacchides, and the Jews were routed at Elasa, where Judas was slain, 161 B.C. See Jews; Maccabees.

JUDAS TREE (*Cereis siliquastrum*). Small tree of the order Leguminosae, a native of S. Europe. It grows to a height of 20 ft. or 30 ft., and has polished, heart-shaped leaves. The flowers, which appear before the leaves, are pea-like, bright purple, and so abundant that the branches are hidden. It is said to be the tree on which Judas hanged himself.

JUDE, THE EPISTLE OF. One of the N.T. epistles. It belongs to the group known as the "Catholic Epistles," being apparently addressed not to particular communities but to Christians in general. If the author is the Jude or Judas of Matt. 13, 55, "one of the brethren of the Lord," the epistle must have been composed between about A.D. 60 and 70. The resemblances between the Epistle of Jude and the Second Epistle of Peter are so close that one must have borrowed from the other, or, on the other hand, both must have made use of a common source.

JUDEA. District comprising the S. part of Palestine in post-exilic days. When the Jews returned from the Babylonian Captivity, they settled here, and as they were mainly of the tribe of Judah they named their district Judea. The term sometimes means W. Palestine generally. See Jews; Palestine.

JUDGE (Lat. *judex*). Civil officer appointed to hear and determine criminal and civil causes. His function is to interpret the law as distinct from its enactment.

Judges of the king's bench division of the high court preside at the assizes, which are circuit courts of the high court of justice. Qualification for appointment as a judge of the high court is ten years' standing at the bar, and for a judge of the court of appeal 15 years' standing at the bar, or one year's service as a judge of the high court. In the county courts the judges are barristers of at least seven years' standing.

The Judge Advocate-General is an official appointed by letters patent under the great seal to advise the crown on matters of military law, and especially in relation to courts-martial. He also acts for the Air Ministry. For the British navy there is a judge advocate of the fleet. See Assizes.

In Jewish history the rulers of the people before the establishment of the monarchy were called judges. They existed for about 450 years until the election of Saul as king in 1095 B.C.

JUDGEMENT. In law, the decision of a court. The term is also often used for the actual delivery of a sentence. Judgements are divided into two classes, interlocutory and final. The former is delivered in the course of some cause upon some plea, etc., as an injunction or mandamus, while the latter, as far as the particular court is concerned, settles the action before the court.

JUDGEMENT SUMMONS. A judgement summons is one taken out against a judgement debtor, that is, one against whom judgement has been given, and who has, or is supposed to have, the means to pay, but refuses to do so. The judge is asked to make an order for payment, in default of which the debtor can be committed to prison for a short period.

JUDGES, THE BOOK OF. Book of the O.T. It is so called because it recounts the history of the Israelite tribal chieftains who led the people in peace and war from the time of the settlement in Canaan under Joshua until that of the birth of the prophet Samuel.

The book falls into four sections: (1) an introduction describing the state of Canaan at the beginning of the period of the judges, 1-2, 5; (2) a moralising prelude to the history, 2, 6-3, 6; (3) the history of the judges, or what has been described as the real kernel of the history, 3, 7-16, 31; and (4) an appendix describing some special episodes, 17-21. The book seems to represent a gradual growth, but much of it was probably compiled, with the help of older literary sources, in the 7th century B.C.

JUDICIAL COMMITTEE. Committee of the privy council, the final court of appeal in the British Empire. Constituted by the Act of 1833, amended three times since, it hears appeals from the courts of law throughout the Empire, except from those of Great Britain and Ireland, which go to the House of Lords. The members of the committee are the lord chancellor, and persons who hold or have held high judicial office in Great Britain, Ireland, or the Oversea Dominions. Such are former lord chancellors, the lord chief justice, and others.

The members meet in a room in Downing Street. When they have heard the case, they deliberate in private, decide by a majority, and depute one of their number to deliver the opinion of the committee. They do not deliver a judgement, but state that they will advise his Majesty to allow or disallow the appeal. If ecclesiastical cases archbishops and bishops can be called on to assist as assessors. See Appeal, Court of; Privy Council.

JUDITH, THE BOOK OF. One of the 35 he apocrypha. It was written originally in Hebrew towards the end of the 2nd c. B.C., was A.C. It is a kind of religious romance relating the adventures of a pious and pious woman, Judith, at the time of the return from the Captivity. See Holofernes.



Judge of English
High Court, in robes

JUGGERNAUT OR JAGANNATH (Skt. Jagannatha, Lord of the World). Name of a Hindu idol. It is kept in a temple dedicated to Vishnu or Krishna, at Juggernaut or Puri, in Orissa, anciently a sacred city of the Buddhists. On the most important of the many festivals in honour of the god the figure is dragged on a colossal car about a mile from its special temple and back again. This procession takes some time.

The idea that the festival is specially associated with self-immolation is erroneous, but it has given rise to the use of the term Juggernaut for any institution by which people or things are or may be crushed out of existence.

JUGURTHA (d. 104 B.C.). King of Numidia. His uncle Micipsa having left his kingdom to be divided equally between his two sons, Hiempsal and Adherbal, Jugurtha put them both to death and became sole ruler. He defied the power of Rome until he was defeated by Metellus and finally crushed by Marius. Taken to Rome, Jugurtha was starved to death. His life and campaigns were the subject of a work by Sallust, the Roman historian.

JUJITSU OR JU-JITSU. Japanese art of self-defence. Literally it means the soft way or gentle art, the two delicate qualities of leverage and balance being pitted against the rougher ones of strength and force. It was practised by the Samurai for many centuries, and until the accession of the mikado no one outside this caste was initiated into its secrets. It was introduced into England about 1900.

Leverage is applied to the assailant's limbs, which are forced into unnatural positions, called locks, to which there is no key; the victim or assailant must give in to the conqueror or have the limb broken. The neck, body, and hip joints are also attacked. The spine can be injured, the kidneys compressed, and the hips dislocated. The nerves and arteries can be operated upon.

The throws in jujitsu are very violent, but a jujitsu expert never gets hurt in falling or being thrown, as he has practised the break-fall, a very valuable branch of jujitsu. Its object is to save falling, or being thrown, on a joint or on the head. Consult *The Complete Jujitsuan*, W. H. Garrud, 2nd ed., 1919.

JUJUBE (*Zizyphus*). Genus of shrubs and trees of the order Rhamnaceae. Natives of Asia and Africa, they have alternate, oval and usually leathery leaves, and small greenish flowers. The fruits are fleshy, from $\frac{1}{2}$ in. to 1 in. in length, with a bony "stone" containing from one to four seeds. The common jujube (*Z. vulgaris*), a native of China, is now naturalised in Western Asia and S. Europe. It has twin prickles at the base of the leaves, and red or black, slightly acid, succulent fruit, the size of a cherry. The confectioners' jujubes derive their name from this fruit, once used in flavouring the sweet.

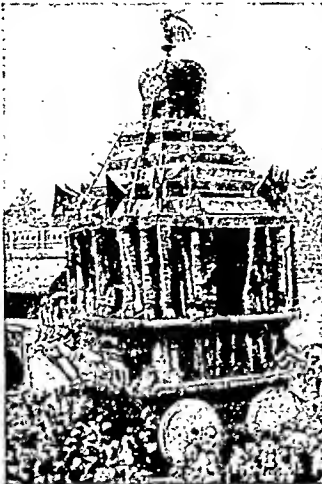


Julian the Apostate,
Roman emperor
From a bust

His full name was Flavius Claudius Julianus. Born in Constantinople in 331, he was the nephew of Constantine the Great. In

JULIAN (331-363). Roman emperor, 361-363, called the Apostate.

355 Constantine gave Julian the title of Caesar and placed him in command of Gaul and the west, where he gained victories over German tribes. He became emperor in 361. He proclaimed a policy of religious toleration, but discouraged Christianity by making it clear that the profession of paganism was the path to preferment. In 363 he set out on an expedition against the Persians. Penetrating too far into a waterless country, he was compelled to retreat, and in the last of a series of rearguard engagements received a mortal wound. Of his works a number of letters, orations, and satirical writings survive.



Juggernaut. Processional car, 50 ft. high, with solid wooden wheels 7 ft. in diameter and over a foot thick

JULIAN CALENDAR. Name given to the calendar as reformed by Julius Caesar. Revised in 1582 by Pope Gregory XIII, it has been superseded by the Gregorian calendar. See *Calendar*; *Gregory*.

JULIUS. Name of three popes. Julius I (d. 352) was pope 337-52, being elected to succeed Marcus. His festival is kept on Apr. 12.

Julius II (1443-1513) was pope 1503-13. Born near Savona, Dec. 5, 1443, his name was Giuliano della Rovere. Giuliano was made cardinal in 1471 and held numerous bishoprics during the next 30 years, the revenues of which he mainly devoted to building fortresses and palaces. Soldier and diplomat, he commanded the papal army in Umbria, 1474, and was legate to France, 1480. He secured the papacy, largely by bribery, in 1503. As Julius II he at once made war on Cesare Borgia, and joining the league of Cambrai, compelled Venice to restore papal territory in the Romagna. Aided by Venice and Spain, he drove the French out of Italy in 1512. Julius died Feb. 20, 1513. He was the patron of Raphael and Michelangelo.



Julius II,
Pope 1503-13
After Raphael



Julius III,
Pope 1550-55
After Putzone

Julius III (1487-1555) was pope 1550-55. He was papal legate in Italy, 1534, and cardinal, 1536, and presided at the opening of the council of Trent, 1545.

JUMNA. River in N. India, the most important tributary of the Ganges. The Jumna rises in the Jumnotri glacier in the Kumaon section of the Himalayas. Below its junction with the Tons, it forms the boundary between the Punjab and the United Provinces; it then turns S.E. and, receiving the Chambal, Sind, Betwa, and Ken, flows within the United Provinces to join the Ganges at Allahabad, after a course of 850 m. The Great Doab lies between the two rivers. Irrigation canals take off much of the water. Important towns on its banks are Delhi, Agra, and Muttra. See Allahabad.

JUMPING. Branch of athletics. One of the principal features at the Greek Olympic games, it still holds its place in modern athletic meetings, the high and long jump being the most prevalent forms. The record high jump (6 ft. 8 $\frac{1}{2}$ in.) was set up by H. M. Osborne at

Chicago in 1924, and the record long jump (26 ft. 2 $\frac{1}{2}$ in.) by D. H. Hubbard at Chicago in 1927. See *Athletics*.

JUMPING HARE OR SPRING HAAS (*Pedetes caffer*). Species of rodent found in S. Africa. It resembles a hare in size, colour,



Jumping Hare. Specimen of the South African rodent

etc., but has a long tail and kangaroo-like legs. Common in Cape Colony, where it lives among the hills, it is seldom found abroad in the daytime. It is able to take leaps of 20 ft. to 30 ft.

JUMPING MOUSE (*Zapus hudsonius*). Small rodent, related to the jerboa and found in N. America. It resembles a mouse

with very long hind legs, long tail, and remarkable leaping powers. It lives in the woods and feeds upon leaves, seeds, and bark. The rodent hibernates in holes. See *Jerboa*.



Jumping Mouse, native of the N. American woods

JUMPING SHREW (*Macroscelides*).

Family of shrews with long hind legs, rather resembling the jerboa. It belongs to the order of insectivora, but is said to eat vegetable food as well as insects. There are many species, all found in Africa, and some (elephant shrews) are remarkable for their long proboscis-like snouts. Living in burrows and rock crevices, they are nocturnal in habit.



Jumping Shrew. Specimen of the rock elephant shrew W. S. Berridge, F.Z.S.

JUNEAU. Capital of Alaska. On Gastineau channel, opposite Douglas Island, it is an important mining, fishing and lumbering centre, and is the chief supply base for the neighbouring mines. It has steamship connexion with Seattle, Sitka, and other ports. The city superseded Sitka as the capital in 1906. Pop. 3,058. See *Alaska*.

JUNG, CARL (b. 1875). Swiss scientist. Born at Basel, July 26, 1875, he became a doctor and practised for a time. Later he devoted himself to the study of psychoanalysis. He worked with Freud, subsequently differing from him, broke away and founded a new school of psychotherapy in Zürich. Jung differs from Freud mainly in that he attaches less importance to the factor of sex as a cause of neurotic disturbance; that he finds in the interpretation of dreams, or of some dreams, a meaning which should indicate to the dreamer the proper conduct to be followed; and he considers that the psychoanalyst should influence his patient in the direction of following higher ideals. See *Dream*; *Freud*; *Psychoanalysis*.

JUNGFRÄU (Ger. maiden). Mt. peak of Switzerland. On the boundary of the cantons of Berne and Valais, S.W. of the Mönch and Eiger, in the Bernese Oberland, it has an alt. of 13,670 ft. The peak was first ascended in 1811 by the brothers Meyer of Aarau. The first ascent from the Interlaken

sido was made by Sir G. Young and the Rev. H. B. George in 1865. The ascent can be made by rly. See Alps: Interlakea.



Jungfrau. View of this Alpine peak from Interlakea

jungles are common in equatorial regions, on coastal plains, and at the foot of mountain ranges, especially in India.

JUNGLE FOWL. Genus of wild birds, belonging to the game-bird tribe. They are found in India and the E. Indies. There are several species, some of them closely resembling bantams in appearance. They are the source from which the domestic fowl is derived.

JUNIPER (*Juniperus communis*). Evergreen shrub or small tree of the order Coniferae, a native of Europe, N. Africa, Asia, N. America, and the Arctic. Its form is bush-like, and its wood red, like that of the yew.

The leaves are awl-shaped with sharp points. The cones are round, berry-like, with fleshy blue-black scales coated with grey, waxy "bloom." In their first year they remain hard and green, ripening the second year. The whole plant has a strong odour of turpentine. Juniper "berries" provide the flavouring for gin. Oil distilled from the ripe fruit of *Juniperus communis* is used in medicine as a diuretic and to stimulate the gastric secretions.

JUNIUS, LETTERS OF. Series of letters on public affairs which appeared in *The Public Advertiser*, London, 1767-72. The identity of Junius is still disputed; he is generally supposed to have been Sir Philip Francis. Junius warned George III of the fate of Charles I, and attacked the government. He knew the inner working of war office and foreign office, was familiar with ovents at court, attended the House of Commons debates, and by turns defended and attacked the earl of Chatham. He successfully defied the law, and his printer, charged in connexion with the letter to George III, Dec. 19, 1769, was acquitted. The Letters were first collected and, dedicated to the nation, reissued in 1772. See Francis, Sir P.

JUNK (Port. Span. *juncos*). Chinese sailing ship. It has a high forecassle and stern, and square matting sails, and is also used by the

Japanese. Junk is a nautical term for old cordage and other obsolete gear; hence the word has passed into common use to designate any kind of discarded articles.

JUNKER (Ger. *jung*, young; *Herr*, gentleman). Term applied to members of the landowning class of Prussia and N. Germany generally. The name was also given to the great merchant princes of the free city of Danzig, where it survives in the exchange building, known as the Junkerhof.

JUNO. In Roman mythology, one of the major deities, identified with the Greek Hera.

She was the sister and wife of Jupiter and queen of heaven, and her power as such was greater than that of Hera, the wife of Zeus. Juno, Jupiter, and Minerva form a trinity which protects the Roman state. On March 1 married women celebrated in her honour the festival of the Matronalia. See Hera.



Jungle Fowl. Cock of the red species of this wild bird

Juno is the name of one of the asteroids, the third to be discovered. Recognized by Harding in 1804, it has a diameter of about 120 m., and takes just over four years to go round the sun. See Asteroids

JUNOT, ANDOCHE (1771-1813). French soldier. Born at Bussy-le-Grand, Oct. 23, 1771, he became secretary to Napoleon, with whom he went to Italy in 1796 and to Egypt in 1798. He served in Italy and as governor of Paris before being sent, in 1807, at the head of an army into Portugal. He gained some successes, but

was beaten at Vimiera, and, by the convention of Cintra, agreed perforce to withdraw from that country. His active military career came to an end when Napoleon, displeased with his conduct in the Russian expedition, made him governor of Illyria. His mind became unhinged, and he threw himself from a window, July 29, 1813. Junot was made duke of Abrantes for his services.

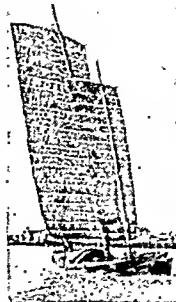
His wife, Laurette St. Martin Permon Junot (1784-1838), a famous wit, is best remembered by her Memoirs of Napoleon, the Revolution, Consulate, Empire, and Restoration, 1831-35.

JUPITER OR JUPITER (Diovis or Jovis pater, root *div*, to shine). In Roman mythology, an Italian divinity identified with the Greek Zeus. His name etymologically signifies "light-father," and he was especially associated with the



Jupiter. Chief of the Roman pantheon

From a bust in the Vatican



Junk. A Chinese sailing ship

Jupiter Latiaris he had a temple on the Alban mount. When the worship of Janus declined, Jupiter became the chief god of the Romans; his temple on the Capitoline Hill, the temple of Jupiter Optimus Maximus, was regarded as the heart of the Roman state. See Zeus

JUPITER. One of the major planets. It has an equatorial diameter of 89,790 m. and a polar diameter of 84,300 m. Its volume is almost 1,300 times that of the earth; its mass about 312 times; and its density approximately 1.27, a little more than that of water. The mean distance of Jupiter from the sun is 483,000,000 m., and the eccentricity of its elliptical orbit is such that at its greatest distance from the sun it is 46,600,000 m. farther away than its nearest approach. The planet revolves on its axis in about 9 hrs 55 m. The inclination of its orbit to the plane of the ecliptic is about 1° 19', and the inclination of its polar axis to the plane of its orbit is almost a right angle. Jupiter has nine satellites. See Astronomy.

JURA. Island of the Inner Hebrides, Argyllshire. With an area of 160 sq. m., it is one of the most rugged and bleak of the group. Its surface is hilly, the mts. known as the Paps of Jura having peaks of over 2,000 ft. The island is separated from the mainland by the sound of Jura, and from Islay by the Sound of Islay. Tarbert Loch almost cuts it in two. A ferry connects it with the mainland.

JURA. Range of mountains in Europe. They lie between the Rhine and Rhône valleys, forming the Franco-Swiss frontier in the depts. of Doubs, Ain, and Jura, and the cantons of Berne, Neuchâtel, Vaud, Geneva, Basel, and Soleure. The best known peaks are the Crêt de la Neige (5,654 ft.), the Chasseron (5,286 ft.), Mt. Tendre (5,515 ft.), and the Dôle (5,505 ft.). The principal passes are Pontarlier and the Col de la Faucille. The limestone mountains abound in stalactite caverns, while many of the rivers flow underground. Wolves are found in its pine forests.

Jura, a dept. of France, was part of the old province of Franche-Comté. Lons-le-Saulnier is the capital. Other towns are Dôle, Poligny, St. Claude, Arbois, and Salins. Its area is 1,951 sq. m. Pop 230,685.

JURASSIC SYSTEM. Division of strata between the Triassic and the Cretaceous, and so named from the Jura Mountains of Switzerland, largely composed of rocks of this period. The Jurassic system is divided into four main groups, the upper, middle, and lower Oolites, and the Lias. Jurassic rocks in Great Britain furnish the building stones of Bath and Portland, and the Purbeck marbles, while fuller's earth, certain brown coals, jet, etc., belong to the same period. The Jurassic period of time was prolific in giant tree ferns, cycads, and conifers. Marine fossils are common, and fossil reptile remains are so numerous as to have given the Jurassic age the alternative name of the reptile age. These include turtles, lizards, ichthyosauria, dinosauria, and pterosauria. The archæopteryx, the earliest known bird, belongs to this period. Over 4,000 species of Jurassic fossils are known. See Cretaceous System; Geology; Lias; Oolite.

JURAT. Literally, a person under oath (late Lat. *juratus*, sworn), and specifically, one sworn in on taking office. The term was applied to certain French municipal authorities, to the aldermen of the Cinque Ports, and is the title of the 12 elected members of the legislatures of Jersey and Guernsey, who form the royal court of justice under the bailiff as president.

JURISPRUDENCE (Lat. *jurisprudentia*, knowledge of law). The scientific theory of law, considered as a general notion. It deals with the underlying principles of law all the world over in their past, present and future development. It is not concerned with the

heavens, and with rain, thunder, lightning, and the growth of the fruits of the field. He then came to be regarded as the god of hospitality, truth, and justice in local and international relations. A further development of his functions was that that of a war-god and giver of victory. In early times, as

law of a particular country at a particular time, called municipal law, or with legal rules which one country has in common with another, called comparative law: or with the nature of the state or political philosophy.

Jurisprudence assumes the state as a fact, as being the origin of all law, positive law, as it is called by the Austinian school, by way of distinguishing it from divine law, moral law, and international law. Positive law falls into two main divisions, enacted and unenacted law. Enacted law consists of acts or decrees of a sovereign person or legislative body, and unenacted law consists of a body of customs which are observed as law.

The essential test and efficacy of positive law lies in what jurists know as the sanction of law, that is, in the painful results which will come upon the law-breaker. In an efficiently administered state they may be expected to follow as a swift and normal consequence of legal wrongdoing. Sanction is thus the inevitable concomitant of law. Law is the outcome of the organized will of the state and the method by which expression is given to the collective view of right and wrong. See Law.

JURY. Body of persons sworn to return a true verdict in accordance with the evidence laid before them. In England juries may be divided into three classes—grand jury, which is the jury that examines the charges against prisoners at assizes and quarter sessions, petty or common jury, and coroner's jury.

In English law a common jury is a body of twelve men or women who are called upon to attend the hearing of a trial and to give a verdict after hearing the evidence. Jurors are drawn from the residents of each county or borough. The names are taken from a roll of the persons qualified to be jurors drawn up by the rating authorities.

Lunatics, imbeciles, ex-convicts, persons suffering from a permanent infirmity such as blindness, and aliens who have not been domiciled in England or Wales for at least ten years are disqualified from serving on juries: and a great number of persons, such as peers, clergymen, and lawyers, are exempted. No remuneration for common jurors in the High Court is provided by statute. Jurors in county courts are allowed a shilling for each case.

Coroners' juries may consist of any number not less than 12 nor more than 23. They need not be unanimous, but at least twelve must agree on a finding. Since 1927 coroners can hold inquests without a jury.

Juries in Scotland and Ireland are similar to those in England, though special statutes govern them. The jury in Scotland has the right to bring in a special verdict, Not Proven, a verdict not allowed under English law. Trial by jury, following similar lines to the English procedure, exists in most British colonies, the United States, and many European countries.

JUSTICE OF THE PEACE. Unpaid magistrate. Qualifications for the office are good reputation and residence within 7 m. of the county or borough for which they are appointed. In 1919 women became eligible for appointment as justices of the peace equally with men. In the counties the lord chancellor appoints justices on the nomination of the lord-lieutenant; in boroughs on the recommendation of any person whom he approves.

Justices of the peace form the courts of quarter sessions in the counties, but not in the towns which, however, they may attend. The courts of summary jurisdiction, which try minor offences both in town and county, are formed by two justices sitting together. Their duties also include the signing of search and other warrants. See Magistrate.

JUSTICIAR. Name given in medieval times in England to the chief officer of state, the equivalent of the modern prime minister. A justiciar first appeared in the reign of

William the Conqueror, and the office lasted until that of Henry III, or a little later, when the chancellor took his place. There was also a justiciar in Scotland in early times.

The high court of justiciary is the name for the supreme criminal court in Scotland. It consists of the lord justice general, the lord justice clerk and five of the lords of session.

JUSTIN. Name of the two East Roman or Byzantine emperors. Justin I, probably a Goth, made his way to the command of the imperial guards, and was proclaimed emperor by the soldiery on the death of Anastasius. He reigned from 518 to 527.

Justin II was a nephew of Justinian I, whom he succeeded at an advanced age in 565. In 574 he became subject to fits of insanity and nominated Tiberius, commander of the imperial guards, as joint ruler. He died in 578.

JUSTINIAN I (483-565). Roman emperor. Born in Illyricum, May 11, 483, of Thracian or possibly Slavonic descent, he succeeded his uncle Justin in 527. His generals Belisarius and Narses rolled back the Persians, recovered the mastery of the African provinces by the destruction of the Vandal kingdom, and momentarily restored the imperial dominion in Italy by the overthrow and dispersion of the Ostrogoths.

The permanent fame of Justinian, however, rests upon his colossal achievement in the great codification of Roman law which became the basis of all the European systems except in England. This was accomplished in three great works: the Code, which dealt with legislative enactments; the Digest or Appendix, which dealt with what may be called case-made law (interpretations and precedents laid down by lawyers which had acquired a binding force); and the Institutes, which were in essence an exposition of and a commentary on the principle and practice of law. Justinian died Nov. 14, 565. See Belisarius.

Justinian II, emperor 685-95 and 705-11, was the last of the Heraclian dynasty.

JUSTIN MARTYR (c. 100-165). Christian apologist. Born about A.D. 100 in Samaria, of Greek parents, as a youth he studied the Stoic and Platonic philosophies. He became a Christian through the study of the O.T., but continued to lecture in philosophy at Rome, Ephesus, and elsewhere. He was martyred about 165. In his famous Apologies for the Christians he defended Christianity against the charges of heathen writers.

JUTE. Fibre obtained from two varieties of the Corchorus plant grown in India, chiefly in Bengal and Assam. The plants have a stem of 5 ft. to 10 ft. and the fibre occurs as bast below the bark. Strips 4 ft. to 7 ft. in length are thus obtained, and are manufactured into goods, principally in the Calcutta and Dundee jute mills.

The fibre is more woody than linen or hemp and lends itself especially to the manufacture of packing canvas. The higher grades make bright web for cheap tapestries, cart covers, stair carpets, carpet backings and stiff linings. Lower grades are used to make fabrics which are the base

of floorcloths and linoleums, school bags, scenic canvas, sandbags, and upholstery backings and linings.

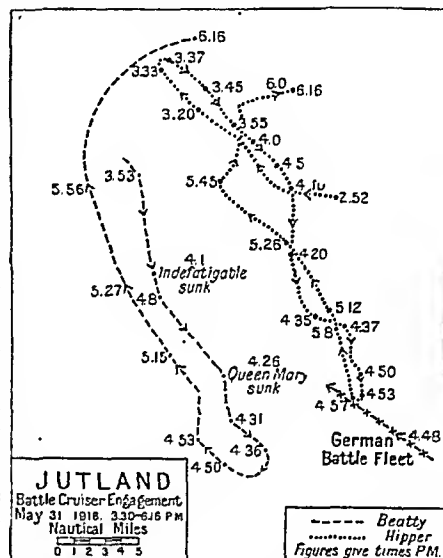
JUTES. Name of a Teutonic tribe. They invaded England in the 5th century, traditionally at the invitation of the Britons. They are mentioned by Bede, and the theory is that they settled in Kent and the Isle of Wight. Jutish burial grounds have been discovered at Finglesham, near Deal, and at Ospringe, both in Kent. The finds include a beaker necklace, pottery, etc. See Britain.

JUTLAND (Dan. Jylland). Mainland prov. of Denmark. It is bounded N. by the Skagerrak, S. by Slesvig, W. by the North Sea, and E. by the Kattegat. The coast is much broken by fiords. The area is 9,750 sq. m.

JUTLAND, BATTLE OF. Naval battle fought between the British and German fleets, May 31-June 1, 1916. The British force consisted of Sir D. Beatty's battle-cruiser squadron, Sir J. Jellicoe's battleship force, eight old armoured cruisers, 26 light cruisers and 78 destroyers. The German fleet consisted of 16 Dreadnoughts and 6 pre-Dreadnought



Justinian I, Roman emperor
From the 6th cent. mosaic in the
basilica of S. Vitale, Ravenna



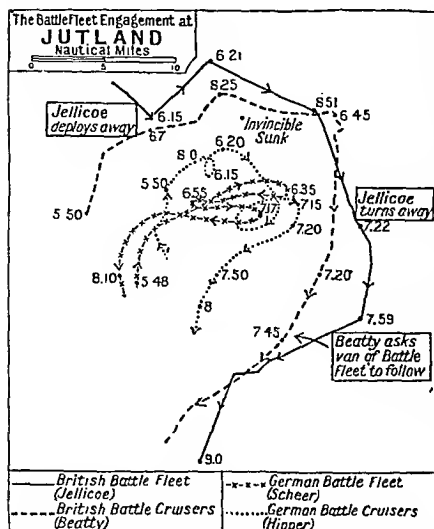
battleships under Scheer, and a squadron of 5 battle-cruisers under Hipper. Eleven light cruisers and 72 destroyers accompanied the German fleet. In displacement the British had 845,100 tons of heavy armoured ships against 562,840 tons of the Germans.

Early on May 31 the German fleet left its bases and steamed towards the Skagerrak. There

was a wide gap between Jellicoe's battleships and Beatty's battle-cruisers when contact was gained with the Germans by light craft, at 2.20 p.m. The British battle-cruisers moved at their highest speed to get in between the Germans and their bases and thus compel them to fight. The first phase of the battle was the engagement between Beatty with his six battle-cruisers and the five German battle-cruisers, which were steaming S.S.E. Fire was opened by both sides at 3.47 p.m. at a range of 18,500 yards. The Germans hit Tiger's turrets; Indefatigable was blown up through the igniting of her turret ammunition, and the same fate overtook Queen Mary, and of the 2,000 men who manned these two ships only 18 were saved. Lion was badly hit, and had a narrow escape.



Jute. 1. Complete plant. 2. Detail of foliage. 3. Flower. 4. Seed-pod



The next phase was when Beatty, having sighted the German battle fleet, turned N. to draw the enemy to Jellicoe's battle fleet. The latter began his deployment at 6.15 p.m., forming a single line, heading away from the Germans on a course E.N.E. As this was taking place Sir R. Arbuthnot, with the 1st cruiser squadron, drew close to the German battle fleet, but his flagship, Defence, was hit and blew up, and at the same time Hood's flagship Invincible was blown up by salvoes from Lützow and Derflinger.

The two battle fleets were next engaged, but only a few of the British ships could fire effectively at the enemy at a range of about 12,000 yards. In this encounter Lützow and Derfflinger were badly damaged, and the British battleship Marlborough was hit. As signs of a German torpedo attack were seen the British battle fleet turned away. Beatty continued to press the enemy, who once more headed W, and this action broke off the engagements between the battle fleets. The battle was practically over except for a series of night torpedo actions.

In the night the old German battleship Pommern was sunk by a British destroyer and the British armoured cruiser Black Prince was sunk with all her crew. The German fleet returned to its bases in daylight. See Beatty; Chester; Jellicoe; consult also The Grand Fleet, Viscount Jellicoe, 1919; Battle of Jutland (official documents), 1920.

The British had 343 officers and 6,104 men killed and 51 officers and 513 men wounded, The German losses were 172 officers and 2,414 men killed and 490 of all ranks wounded.

TABLE SHOWING COMPARISON OF FORCES				
Dreadnought Battleships	.. ..	28	16
Battle-Cruisers	.. ..	9	5
Pre-Dreadnought Battleships	.. ..	0	6
Armoured Cruisers	.. ..	8	0
Light Cruisers	.. ..	26	11
Destroyers	.. ..	78	72
Comparison of—A, guns mounted; B, firing on broadside; C, weight of broadside (all weapons of 11 in. and over in battle fleets and battle-cruisers) In annour the Germans had a distinct advantage.				
	A Number of ships with that gun	B Number of that gun firing on broadside	C Total weight of broadside lb.	
BRITISH:				
15 in.	6	48	82,560	
14 in.	1	100	140,000	
13½ in.	15	142	177,550	
12 in.	35	332	112,500	
Totals	57	332	386,510	
GERMAN:				
12 in.	14	128	110,080	
11 in.	13	81	55,440	
Totals	27	212	165,520	
Displacement of the two Fleets (battleships and battle-cruisers):				
	Dread- noughts	Pre-Dread- noughts	Battle- cruisers	Total
British	648,200	—	196,900	845,100
German	363,360	79,200	150,280	592,840

JUVENAL (c. A.D. 60-140). Roman satirist, whose full name was Decimus Junius Juvenalis. His long life extended from the reign of the emperor Nero to that of Antoninus Pius, but details are obscure. The manners and morals of the age in which he lived were regarded by Juvenal with loathing and indignation, which find expression in his sixteen satires.

The best known, in spite of its revolting indecency, is the sixth, on Women. Another fine piece of work is the third, on Rome

JUVENILE OFFENDER. Person apparently under the age of 16 years who has been apprehended. In Great Britain juveniles detained in custody are to be kept from associating with adults under detention. If possible, juveniles under remand are to be sent to special places of detention, not to gaols.

Special courts for juveniles, from which the public are excluded, have been established. No

BRITISH SHIPS ENGAGED AT JUTLAND

FIRST BATTLE SQUADRON (Burgoyne)

SIXTH DIVISION FIFTH DIVISION

Marlborough	Colossus
Revenge	Collingwood
Hercules	Neptune
Agincourt	St. Vincent

FOURTH BATTLE SQUADRON (Sturdee)

FOURTH DIVISION	THIRD DIVISION
Benbow	Iron Duke
Bellerophon	Royal Oak
Temeraire	Superb
Vanguard	Canada

SECONO BATTLE SQUADRON (Jettam)

SECOND DIVISION	FIRST DIVISION
Orion	King George V
Monarch	Ajax
Conqueror	Centurion
Thunderer	Erin

FIFTH BATTLE SQUADRON (Evan-Thomas)

Barham	Malaya
Valiant	Warspite
FIRST BATTLE-CRUISER SQUADRON (Brock)	
Lion	Queen Mary

USS Royal Tiger
BATTLE CRUISE SHIP (Baker)

THIRD BATTLE-CRUISER SQUADRON (Hood)
Invincible Inflexible Indomitable

INDEXABLE

FIRST CRUISER SQUADRON

Defence	Duke of Edinburgh
Warrior	Black Prince
SECOND CRUISER SQUADRON	
Minotaur	Cochrane

Hampshire

FIRST LIGHT CRUISER SQUADRON	
Galatea	Cordelia
Inconstant	Phaeton
SECOND LIGHT CRUISER SQUADRON	

Hampton
Birmingham
Dublin

THIRD LIGHT CRUISER SQUADRON
Falmouth Gloucester
Birkenhead Yarmouth
Chester
FOURTH LIGHT CRUISER SQUADRON

FOURTH LIGHT CRUISER SQUADRON
Comus

Constance	Royalist	Caroline
OTHER LIGHT CRUISERS		
Boadicea		Bellona
Blanche		Active

Canterbury

child or young person can be sent to p
servitude, and no child under 14 can
committed to prison in default of paying a

or costs. Juvenile offenders may be specially dealt with by being placed under the probation officer for a period; being bound over, or


mitted to the care of a relative or other person; committed to an industrial or a reformatory school; whipping; or sentence

JUXON, WILLIAM (1582-1663). Eng. prelate. Born at Chichester, he was educated at S. John's College, Oxford, of which he became president in 1621. He was made bishop of London in 1633, and lord high treasurer in 1635, a post which he held until 1641. Chained at his execution entrusted to Juxon his statements and personal desires "with famous injunction, "Remember." On Restoration he became archbishop of Canterbury. He died June 4 1663.

K. Eleventh letter of the English and Latin alphabets. In the latter, its sound being represented by C, it was regarded as superfluous, and only retained in a few words. In English it has the value of hard c, as in keel, kitchen, and before n it is mute, as in knock. It is a hard or voiceless throat-sound, the soft or voiced equivalent of which is g. See Alphabet.

KA'ABA (Arabio chamber). A shrine at the Great Mosque of Mecca. The building, which stands in the centre of the court, is about

50 ft. high, about 40 ft. long, and 30 ft. wide. Its peculiar sanctity is due to the Black Stone, which is built into the N.E. corner. Burton, one of the few Englishmen who have seen it, ascribed the stone to meteoric origin.



Ka'aba. Pilgrims gathered around the Moslem shrine in the centre of the court of the Great Mosque at Mecca

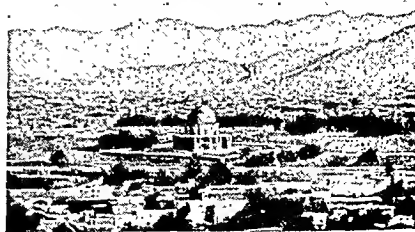
Oval in shape, and from 6 ins. to 7 ins. in diameter, it is kissed by every Mussulman making the pilgrimage. The present Ka'aba, built in 1620, reproduces the primitive idol temple venerated throughout Arabia in Mahomet's day. He destroyed the idols, but recognized the value of the fetish stone and the pilgrimages as a politically unifying force, and declared that the angel Gabriel had given the stone to Abraham, who had built the Ka'aba. The Ka'aba is covered with a cloth of black brocade, replaced every year. See Holy Carnet: Mecca.

KABINDA OR CABINDA. Portuguese enclave on the W. coast of Africa, part of Angola. N. of the mouth of the Congo, it covers about 3,000 sq. m. The capital, Kabinda, with a good harbour at the mouth of the Bele river, was formerly a slave mart. Pop. 12,000.

KABUL or CABUL. River of Afghanistan. Rising in the Hindu Kush, near the source of the Helmund, it flows through Afghanistan and falls into the Indus at Attock.

KABUL or **CABUL**. Capital of Afghanistan. On the Kabul river, about 150 m. N.W. of Peshawar, it is placed on a high plateau at the foot of hills. The Bala Hisar fort is now dismantled. The junction of several great caravan roads, it has a considerable trade in carpets, silk, and cotton goods. There is a wireless station.

For a time capital of the Mogul empire, Kabul was made by Timur the capital of Afghanistan in 1774. It was captured by the British in 1839, but lost by them two years later. The scene of the massacre of British troops in 1842, it was retaken by General Pollock in the same year. The murder of Cavagnari, the British political resident, and his escort, in 1879, led to the reoccupation of the city for a year. In 1928 there was a revolt, the city was besieged, and British and other women were rescued by aeroplanes. Pop. about 80,000. See Afghanistan.



Kabul, with the domed tomb of Sultan Babar

KAFFIR OR **KAFIR** (Arab. infidel). Name applied in popular usage to the non-Moslem Bantu-speaking negroid peoples of S. Africa. Thus defined, it includes Bechuana, Basuto, and even Hereros and Ovambo, in all about 4,500,000. It is preferably limited to certain aggressive tribal confederations, named after actual or mythical chiefs, who led the migratory movement from equatorial Africa into the coastlands E. of the Drakensberg shortly before the European discovery.

Kaffir bread is the pith obtained from the young shoots of the bread-tree, which grows in S. Africa. It is eaten by the natives.

KAFFIR WARS. There were several wars between the British and the Kaffirs in the 19th century; indeed one authority enumerates nine, excluding minor skirmishes. All were due to the desire of both parties to possess the lands which lay between them. The first war broke out in 1811, and the second was waged in 1818-19. In both Kaffir inroads were beaten back. In 1834 there was a further inroad, but after a struggle of nearly a year's duration the Kaffirs were again driven back and a treaty of peace made. In 1846-48 there was another prolonged struggle, but more serious was the one that broke out in 1850 and lasted until 1853. The last Kaffir war took place in 1877.

KAFFRARIA. Dist. of Cape of Good Hope prov., S. Africa. Once applied to the country inhabited by the Kaffirs, the name is now restricted to the coastal districts between the Great Kei river and the frontiers of Natal. After the Kaffir War of 1846-48 it was formed into a separate province, but in 1865 was incorporated with Cape Colony.

KAGU (*Rhinocetus jubatus*). Bird found in New Caledonia, related to the cranes. The size of the common fowl and grey in colour, it has a long pendent crest of feathers at the back of the head. It is rare, and appears to feed at night on snails, worms, and insects.

KAHUN. Ancient town in the Fayum, Upper Egypt. Excavated by Petrie in 1839, it comprised the dwellings of the workmen who constructed the XIIth dynasty Illahun pyramid for Senusert II. See Egypt.

KAILYARD SCHOOL. Name applied by J. H. Millar to the writers of novels of humble Scottish life notable for their sentimentality and over-use of dialect. In this school is generally included J. M. Barrie's *Auld Licht Idylls*, 1888; and, in particular, the novels of John Watson (Ian Maclaren) and S. R. Crockett. The name appears to be derived from the song *There grows a bonnie brier bush in our kailyard*. See Barrie, J. M.; Crockett, S. R.

KAINITE. Mineral consisting of potassium chloride and magnesium sulphate. It is found at Stassfurt in Germany and in the salt mines of Kalusz in the eastern Carpathians. It is one of the sources of potassium, and is widely used as a fertiliser.

KAISAR-I-HIND MEDAL. Medal instituted in 1900, awarded for public services in the Indian empire. Recipients may be of any race, or of either sex, and are divided into first and second classes, receiving gold and silver medals respectively.

KAISARIYEH OR **KAYSEEL.** Coast village of Palestine, the ancient Caesarea. It is 32 m. N. of Jaffa and close to the Haifa Rly. The ancient city was built by Herod the Great. A great breakwater, now in ruins, made a splendid harbour. S. Paul spent two years' imprisonment here. The city became the military headquarters of Palestine, and here Vespasian was proclaimed emperor in A.D. 69. After the fall of Jerusalem it became the capital of Palestine, until destroyed by the Egyptian Bibars in 1265.

Kaisariyeh, in Turkey, the ancient Caesarea, 140 m. due N. of Adana, on the Kizil Irmak

(Halys) river, is a noted road centre, at the foot of Mt. Argaeus (13,300 ft.). Rug and carpet weaving are industries. Pop. 50,000.

KAISER. German word for emperor. It is a variant of Caesar, and was used for Charlemagne and the other emperors of the Holy Roman Empire. With the dissolution of the Empire in 1806, the title was transferred to the emperor of Austria, who remained a kaiser until 1918. In 1871 the king of Prussia took the title of *Deutscher Kaiser*, and from then until 1918 the three successive German emperors were in turn known popularly as the kaiser. The feminine is *kaiserin*.

KAKA (*Nestor meridionalis*). Olive-brown parrot of New Zealand. Closely related to the kea (q.v.), it is about the size of a crow. It has a light grey crown, the cheeks and collar are purple bronze, the breast and tail brown, and the intervening underparts are deep crimson varying to orange or yellow. The upper half of the beak is very long and hooked, and is used for stripping bark in order to obtain wood-feeding grubs; it eats fruit and flowers also.

KAKAPO, TARAPU OR **OWL PARROT** (*Strigops habroptilus*). Bird of the parrot family, a native of alpine districts and open forests in New Zealand. It has soft plumage, green on the upper parts, speckled with yellow and barred with brown; brown cheeks and yellow underparts. A disk of feathers around the eye gives it an owl-like appearance. The wings are short and unfitted for proper flight. It spends the day in holes in or near the ground, and at night searches on foot, in companies, for seeds, berries, and lizards.

KALAHARI. Desert on the W. of South Africa, mainly in Bechuanaland. It extends N. for 600 m. from the Orange river. Generally about 3,000 ft. high, bordered by a waterless country, it contains large tracts suitable for cattle, and, under a system of dry-farming, for cereals. The country is filled with big game, and supports a scattered and nomad population. There are numerous salt pans, one at Makarikari covering over 2,000 sq. m.

KALAT. State of Baluchistan. It extends from the Arabian Sea N.E. almost to the Bolan Pass; W. and E. it is bounded by Persia and India; in the S.E. is the semi-independent state of Las Bela. Sarawan in the N. is highland; wheat, tobacco, and fruit are obtained in the valleys. Jhalawan in the S.E. is an arid mountainous area. Kacchi in the N.E. is a vast alluvial plain, noted for its breeds of horses and bullocks. Makran in the S.W. is an inhospitable desert yielding only dates. Kharan in the W. is largely a sandy waste. The ruler bears the title of khan, and has a salute of 19 guns. Kalat town is the capital. Area, 73,278 sq. m.; pop., 328,281.

Kale OR **KAIL.** One of the cultivated forms (*Acephala*) of the wild cabbage (*Brassica oleracea*). See Borecole.

KALEDOSCOPE. Optical toy. Two mirrors, sometimes three, usually placed at an angle of 60°, extend the length of a tube, at one end of which are two plates of glass enclosing fragments of coloured glass. The observer looks through a small eye piece at the other end of the tube, which, as it is turned in the hand, scatters the pieces of coloured glass into arrangements that, being symmetrically reflected in the mirrors, give rise to an endless variety of regular patterns.

KALGOORLIE. Town of W. Australia, 375 m. by rly, from Perth. It is the centre of Australia's richest gold mining area, and is the W. terminus of the broad gauge section of the Trans-Australian Rly., as well as the entrepot for the goldfields farther E. and N. Kalgoorlie, founded in 1893, and its sister town, Boulder, 4 m. distant, are well equipped modern towns. Pop. 5,200.

KALMUK OR **KALMUCK.** W. branch of the Mongol stock. Migrations from central Asia to Europe, begun in 1616, are still represented by over 172,000 inhabiting the southern Astrakhan steppe. They have partly abandoned nomadism, but maintain their ancestral lamaism, with over 60 monasteries. Six central Asian tribes now occupy a northern region in Sinkiang, N.W. Mongolia, and Kulja, besides a southern region in Alaskan, Kokonor, and N. Tibet. There are also some 15,000 in the Caucasus. See Mongol.



Kalmuk. Mongol peasants from Russian Central Asia

KAMAKURA. Historic site in Japan, 12 m. S.W. of Yokohama. During the 13th and 14th centuries the city was the capital of the Shogunate. The existing town on the site has a pop. of 10,000, and its numerous shrines are visited annually by thousands of tourists. The chief shrine, that of Hachiman, is dedicated to the emperor Ojin-Tenno, popularly called the God of War. The colossal bronze image of Buddha (see illus. p. 318), Daihutsu, is 50 ft. high, and 36 ft. from knee to knee; windows in the shoulders overlook the surrounding scenery.

KAMCHATKA. Peninsula in N.E. Asia, between the sea of Okhotsk and Bering sea. It forms part of the Far Eastern area of the Union of Socialist Soviet Republics. There are numerous extinct and active volcanoes; earthquakes are frequent. There are important fisheries, and trade in furs. The natives are chiefly engaged in hunting and fishing. Kamchatka has belonged to Russia since 1766.

Kamerun. Former German protectorate in W. Africa, more familiar under the name of Cameroons (q.v.).

KAMES, HENRY HOME, LORD (1696-1782). Scottish lawyer. Born at Kames, Berwickshire, he became an advocate and in 1752 he was made a judge of the court of session, taking the title of Lord Kames. He made a great reputation as a philosopher, especially by his *Essays on Morality, Elements of Criticism* and other works. Kames died Dec. 27, 1782.

KAMLOOPS. City of British Columbia, Canada. It is 250 m. from Vancouver, at the confluence of the N. and S. Thompson rivers. It is an important junction on the C.P.R. and C.N.R., and a trade centre for a mining and ranching dist. Pop. 4,501.

KANAKA. Aboriginal people of Polynesian stock living in the Hawaiian Islands. They furnished crews to early South Sea whalers, who introduced the native name. French usage extended it to other Pacific islanders, including the dark Melanesians of New Caledonia. Hence the name came to denote the coloured labourers, mostly Melanesians from the Solomons and New Hebrides, who were recruited for the Queensland sugar plantations. Brought under regulation in 1880, they were repatriated in 1906, except some who were permanently settled. These, all classed as Polynesians, number about 2,300. Pron. kannaka; in Australia, incorrectly, kanakka.

KANDAHAR. City of Afghanistan. It lies nearly 300 m. S.W. of Kabul, on a level plain between the Argand and Tarnak rivers.

Built in the form of an irregular parallelogram, it is traversed by four main streets, and surrounded by a ditch and a mud wall. There are four main gates and two minor ones. The gates are defended by six double bastions, and the angles by four circular towers. The citadel is N. of the city, a dominating feature of which is the tomb of Ahmed Shah Durani. Kandabar is strategically important as the key to India, being the focus of the various routes converging from the W. frontier of India towards Herat and Persia. In the Afghan Wars it was occupied by the British in 1839. Lord Roberts occupied it in 1879-80. Pop. 50,000. See Afghanistan.

KANDERSTEG. Tourist centre of Switzerland. It is in the Bernese Oberland at the foot of the Gemmi Pass and is itself 3,800 ft. high. Its name comes from the river Kander, a tributary of the Aar.

KANDY. Town of Ceylon. It lies 1,660 ft. above sea level, on a mt. lake, 75 m. by rly. N.E. of Colombo. Once capital of the native kingdom of Kandy, it was annexed by Britain in 1815, and is notable for its royal tombs and temples, including that containing a reputed tooth of Buddha. There are botanical gardens at Peradeniya, 3 m. distant. Pop. 32,562.

KANE, ELISHA KENT (1820-57). American explorer. Born at Philadelphia, Feb. 3, 1820, he became assistant surgeon in the U.S. navy in 1843. In 1850 he accompanied Grinnell's expedition to rescue Sir John Franklin. In 1853 he commanded the *Advance*, sailed to 78° 43' N. in Smith Sound, discovered the Humboldt glacier, and in 1854 reached Cape Constitution, 80° 35' N. Abandoning the *Advance* in 1855, the party made their way back in small boats. Kane died at Havana, Feb. 16, 1857.

KANGAROO (Macropus). Genus of marsupial or pouched mammals found only in Australasia and New Guinea. They are characterised by very long hind legs, and powerful tails on which they partly rest the body. The tapering head is small and the ears are prominent and erect. The fur may be red, grey, or blackish. There are many species, the largest measuring 5 ft. in length of body with a tail over 4 ft. long. The smallest is about as large as a rabbit.

They are found always in companies, and feed upon grass and herbage, and roots which they dig up. When not disturbed they move along like a rabbit, but if alarmed they make off at great speed, covering as much as 10 yds. at a bound. The young kangaroo is born in a small and rudimentary condition, and is placed by the mother in her pouch, where it remains until fully developed, when it begins to emerge and crop the grass. Only a single young one is produced at birth.

KANGAROO GRASS (*Anthistiria vulgaris*). Perennial grass of the order Gramineae, native of Australia, where it is the prevailing herbage in many of the tracts known as rich grass country. Kangaroo grass is of great value to the cattle-raising industry, both in Australia and S. Africa.

KANSAS. Central state of the U.S.A. Mainly an undulating prairie, it covers 82,158 sq. m. The principal navigable river is the Missouri, forming part of the W. frontier, others being the Arkansas and Kansas. Although suffering from a scarcity of rain in the W., Kansas is pre-eminently an agricultural state, and produces maize, wheat, hay, and fruit. Coal, salt, zinc, lead, limestone, petroleum, and natural gas are worked, and

Portland cement is produced. Glass is manufactured, and slaughtering and meat-packing are important industries. Topeka is the capital, but Kansas City is larger. Pop. 1,835,000.

KANSAS CITY. City of Kansas, U.S.A. At the junction of the Kansas and Missouri rivers, opposite Kansas City in Missouri, it is served by the Union Pacific and other rlys, and is the seat of Kansas City University. Next to Chicago it is the leading live-stock centre in the U.S.A. It has slaughtering and meat-packing establishments, large grain elevators, flour mills, rly. and other machine shops, and soap manufactories. Formed in 1886 by the union of the old city with Wyandotte and Armourdale, Kansas City was incorporated in 1858. Pop. 116,053.

KANSAS CITY. City and port of entry of Missouri, U.S.A. On the right bank of the Missouri river, opposite Kansas City in Kansas, it is an important rly. junction served by the Union Pacific and other rlys. Across the Missouri the railways are carried by three great bridges, and within the city the Kansas City Terminal Rly. connects up the various systems. Meat-packing and trade in grain and live-stock are important interests. Kansas City is also a distributing centre for hay, mules, coal, lumber, lime, and cement, and has agricultural implements, clothing, and confectionery manufactories, flour mills, foundries, and machine shops. Swopo Park covers about 1,350 acres. Pop. 367,481.

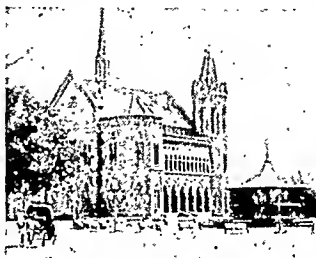
KANT, IMMANUEL (1724-1804). German philosopher. Born at Königsberg, April 22, 1724, the son of a saddler of Scottish descent, he was professor of logic and metaphysics at the university from 1770-97, when old age compelled him to discontinue his lectures. His long life, regulated by clockwork precision, was absolutely uneventful. He never married, and died at Königsberg, Feb. 12, 1804.

Kant's great service to philosophy was his endeavour to find a bond of union between realism (materialism) and idealism, each of which had claimed to be the only true system. The three great works in which he investigates the nature, limits, and extent of human knowledge are *Critique of Pure Reason* 1781; *Critique of Practical Reason*, 1788; *Critique of Judgement*, 1790. The last-mentioned deals with the sublime and the beautiful (aesthetic judgement) and the order of nature (teleological judgement). The *Prolegomena to every future Metaphysic*, 1783, a shorter and simpler work, embodies the main ideas of his system. Consult Kant's *Critical Philosophy*, J. P. Ma Haffy and J. H. Bernard, 1915.

KAOLIN or CHINA CLAY. Soft clay used in the manufacture of white earthenware, porcelain, and tiles. It gets its names from deposits at Kaoling, China. See China Clay.

KAPOK (*Eriodendron anfractuosum*). Tall evergreen tree of the natural order Malvaceae, a native of the W. Indies. The yellow flowers are coated externally with silky wool, and the woody capsules, like those of the cotton plant, are filled with silky hairs attached to

the numerous seeds. These filaments cannot be spun into threads, as are cotton fibres, but are used for stuffing cushions and pillows. Owing to the large quantity of air which the fibres hold in their canals kapok has great buoyancy, and is therefore employed for filling lifebelts. The pressed seeds yield kapok oil.



Karachi, Bombay Presidency. Frere municipal hall

KARACHI. Seaport of India. It lies at the W. end of the Indus delta, on the left bank of the distributary which enters Karachi Bay, an arm of the Arabian Sea, sheltered behind a long, narrow sand spit. Since its foundation in 1843 its trade has increased enormously. Its chief importance is due to the increase of wheat growing under the development of irrigation schemes, and cotton is collected from all parts of Sind for export, as well as for local manufacture. It has also become an important air port, being the terminus of the Indian air mail. Pop. 216,883.

KARAKORAM. Mountain range of Asia. Containing some of the highest summits in the world, the range extends S.E. for over 400 m. from the Pamirs to the Himalayas across the N.E. portion of Kashmir, and connects the Himalayas with the Hindu Kush. The highest point is Mount Godwin Austen or Peak K2, 28,250 ft. In 1929 an Italian expedition explored the region and made some valuable discoveries.

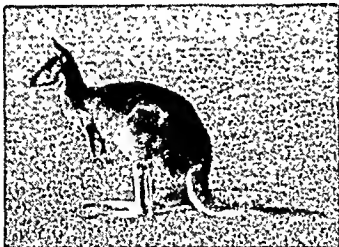
KARA SEA. Name of part of the Arctic Ocean. Between Novaya Zemlya and the island of Vaigatch on the N.W., and the peninsula of Yamal to the S.E., it is 440 m. long and 280 m. broad, and is generally navigable from mid-August to mid-October. There is a radio station in Novaya Zemlya. Its S.E. arm is called the Kara Gulf.

KARELIA. Autonomous republic of the Union of Socialist Soviet Republics. It lies E. of Finland, between the White Sea and Lake Ladoga. The capital is Petrosavodsk. Area, about 52,000 sq. m. Pop. 267,467.

KARLSBAD or CARLSBAD. Town and health resort of Czechoslovakia, in Bohemia, formerly in Austria. It lies at a height of more than 1,100 ft., 70 m. W.N.W. of Prague, in picturesque surroundings. It has been famous for its warm alkaline springs from at least the 14th century. The official name is now Karlovy Vary. Pop. 20,000.

The Karlsbad Decrees were resolutions passed by representatives of the German states at a congress held at Karlsbad in Aug., 1819. It was summoned by Metternich, and a principal object was to repress the liberal agitation then proceeding in Germany. The resolutions were adopted by the Diet, and probably contributed to restrain in Germany the revolutionary movement that shook France in 1830.

KARLSRUHE or CARLSRUHE. Town of Germany, capital of Baden. It lies 6 m. E. of the Rhine, and 39 m. W.N.W. of Stuttgart. The town of to-day is largely of modern growth, its industrial rise dating from 1871. The principal manufactures are locomotives, rolling-stock, furniture, and plated articles.



Kangaroo. Great Red Kangaroo, largest of the pouched mammals of Australia. Gambier Bolton, F.Z.S.



Immanuel Kant, German philosopher



Kapok. Foliage, flowers, seed and seed-pod

Notable buildings include the palace and the picture gallery. The museum contains valuable collections of antiquities, and a fine library of nearly 200,000 volumes. Pop 145,694.

The Germans had a light cruiser of this name. After serving as a commerce raider in the Atlantic in Oct., 1914, she was sunk at sea, in the beginning of Nov., as the result of an internal explosion.

KARNAK. Village on the right bank of the Nile. With Luxor it comprises the ancient city of Thebes, Upper Egypt. The Amen temple, begun in the XIIth dynasty by Senusret I, was enlarged during the XVIIIth dynasty, and obelisks of Thothmes I and Hatshepsut still stand. In the XIXth dynasty was added a hypostyle hall, with a flat stone roof borne by 12 central columns and 122 aisle columns. These sandstone shafts and the walls were sculptured with inscriptions and scenic reliefs. Outside the N. and S. walls occur historical scenes commemorating the Hittite and Palestine campaigns of the famous Egyptian rulers Seti I and Rameses II respectively. In front of this hall a colonnaded court was built by Shishak I, and a final pylon added in Ptolemaic times. See Egypt.



Karnak. Avenue of ram-headed sphinxes running between the Temple of Amen at Karnak and the temple at Luxor. Above, left, columns in Hypostyle Hall, Karnak, with obelisk of Thothmes I in the distance; right, pylon of Ptolemy III Energetes

KÁROLYI, ALOYS, COUNT (1825-89). Austro-Hungarian statesman. He was born at Vienna, Aug. 8, 1825, and entered the diplomatic service. In 1858 he was entrusted with the task of obtaining Russian co-operation against the schemes of Napoleon III. Ambassador to Germany in 1871, he was at the congress of Berlin (1878). He died Dec. 2, 1889.

Count Michael Károlyi (b. 1875), a Hungarian statesman, conducted the fruitless Austro-Hungarian peace negotiations with the Allies through a neutral intermediary in 1917. On the collapse of Austria at the end of Oct., 1918, he became prime minister of Hungary. He was provisional president of the republic, but resigned March, 1919. See Hungary.

KARRI (*Eucalyptus diversicolor*). Tree of the order Myrtaceae, a native of Australasia. Its characters are similar to those of the other gum-trees. Its hard wood is extensively used in blocks for paving roads. It is also employed for the construction of vats.

KARROO. Name applied to the high plains of the Cape Province, S. Africa, and more especially to the dist. (the Great Karroo) between the Nieuwveld Mts. on the N. and the Zwaarte Bergen on the S. The total area is about 100,000 sq. m. The Southern or Little Karroo consists of the highlands lying between the Zwaarte Bergen and the coastal ranges. See Cape of Good Hope.

KARROO SYSTEM. This is a series of sandstones and shales of S. Africa. They contain fossil remains of amphibians and reptiles chiefly of the Triassic period. The karroo system contains the volcanic pipes which have resulted in the diamond deposits of S. Africa.

KARS. Capital of the Turkish vilayet of the same name, 100 m. N.E. of Erzerum. It is a very important and strongly fortified position.

Known to the ancients as Khorzēnē, in the 10th century it was the seat of an independent Bagratide (Armenian) principality. It was occupied by the Turks in 1546, but its possession was frequently disputed by the Russians, and it was incorporated with Russia by the treaty of Berlin. When the Russians withdrew from Armenia in the winter of 1917-18, the Turks conducted a successful offensive in Caucasia, capturing Kars on April 27, 1918, and other towns. Pop. 25,000.



Kars. The town and fortress long contended for by Russians and Turks

Karst. Also known as Carso (q.v.), this is a limestone district of Yugoslavia, embracing large areas N. and E. of the Adriatic.

KASHGAR. Town of Sinkiang, in the district of Kashgar. It consists of two towns, an old and a new, separated by the river Kizil Daria, and is the seat of the governor of the district. There are manufactures of cottons, silks, and carpets. From very early times an important commercial centre, it has frequently changed hands. Pop. about 70,000.

KASHMIR. Native state of India, N. of the Punjab. The upper Indus, with the Gilgit tributary, forms a valley stretching from the S.E. to the N.W. of the State. N.E. of this and parallel to it lie the Karakoram Mts.; S.E. are the Himalayas, and S.W. of them the upper valleys of the Jhelum and Chenab. The Jhelum valley is the famous vale of Kashmir, overlooked by many lofty peaks. The Indus area is peopled mainly by nomad shepherds. Rice, buckwheat, millet, etc., are grown; and fruit and hides are exchanged for textile and metal goods. The ruler is a maharajah, with a salute of 21 guns. Srinagar is the capital. Under Asoka (q.v.), who founded Srinagar, began what is known as the golden age



Karri, the giant gum tree. Its wood is used for paving-blocks

of Kashmir. It reached its height when the Kashmiris defeated the victorious advance of Mahmud of Ghazni in the 11th century. Its area is 84,258 sq. m. Pop. 3,320,518.

KASSASSIN. Town of Egypt. Between Ismailia and Zagazig, 21 m. W. of Ismailia, it was the scene of actions fought Aug. 28 and Sept. 9, 1882, in which Arachi Pasha was defeated by the British.

KASSEL OR CASSEL. Town of Prussia, capital of Hesse-Nassau. It is on the Fulda, 90 m. N.N.E. of Frankfurt-on-Main. The Friedrichs-Platz separates old from new Kassel. From it runs the promenade Schöne Aussicht, on which is the Bellevue Schloss, once a royal residence. Near is the picture gallery, with paintings by Rembrandt, Frans Hals, Rubens, Van Dyck, etc. The Landes museum contains antiquities and other collections. Of the churches, that of S. Martin (14th century, restored) is perhaps the most interesting. Pop. 171,483.

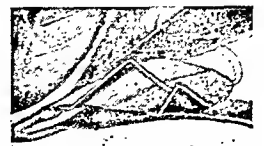
KASSITE. People of non-Semitic origin frequently encountered in Babylonian history. Casual immigrants hearing the cuneiform name Kashshi, apparently from Elam, were living in Babylon under Hammurabi, about 2100 B.C. About 1780 Gandash founded the 3rd or Kassite dynasty, which ruled Babylon until 1200. Their chief contribution to W. Asian civilization was the introduction of the horse.

KATHODE OR CATHODE. Term used to denote the plate of a voltaic cell by which the current leaves the electrolyte or solution and flows to the external circuit. Thus, relatively to the electrolyte, the kathode is the negative plate (—), represented by the positive pole (+) of the external circuit. The anode, or positive (+) plate of the cell, by which the current enters the electrolyte, represents the negative (—) pole of the external circuit. See Cell; Electrolysis; Vacuum Tube

In a thermionic valve the filament is called the kathode. When heated by the current from a battery or other source it sends out electrons, which flow to the anode, or plate. See Anode; Grid; Thermionic Valve

KATRINE. Loch or lake of Scotland. It is almost wholly in Perthshire, with a little in Stirlingshire, and is 8 m. from Callander. About 8 m. long and 1 broad, it is 364 ft. above sea level, and covers nearly 5 sq. m. Its waters are carried by the Achray and Black Avon through lochs Achray and Vennachar to the Teith. Glasgow obtains much of its water from Loch Katrine. In the lake is Ellen's Isle (q.v.), and its scenery is described in Scott's *Lady of the Lake*.

KATTEGAT OR CATTEGAT. Arm of the North Sea, with which it is connected by the Skagerrak on the N. It lies between the E. coast of Jutland and the W. coast of Sweden, the islands of Fünen, Zealand, and Laland lying to the S., with the Sound, Great Belt, and Little Belt leading to the Baltic. Its length is about 150 m. from N. to S., breadth from 50 m. to 90 m., depth from 50 ft. in the W. to 200 ft. in the E. Shallow near its shores, the Kattegat is difficult of navigation.



KATYDID. Katydid. Laurel leaf variety. Popular name for certain American long-horned grasshoppers. Their chirping note, which is supposed to resemble the words *Katy did*, is heard by day and night. See Grasshopper.

Katydid. Laurel leaf variety. *Microcentrum laurifolia*

KAUFFMAN, ANGELICA (1741-1807) Swiss painter, usually classed with the English school. Born at Coire, Oct. 30, 1741, she studied at various centres in Italy, and in 1763 went to Rome. In 1766 she came to London, and painted portraits of the leading notabilities. Elected in 1768 one of the 36 foundation members of the R.A., to which she regularly contributed, she left London in 1781, in which year she married Antonio Zucchi, a Venetian painter. She died Nov. 5, 1807. She displayed exceptional skill in the decoration of the interiors of the mansions designed by the brothers Adam.



Angelica Kauffman,
Swiss painter
Self-portrait in the Acad
S. Luca, Rome

Kaunas. Alternative name of Kovno (q.v.), the capital of Lithuania.

KAURI PINE (*Dammara australis*). Large tree of the order Coniferae, native of New Zealand and Queensland. It stands 150 ft. high, with ovate-lance-shaped leaves and smooth oval cones. The timber is close-grained but soft, of a light yellow colour, and is used in joinery. The tree yields a hard, brittle resin, like dammar (q.v.).

KAVA. A shrubby plant, *Piper methysticum*, having narcotic properties. It is a native of Polynesia. An intoxicating drink is made from the fermented juice of the root.

KAVALLA OR **CAVALLA.** Town of Macedonia, Greece. At the head of the gulf of Kavalla, in the N. Aegean Sea opposite Thasos, it has a large tobacco trade, the district producing some of the best cigarette tobacco in the world. Its possession was one of the causes of the second Balkan War. Bulgaria claiming it from Greece, to whom it passed in 1913. During the Great War its forts were occupied by the Bulgars, Aug. 26, 1916, without opposition from the Greeks. British warships bombarded the forts, but on Sept. 12 the Greek garrison of 8,000 capitulated and the town was occupied by the enemy. The Greeks recovered Kavalla in Oct., 1918. Pop. 50,000. See Greece.

KAVANAGH, ARTHUR MACMORROUGH (1831-89). Irish politician. The son of Thomas Kavanagh, M.P., a landowner in co. Carlow, he was born March 25, 1831. He was remarkable because, although born without arms or legs, he lived the active life of his class. He rode, hunted and shot, and took a leading part in local affairs. From 1866 to 1880 he was an M.P., sitting on the Conservative side. Kavanagh, who married and had a family, died Dec. 25, 1889.

KAY, JAMES (b. 1858). Scottish painter. Born at Lamlash, Arran, Oct. 22, 1858, he exhibited at the R.A. from 1889, at the Salon from 1894, and in the U.S.A. His principal works include *Une Rivière du Nord*, 1903, in the Luxembourg; *Winter*, 1906, and *Un Canal, Ecosse*, 1909, in the Rouen municipal collection; *Launch of the Lusitania*, 1907, in the Glasgow municipal collection; *Launched—River Clyde*, 1907, in the Leeds municipal collection; *A Dutch Canal*, 1912, in the Bradford collection; and *In Search of Grist*, 1913, in the Stirling gallery.

KAYAK. Eskimo fish-
ing or hunting boat for one person, rarely used for two. A skin-covered wooden frame, about 18 ft. long by 2 ft. wide, it is propelled by a double paddle.



Kayak. Skin-covered fishing boat used by Eskimos

The occupant is encased in a skin coat laced to the canoe. See Eskimo.

KAYE-SMITH, SHEILA. British novelist. Putting to good advantage an intimate knowledge of life in the Sussex villages, she made a hit with her first book, *The Tramping Methodist*, 1908. Others, mainly in the same vein, include *Starbrace*, 1909; *Sussex Gorse*, 1916; *Tamarisk Town*, 1919; *Green Apple Harvest*, 1920; *The End of the House of Alard*, 1923; *The George and the Crown*, 1925; *Saints in Sussex*, 1926; *Iron and Smoke*, 1928; and *The Villago Doctor*, 1929.

Kayseri. Alternative name for the Palestine village of Kaisariyeh (q.v.).

KAZAK. Autonomous republic of Soviet Central Asia. It comprises a vast tract of country W. of Mongolia and S. of the Ural and Siberian areas. The capital is Kzyl-Orda (Ak-Mechet). The area is about 1,125,000 sq. m. Pop. about 6,530,000.

KAZAN. Town of the Union of Socialist Soviet Republics, capital of the autonomous Tartar republic. It stands on the Kazanka, near its junction with the Volga. It has a university. Kazan is an important place on the trade routes to Siberia, China, and Persia. Originally a Mongol khanate, it was conquered by Russia in 1552. Many of the inhabitants are Mongol Tartars. Pop. 174,732.



Kea. A New Zealand parrot

took to haunting the sheep-stations and feeding on the offal of sheep killed for consumption. It soon showed a preference for the fat surrounding the kidneys, and later became a bird of prey, attacking living sheep on the runs, and tearing off the wool and flesh of the loins to reach the kidneys. The kea is somewhat larger than the kaka (q.v.).

KEAN, CHARLES JOHN (1811-68). British actor. Born at Waterford, Jan. 18, 1811, the second son of Edmund Kean, he became an actor, but failed to achieve popularity until 1838, when he played Hamlet at Drury Lane. In 1850 he became lessee of the Princess's Theatre, and from 1852-59 produced gorgeous Shakespearian revivals. He died Jan. 22, 1868.

Kean's wife, Ellen Tree (1805-1880), whom he married in 1842, was an actress who made her debut at Covent Garden in 1823 as Olivia in *Twelfth Night*. She appeared with him in his Shakespearian revivals at the Princess's, and was also notable for her Lady Teazle, Jane Shore, and other rôles.

KEAN, EDMUND (1787-1833). British actor. Born in London, March 17, 1787, after a childhood of hardship, he took to the stage, playing in various touring companies, and suffering much privation. Given a chance by the Drury Lane management, he made a memorable and triumphant debut in the part of Shylock, Jan. 26, 1814. Success also attended his appearances as Richard III, Hamlet,



Charles John Kean,
British actor

Othello, Lear, and Macbeth, and he achieved popularity as Sir Giles Overreach in Mas-singer's comedy *A New Way to Pay Old Debts*, Leon in Beaumont and Fletcher's *Rule a Wife and Have a Wife*, Young Norval in Home's *Douglas*, and Rolla in Sheridan's *Pizarro*. He visited the U.S.A. in 1820 and 1825. He was regarded when at the height of his powers as the greatest tragedian of his day. Small in stature, he had a fine head, flashing eyes, and a voice of a rare magnetic quality. He died at Richmond, May 15, 1833.



Edmund Kean,
British actor

After S. J. Stump, in the
Nat. Portrait Gallery

KEARSLEY. Urban district of Lancashire. It is 4 m. from Bolton, on the L.M.S. Rly. The chief industries are connected with the coal mines in the neighbourhood. Pop. 9,610.

KEATE, JOHN (1773-1852). English school-master. Born at Wells, and educated at Eton and King's College, Cambridge, from 1809-34 he was headmaster of his old school. Under him the tone and character of the school were greatly improved, but he is best remembered for his vigorous floggings. He died Mar. 5, 1852.

KEATS, JOHN (1795-1821). English poet. Born in London, Oct. 29 or 31, 1795, the son of a livery stable keeper, he was apprenticed in 1810, after the death

of his parents, to a surgeon in Edmonton. In 1816 he became dresser at Guy's Hospital, but soon afterwards abandoned surgery for literature, having meanwhile made the acquaintance of Leigh Hunt, Hazlitt, Haydon, Shelley, and Godwin. His first volume of poems, published in 1817, achieved no recognition. It was followed in 1818 by *Endymion*, which was savagely attacked by *The Quarterly Review* and *Blackwood's Magazine*. In 1820 he published another volume, *Hyperion and Other Poems*, containing *Lamia*; the *Odes to Autumn*, *To a Nightingale*, and *On a Grecian Urn*; and the ballad *La Belle Dame Sans Merci*. A breakdown in health, for which his infatuation for Fanny Brawne was partly responsible, drove him from England in the same year. He died in Rome, Feb. 23, 1821.

From 1817-20 Keats lived at Hampstead, and his house in Keats Grove (formerly John St.) is now preserved as a memorial. Consult *Keats and His Poetry*, W. H. Hudson, 1911; *The John Keats Memorial Volume*, ed. J. C. Williamson, 1921.

KEBLE, JOHN (1792-1866). British divine and poet. Born at Fairford, Gloucestershire, April 25, 1792, he was ordained in 1815, and in 1816 became curate of two small parishes near his native place. In 1827 he published anonymously his most famous work, *The Christian Year*. Keble was professor of poetry at Oxford, 1831-41. In 1836, having already become identified with the Oxford Movement (q.v.), which had its origin in a sermon on National Apostasy preached by him at Oxford, he became vicar of Hursley, Hants. He died Mar. 29, 1866.



John Keble,
British divine
After G. Richmond, R.A.

Kehle College, Oxford, was founded in 1870 as a memorial. Undergraduates are all members of the Church of England. The buildings, which are in Parks Road, include a magnificent chapel in which Holman Hunt's *Light of the World* is preserved.

KEDLESTON. Village of Derbyshire, 4 m. from Derby. Here is Kedleston Hall, the seat of the Curzons and, until his death in 1925, of the Marquess Curzon. It was built between 1759-68 in the classical style. The Curzons have lived here since about 1100. In 1930 it was announced that the library and art treasures would be sold.

KEENE, CHARLES SAMUEL (1823-91). English illustrator. Born at Hornsey, London, Aug. 10, 1823, he began to work intermittently for Punch in 1851, and from 1860 was a full member of the staff. He illustrated books in general literature as well, such as Douglas Jerrold's *Mrs. Caudle's Curtain Lectures*. But his brilliant work on Punch constitutes his title to fame, and it is universally recognized that he was one of the most consummate draughtsmen in black and white ever known. He died in London, Jan. 4, 1891.



Charles S. Keene, English illustrator

KEEP. In architecture, the stronghold and residential part of a medieval castle in time of siege. The Norman square keep was the highest of the castle buildings, and generally occupied the highest site. Another type of keep was the "shell" keep, a polygonal or round structure, entirely surrounded by its own ditch, across which was carried a drawbridge. The most notable extant example of the square keep is the White Tower of the Tower of London, while the shell keep is worthily represented at Windsor, Arundel, and Warwick castles.

KEETMANSHOOP. Town of the S.W. Africa Protectorate. It is 573 m. from Walvis Bay, and has railway engineering shops. Pop. 2,633, Europeans 944.

KEEWATIN. One of the three provisional districts of the North-West Territories, Canada. Its area is 228,160 sq. m. The name is connected with Cree, the north-west wind. The old district of Keewatin was much larger, but in 1905 parts of it were given to Ontario and Manitoba.

The town of Keewatin, in Ontario, is a summer resort. It stands on Lake of the Woods, 130 m. S.E. of Winnipeg, with a station on the C.P.R. Pop. 1,327.

KEIGHLEY. Borough and market town of Yorkshire (W.R.). It is 9 m. from Bradford and 17 m. from Leeds, on the L.M.S. and L.N.E. Rlys., being also served by a canal. Keighley has manufactures of worsted goods, textile machinery, sewing machines, machine tools, etc. In 1921 it adopted the French town of Poix-du-Nord. Market day, Wed. Pop. 41,550. Pron. Keethly.

KEITH. Burgh of Banffshire, Scotland. It stands on the Isla, 53 m. from Aberdeen, and is served by the L.N.E. and L.M.S. Rlys. It consists of three parts, Old Keith and New Keith on the right bank of the river, and Fife Keith on the left. Old Keith, made a corporate town in the 12th century, lost its early prosperity, and in the 18th century New Keith was built. Pop. 4,270.

KEITH, SIR ARTHUR (b. 1866). British scientist. Born Feb. 5, 1866, he took his degree as a doctor, becoming famous as an authority on comparative anatomy and anthropology. He held many appointments with learned societies, and was conservator

of the museum and Hunterian professor at the Royal College of Surgeons. In 1913 he was made F.R.S., and in 1921 he was knighted.

He was president of the British Association in 1927. His writings include *The Human Body*, 1912; *Antiquity of Man*, 1915; *Religion of a Darwinist*, 1925; *Concerning Man's Origin*, 1927; and many others of similar character.

KELHAM. Village of Nottinghamshire. It stands on the Trent, 2 m. N.W. of Newark. The hall, formerly the seat of Lord Lexington, is a house of the Society of the Sacred Mission, wherein men are trained for the Anglican ministry. In 1928 a new chapel was opened. The village is the site of a sugar beet factory started in 1924.

KELLER, HELEN ADAMS (b. 1880). American blind deaf mute. Born at Tusculum, Alabama, June 27, 1880, she was deprived when 19 months old of sight, smell, and hearing, by an attack of scarlet fever. Miss Anna Sullivan, of the Perkins Institute of the Blind, taught her the deaf and dumb language by touch, reading by the Braille system, writing and typewriting, and, in 1890, how to speak. In 1904 she graduated with honours at Radcliffe College, Boston. She published *The Story of My Life*, 1902, and other books.



Sir Arthur Keith, British scientist



Helen Keller

KELLERMANN, FRANÇOIS CHRISTOPHE (1735-1820). French soldier. Born in Strasbourg, May 28, 1735, in 1752 he entered the French army, and had reached high rank when the French Revolution broke out. He was given a command in the republican army, and was responsible for its victory at Valmy, in 1792. In 1804 he was made a marshal, and in 1809 duke of Valmy. Kellermann supported the Bourbons after 1814, and was made a peer. He died Sept. 23, 1820.

His son François Étienne (1770-1835) was also a distinguished soldier, serving under Napoleon.

KELLOGG, FRANK BILLINGS (b. 1856). American diplomatist. Born in Potsdam, N.Y. State, he became a lawyer, and as such was retained by the United States Corporation. He became widely known as prosecuting counsel for the U.S. against the Standard Oil Company, and was elected to the Senate in 1916. He was United States ambassador to Great Britain in 1923-25, and became secretary of state, U.S.A., 1925. As secretary of state his name was associated with the pact for ensuring world peace proposed by the U.S.A. in 1928, and declared operative in 1929.

KELLS. Urban dist. of co. Meath, Irish Free State. It stands on the Blackwater, 10 m. from Navan, with a station on the G.N. of I. Rly. Its antiquities include S. Columba's House, a round tower, and several stone crosses. There is a modern church, with an old detached bell tower rebuilt in 1572. Kells owed its existence to the fact that the kings of Ireland made it a royal residence. In the 6th

century S. Columba founded here a monastery in which the Book of Kells was written. It was a bishopric, 800-1300. Pop. 2,196.

The Book of Kells is the finest extant early Irish illuminated MS. of the Gospels. Dating from the 8th century, it is now preserved in Trinity College, Dublin.

KELLY, EDWARD (1854-80). Australian bushranger. Familiarly known as Ned Kelly, he was the eldest of three sons of an ex-convict. Following a charge of horse-stealing, he and his brother Daniel took to the hills and inaugurated a reign of terror in Victoria and New South Wales, varying their cattle-thefts by raiding and burning banks and government property. On June 27-28, 1880, the gang was rounded up, and Ned Kelly was wounded and captured. He was afterwards tried, convicted, and hanged Oct., 1880.

KELMSCOTT PRESS. Private printing press founded by William Morris (q.v.). Started in 1890 in a cottage adjacent to Morris's residence, Kelmscott House, Hammer-smith, it was removed, in 1891, to Sussex House, near by. In seven years 53 works in 65 volumes were produced, including *The Story of the Glittering Plain*, and reprints of Chaucer's *Golden Legend* and Recueil of the *Histories of Troy*. Consult *Life of W. Morris*, J. W. Mackail, 1899.

KELP. Name given to the slag or ash obtained by burning seaweed, and also to the seaweed itself. Kelp production was formerly an important industry in the West Highlands of Scotland, and is still carried on there to a small extent, and in Normandy. From kelp are obtained soda and potash salts and iodine, but cheaper methods of producing these commodities had virtually extinguished the kelp industry in Great Britain before the Great War.

Kelpie. Spirit in Scottish folklore. It was supposed to haunt fords and streams, especially as a horse, on stormy nights.

KELSO. Burgh of Roxburghshire, Scotland. It is situated 52 m. S.E. of Edinburgh, on the L.N.E. Rly., at the junction of the rivers Teviot and Tweed. Kelso is an important agricultural centre, with corn and cattle markets and an annual fair. Its early importance was due to its abbey, founded about 1120 by David I; it was dissolved at the Reformation. Much of the cruciform church, including the great central tower, remains, but little else. In 1919 the ruins were given to the nation by the duke of Roxburgh. Pop. 3,527.



Book of Kells. Facsimile of illuminated miniature from this fine early Irish MS.

KELTY. Mining centre of Fifehire, Scotland. It is 8 m. by rly. N.E. of Dunfermline, on the L.N.E.R. Pop. 7,800. A river of this name forms part of the boundary between Stirlingshire and Perthshire.

KELVIN. River of Scotland. Rising in the Kilsyth Hills, it flows into the Clyde near Partick, after a course of 21 m., largely through the urban districts W. of Glasgow. It gives its name to a public park of Glasgow, Kelvin-grove. Kelvinhaugh is a district of Glasgow, containing docks. See Glasgow.

KELVIN, WILLIAM THOMSON, 1st BARON (1824-1907). British physicist. Born in Belfast, June 26, 1824, he was appointed professor of natural philosophy at Glasgow in 1846, an appointment he held for 53 years. In 1854 he published his paper *On the Theory of the Electric Telegraph*; in 1856 came his

invention for receiving messages, the mirror galvanometer; and in 1857 he took a leading part in laying the first Atlantic submarine cable. In 1867 appeared his paper On Vortex Atoms, one of the most remarkable theories of matter ever put forward. In 1884 he delivered a series of lectures at Baltimore on Molecular Dynamics and the Wave Theory of Light which have had a lasting effect upon human thought. Some sixty important inventions are due to Kelvin.



Lord Kelvin,
British physicist
Russell

His remarkable research work brought him numerous honours. He was president of the Royal Society 1890-94, was made a peer in 1892, and was the first member of the Order of Merit, 1902. Consult Life, S. P. Thompson, 1902.

KEMAL PASHA, GHAZI MUSTAPHA (b. 1882) Turkish nationalist leader. Born at Salonica, in 1915 he was commander of the Turkish army in Gallipoli. After the armistice of 1918 he gathered around him a band of followers, and in April, 1920, was the chief instrument in setting up the Grand National Assembly of Turkey at Angora (q.v.), which in November, 1922, abolished the office of the sultanate. Kemal soon became the virtual ruler of Turkey, and his unyielding attitude in negotiations with Britain ended in Turkey's recovery of practically her pre-war European territory as embodied in the treaty of Lausanne, July, 1923. In Oct., 1923, he became president of the Turkish republic. See Turkey.



Kemal Pasha,
Turkish leader

KEMBLE, CHARLES (1775-1854). British actor. Younger brother of John Kemble and Mrs. Siddons, he was born at Brecon, Nov. 25, 1775. He appeared first on the stage at Sheffield in 1793. In 1794 he acted in Macbeth in London and played a number of successful parts, chiefly in comedy, until 1840, when he retired. He died Nov. 12, 1854.

KEMBLE, FRANCES ANNE OR FANNY (1809-93). British actress. Born in London, Nov. 27, 1809. the elder daughter of Charles Kemble, she made her first appearance on the stage at Covent Garden, Oct. 5, 1829, as Juliet to her father's Mercutio. In 1848 she began at Willis's Rooms the first of her series of Shakespearean readings. She was the author of several plays and poems, and in addition wrote autobiographical volumes of reminiscences. She died in London, Jan. 15, 1893.



Fanny Kemble,
British actress
After Sir Thos.
Lawrence

Her younger sister Adelaide (c. 1814-79) was a successful opera singer at Covent Garden.

KEMBLE, JOHN PHILIP (1757-1823). British actor. Born at Prescott, Lancashire, Feb. 1, 1757, eldest son of Roger Kemble, a theatrical manager, and brother of Mrs. Siddons, he made his first London appearance at Drury Lane, Sept. 30, 1783, as Hamlet. From 1788-96, and in 1801-2, he was manager of Drury Lane, and from 1803 to 1817 of Covent



John Philip Kemble,
British actor
After Sir Thos.
Lawrence

Garden. His Coriolanus, Brutus, Cato, Hotspur, and Hamlet were deemed his most successful impersonations. He died at Lausanne, Feb. 26, 1823.

KEMMEL. Village and hill of Belgium. The village is 5 m. S.W. of Ypres, and the hill, Mont Kemmel, half a mile S.W. of the village. Both came into prominence in the later stages of the Great War. The village was used by the British as a rest billet. Mont Kemmel (512 ft.), defended by the French, was stormed by the Germans, April 25, 1918. The Allies recaptured the village on April 26, but soon retired from it, capturing it again in Aug. A British memorial has been erected here.

KEMP, SIR ALBERT EDWARD (1858-1929). Canadian politician. Born in Quebec, Aug. 11, 1858, he became a successful manufacturer at Toronto. He entered political life in 1900 as Conservative M.P. for East Toronto, which he represented until 1908, and for which he was again returned in 1911. He was minister without portfolio, 1911-15; minister of militia and defence, 1916-17, and minister of overseas military forces, 1917-20, with headquarters in London. In 1921 he was made a member of the Senate. Kemp was knighted in 1917 and died Aug. 12, 1929.

KEMPENFELT, RICHARD (1718-82). British sailor. Born at Westminster, the son of a Swede in British service, he entered the navy as a boy. He was appointed captain of the Elizabeth in 1757 and fought at Pondicherry in 1761. Captain of the fleet, 1778, and rear-admiral 1780, he went to sea again in 1781 and defeated a large French fleet off Ushant. In 1782 he was ordered to refit the Royal George. On the guns being shifted to mend a leak the vessel foundered, and nearly all the 800 on board perished, including Kempfenfelt, Aug. 29, 1782. The incident forms the theme of William Cowper's The Loss of the Royal George.

KEMPSEY. Town in New South Wales. On the Macleay river, 225 m. from Sydney by steamer, it exports maize, butter, and timber (cedar) produced in the district. Pop. 3,000.

KEMPSTON. Urban dist. of Bedfordshire. It stands on the Ouse 2 m. W.S.W. of Bedford. Pillow-lace making is carried on. All Saints' church is Norman, with a Decorated nave. Relics of Roman-British and Anglo-Saxon cemeteries have been obtained from gravel pits. Pop. 5,218.

KEMPTON PARK. District of Sunbury, Middlesex. The manor house became a royal dwelling, and so remained until the time of Edward III. With Hanworth (q.v.) Park, Kempton Park formed a hunting ground for Henry VIII. Kempton Park covers about 500 acres, 300 of which are enclosed to form a racecourse. The principal races here are the Great Jubilee Stakes in spring and the Duke of York Stakes in autumn. There is a station on the Southern Rly.

KEMP TOWN. District of Brighton. At the E. end of the borough, it has a station on the Southern Rly. The marine parade, Madeira drive, and an electric rly. connect it with Brighton proper. See Brighton.

KEMP-WELCH, LUCY ELIZABETH (b. 1869). British painter. Born at Bourne-mouth, she received her art training at the Herkomer School, Bushey, and exhibited at the Royal Academy after 1894. She devoted particular attention to animals, especially the horse. Her pictures, distinguished by vigour of design, admirable technique, and fine colouring, include Colt Hunting in the New Forest, 1897; Lord Donald's Dash on Ladysmith, 1901; and Timber Hauling, 1904.

KEMSING. Village of Kent. Below the Pilgrims' Way (q.v.), between Otford and Wrotham, it contains an ancient church,

restored in 1870, and a well, dedicated to the Saxon priocess, S. Edith, who is said to have been born here. Her image was long venerated as powerful for the preservation of grain.

KEN, THOMAS (1637-1711). English prelate. Born at Berkhamstead, he was ordained in 1662. For some years he was engaged in clerical work in Winchester, and in 1679-80 he was at The Hague as chaplain to Mary, princess of Orange. In 1685 he was made bishop of Bath and Wells, but he was deprived in 1691 as a nonjuror. Ken was one of the seven bishops who refused to read the Declaration of Indulgence in 1688. After 1691 he lived in retirement until his death at Longleat, March 19, 1711. Above all he is known as a hymn writer, two of his hymns being Awake my soul and with the sun, and Glory to Thee, my God, this night. See Nonjurors; Seven Bishops.



Thomas Ken,
English prelate

KENCHESTER. Village of Herefordshire. Near the Wye, 5 m. above Hereford, it is the site of the Romano-British town of Magna Castra. Excavations in 1912-13 revealed a street, houses with mosaic pavements, hypocausts, lead drains, Samian ware, and coins.

KENDAL. Borough and market town of Westmorland, in full, Kirkby-in-Kendal. It stands on the Kent, 21 m. from Lancaster and 251 m. from London, on the L.M.S. Rly. It is connected with Lancaster and Preston by canal. The Gothic church of Holy Trinity dates in part from the 13th century. The principal manufactures are woollen goods of various kinds, boots and shoes, agricultural machinery, paper, snuff, and tobacco. It has horse and cattle fairs. Kendal grew up round a castle built before 1066. Market day, Sat. Pop. 14,146.

The title duchess of Kendal was given in 1718 by George I to his mistress, Ehrengard Melusina (1667-1743), a daughter of a count of Schulenburg. Owing to her thinness, she was called the maypole. The title became extinct on her death, May 10, 1743.

KENDAL, MARGARET (b. 1849). British actress, whose early successes were won in her maiden name of Madge (for Margaret) Robertson. Born at Cleethorpes, Lincolnshire, March 25, 1849, a sister of T. W. Robertson, the dramatist, she made her London debut July 29, 1865, as Ophelia at The Haymarket, where she was also successful in old English comedies. At the old Prince of Wales's she appeared in Diplomacy, 1878, and from 1879-88 she played at The St. James's, more particularly in The Squire, The Ironmaster, and Clancarty. Her greatest triumph in her later years was in The Elder Miss Blossom. She married W. H. Kendal in 1869 and retired 1908. She received the D.B.E., 1926.



Kendal, Margaret and William
Kendal, in Diplomacy

Her husband, William Hunter Kendal (1843-1917), whose real name was Grimston, acted as her leading man for many years, and from 1879-88 managed The St. James's in association with John Hare.

KENFIG. Old town of Glamorganshire, Wales. It is on the coast, 6 m. from Bridgead. The English settlers built a castle here, and

before the 16th century it was a municipality and market town. It was partly destroyed by the sea about 1700, but remained a borough with its portreeve and recorder. Pop. 300. Kenfig Pool is a lake near.



Kenilworth Castle ruins, Warwickshire, showing Caesar's Tower on the right

KENILWORTH. Urban district of Warwickshire. It is 4 m. N. of Warwick, on the L.M.S. Rly. Pop. 7,598.

Kenilworth is chiefly noted for its castle, which figures in Sir Walter Scott's *Kenilworth*. John of Gaunt built the Strong Tower (Mervyn's Tower), the banqueting hall, and the White Hall, and further additions were made by Henry VIII and by Robert Dudley, earl of Leicester, upon whom, in 1562, it was conferred by Queen Elizabeth, who visited the castle several times. During the Civil War most of the castle was dismantled, and lake and moat drained.

The church of S. Nicholas has a Norman door, taken from the Augustinian priory, founded by Geoffrey de Clinton and destroyed by Henry VIII. Near are Stoneleigh Abbey and Baddesley Clinton, notable for its moated manor house. The Ban or Dictum of Kenilworth embodied terms offered to the garrison by Henry III, Oct. 31, 1266, when besieging the castle during the Barons' War.

KENLEY. Parish of Surrey. It is 17 m. S.E. of London, between Purley and Whyteleafe, on the Southern Rly. Kenley Common is the property of the corporation of the city of London. Part was acquired by the air ministry in connexion with the aerial defence of London. Pop. 2,034. There is a village of this name in Shropshire, 4 m. from Much Wenlock. S. John's Church dates from Saxon times.

KENMARE. Town of co. Kerry, Irish Free State. Near the head of the Kenmare river—an opening of the sea between cos. Kerry and Cork—which is crossed by a suspension bridge, and the terminus of a branch of the G.S. Railways, it is a favourite tourist centre. Near are Dunkerron Castle, the old home of O'Sullivan More; and Derreen, a residence of the marquess of Lansdowne. Pop. 883. See Kerry.

Earl of Kenmare is an Irish title borne since 1801 by the family of Browne. Sir Valentine Browne was made a baron and a viscount in 1798, and an earl in 1801. Valentine, the 4th earl, was an M.P. from 1852 to 1871, and was lord chamberlain 1880-85. The earl's seat is Kenmare House, Killarney, and his eldest son is known as Viscount Castlerosse.

KENNEDY, BENJAMIN HALL (1804-89). British scholar. Born at Summer Hill, Birmingham, Nov. 6, 1804, he became fellow and lecturer at S. John's College, Cambridge, in 1828, and was ordained. In 1830 he became a master at Harrow, and from 1836-66 was headmaster of Shrewsbury. In 1867 Kennedy became regius professor of Greek at Cambridge and canon residentiary of Ely.

He died April 6, 1889. He is best known by his *Public School Latin Grammar*.

His younger brother, Charles Rann Kennedy (1808-67), translated various classical authors, but his main work was as a barrister; he was also professor of law at Queen's College, Birmingham. Kennedy's nephew, William Rann Kennedy (d. 1915), was a famous lawyer who became a lord justice of appeal.

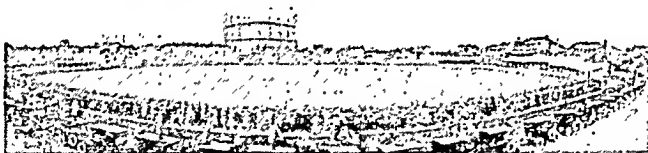
KENNEDY, MARGARET. British novelist. The daughter of a barrister, C. M. Kennedy, she was educated at Cheltenham and Somerville College, Oxford. Her first book was an historical study, *A Century of Revolution*, 1922, but she won fame by her novel, *The Constant Nymph*, 1924, which has been dramatised. In 1927 she published *Red Sky at Morning*, *Come with Me*, 1928, and she collaborated with Basil Dean in a play. In private life she is Mrs. David Davies.

KENNEL (Fr. *chenil*, late Lat. *canile*). Building or range of buildings in which dogs are kept. The name is also used loosely to include the staff and the entire organization of such an establishment.

The Kennel Club is a society founded in 1873 by S. E. Shirley to promote the interests of dog-breeders. All leading shows are held under its rules. Its house is 84, Piccadilly, London, W.1.

KENNET. River of Wiltshire and Berkshire. Rising on the Wiltshire Downs and flowing 44 m. in a generally E. direction to the Thames at Reading, it is noted for trout. It is navigable to Newbury.

The Kennet and Avon Canal passes through Berkshire, Wiltshire, and Somerset. It connects Reading with Bath. Including the Kennet river and Avon river sections, it measures 86½ m., and has 106 locks. Between Devizes and Bradford-on-Avon it is joined by the Wilts and Berks Canal.



Kennington Oval. The famous cricket ground of the Surrey County Cricket Club

KENNINGTON. District of the London bor. of Lambeth (q.v.). Kennington Road runs from Westminster Bridge Road to Kennington Park. Kennington Park covers part of what was once Kennington Common, which was the scene of the execution of many who took part in the Jacobite rising of 1745, and the meeting place selected for the great Chartist demonstration of 1848. Opposite the park is Kennington Oval, the ground of the Surrey County Cricket Club. Much of the property belongs to the duchy of Cornwall.

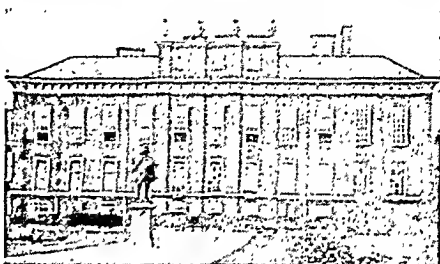
KENNINGTON, ERIC HENRI (b. 1888). British artist. Born in London, March 12, 1888, he studied art at the Lambeth School of Art, 1905-7. His painting, *The Costard-mongers*, 1914, is in the Luxembourg, Paris. In 1914 he went to France with the 13th batt. London Regt., but was invalided home in the summer of 1915. Shortly afterwards his large painting on glass, *The Kensingtons at Laventie*, attracted wide attention by its nobility of design. During 1917-18 he was an official artist on the Western front.

KENORA. Town of Ontario, Canada, formerly known as Rat Portage. It stands where the Winnipeg river issues from Lake of the Woods, 133 m. E. of Winnipeg, on the C.P.R. It has flour and other manufactures and a trade in lumber, and is a distributing centre for a mining district. Pop. 5,407.

KENSAL GREEN. District of N.W. London, on the L.M.S. and Bakerloo (Tube) Rlys. It lies between Kilburn and Harlesden, on the Harrow Road, and is notable for its two cemeteries, All Souls' and S. Mary's.

KENSICO. Village of New York state, U.S.A., 30 m. N. of New York City. A great concrete dam was completed here in 1916, by enclosing a part of the Bronx river. It forms a reservoir capable of holding water for ten weeks' supply to the city.

KENSINGTON. One of the 28 metropolitan boroughs of the county of London. Known as the royal borough, it covers 2,291 acres and includes the districts of Brompton, Campden Hill, Earl's Court, Holland Park, with Holland House, Notting Hill Gate, and Queen's Gate. The parish church of S. Mary Abbots is notable for its spire, 278 ft., long



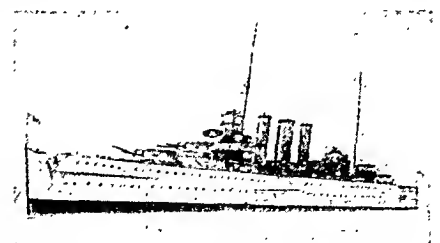
Kensington Palace. South front of the palace, with statue of William III by H. Buncke

vaulted cloister, and fine peal of bells. The town hall, designed by R. Walker, was opened in 1880. Other buildings are the Natural History and Victoria and Albert Museums, Imperial Institute, and the Brompton Oratory. Kensington Canal ran from the Thames, near Battersea Bridge, to the Great Western Rd., near Kensington Palace. Pop. 175,686.

Kensington Gardens lie between Hyde Park and Kensington Palace. Herein is the Albert Memorial. The Round Pond, actually octagonal, the Sunk Garden, the Long Water (a part of the Serpentine), and the Broad Walk are other features.

Kensington Palace, a former royal residence, is an enlargement of the original Nottingham House, built in the reign of Charles II, and purchased from the 2nd earl of Nottingham by William III in 1689. The duke and duchess of Kent had apartments in the palace, and Queen Victoria was born there.

KENT. British cruiser. Launched in 1901, she displaced 9,800 tons, and had an armament of 14 6-in. guns, ten 10-pdrs., and two torpedo tubes. She won fame in the battle of the Falkland Islands by sinking



H.M.S. Kent. British cruiser laid down in 1924 and launched in March, 1928
S. Credit: Southsea

the Nürnberg, and later chased the Dresden. The ship was sold in 1920.

In 1924 a new Kent was laid down and in 1926 she was completed. The name ship of a class of five cruisers, she displaces 10,000 tons and is 590 ft. long. She carries eight 8-in. guns and steams 31½ knots. The cruisers are built to burn oil.

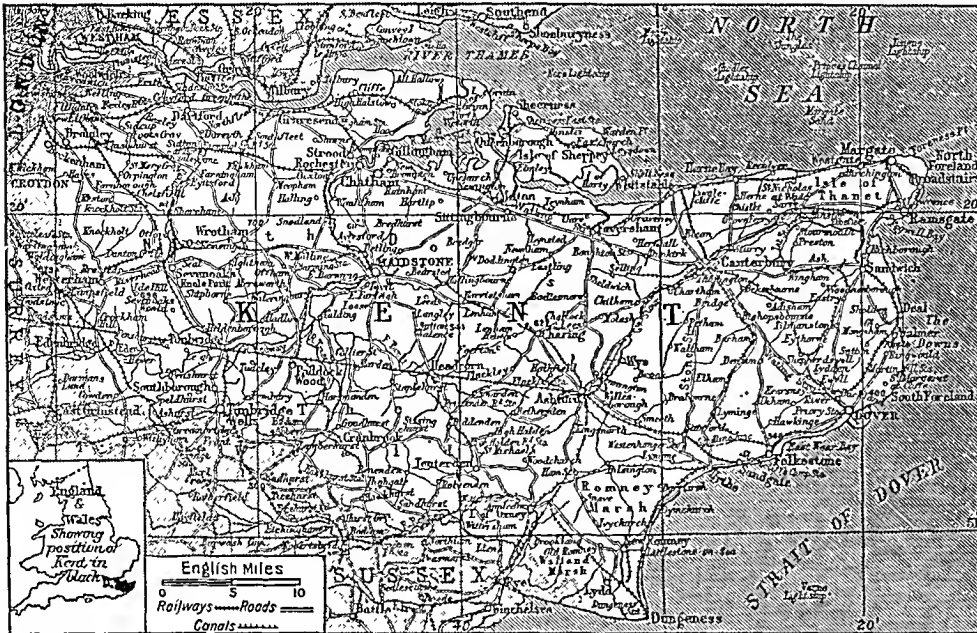
KENT. County of England. It lies between the estuary of the Thames and Sussex, with the sea on its E and S.E. sides. Its area is 1,525 sq. m. It is largely level, but the North Downs run through it. In the

In 1799 George III made his fourth son, Edward Augustus (1767-1820), duke of Kent. In 1818 he married Victoria Mary Louisa (1786-1861), widow of Emich Charles, prince of Leiningen, and was the father of Queen

Ohio and Mississippi, the chief rivers of the state. Agriculture is the principal industry. Maize and wheat are the predominant cereals, but tobacco is the largest crop.

Coal, petroleum, and natural gas are obtained, and the state is noted for its horses; manufactures include spirits, flour, and lumber, and timber products. Mineral springs occur, and there are limestone caves, including the Mammoth Cave. The railways have a track length of well over 4,000 m. Frankfort is the capital. The area is 40,598 sq. m. Pop. 2,553,000.

KEN WOOD or **CAEN WOOD.** London estate now the property of the nation. On high ground between Highgate and Hampstead, the house, which has N. and S. fronts, was reconstructed by Robert Adam and enlarged by George Saunders. The surrounding wood from which it takes its name is notable for cedars, beeches, and limes. In 1661 Thomas Vener and his Fifth Monarchy confederates fled here. Acquired later by the dukes of Argyll, Caen Wood was devised to the 3rd earl of Bute. It was bought in 1755 by William Murray, 1st earl of Mansfield, and belonged later to the earl of Iveagh, who left it by will to the nation, together with its valuable collection of pictures and grounds of 73 acres. The actual wood was



Kent. Map of the south-eastern county of England, famous for its orchards and hop fields and its historic associations

centre is the Weald, and in the S.E., around Romney, is a low, marshy area. The islands, in name only, of Sheppey and Thanet are in the county. The chief rivers are the Medway, Darent, and Stour. Maidstone is the county town. The W. end of the county is within the London area. Around Chatham and Rochester is a great industrial area, while Gravesend with its paper mills is another busy place. It is served by the Southern Rly.

Kent is a great hop growing county, and is noted for fruit and for sheep. Whitstable is famous for oysters. Coal has been found, and is worked. Canterbury and Tonbridge are noted cricketing centres. Those born east of the Medway are men of Kent and those born west of it are Kentish men.

Historically Kent is rich. Here are Thanet, where Hengist and Horsa and then S. Augustine landed; Canterbury and Rochester, with their cathedrals; Dover, Hythe, and other Cinque Ports; medieval castles at Rochester, Hever, Leeds, and elsewhere; memorable houses such as Penshurst and Knole. Places in the county figure in David Copperfield, The Pickwick Papers, etc. Pop. 1,411,867.

Kent was one of the Anglo-Saxon kingdoms, probably the first. It was settled by the Jutes, and in the 6th century was the most important of all the English kingdoms. Ethelbert was its best known king. Its independence was lost about 700, and it soon passed under the authority of Wessex.

KENT, EARL AND DUKE OF. English titles borne by various princes and others. As an hereditary title, the earldom began probably with Edmund, a son of Edward I. In 1405 it was revived for Edmund, Lord Grey of Ruthin, a descendant through his mother of the Hollands who had held it in the 14th century. Henry, the 12th earl, was made marquess of Kent in 1706 and duke in 1710, but the titles became extinct when he died in 1740.



Duke of Kent, British prince
After Sir W. Beechey R.A.

Victoria. On the duke's death, Jan. 23, 1820, the title became once more extinct.

KENTIGERN (c. 518-603) Scottish saint. A member of the Pictish royal family, he was educated at the abbey of Culross, where he was known by the name of Mungo (well-beloved). When a young man he lived for some years as a hermit at Glasgow, and was consecrated bishop of the district. He founded Glasgow Cathedral, and is the patron saint of the city. He also founded the monastery of S. Asaph.

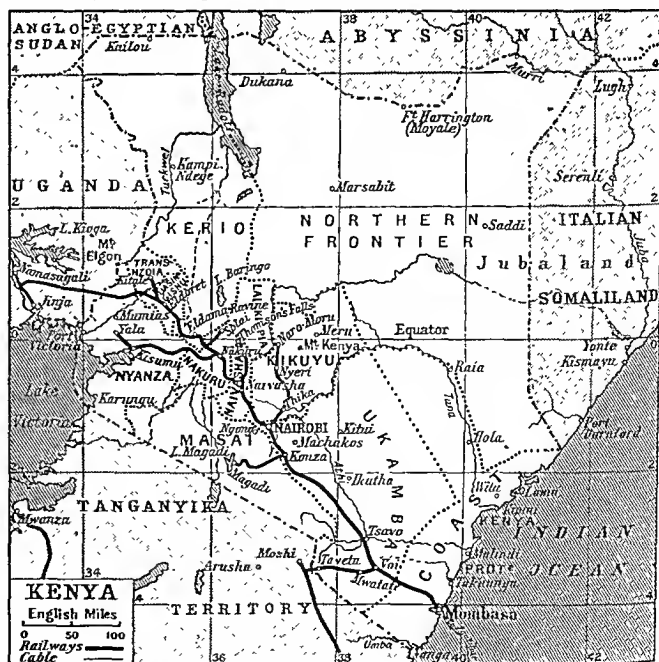
Kentish Rag. Term used for a limestone of the Hythe beds found in Kent. It is used as a building stone and for road making.

KENTISH TOWN. District of N.W. London. It is a ward of the bor. of St. Pancras, S.E. of Parliament Hill Fields, between Haverstock Hill and Camden New Town. In 1670 the manor was acquired by the Jeffreys family, from whom it passed to that of Earl Camden. It is an industrial area with various manufactures and large railway yards. A polytechnic institute, the North-Western, was opened in 1929.

KENTUCKY. State of the U.S.A. Except in the E., which lies in the Allegheny region, and the S.E., broken by the Cumberland Mts., the surface is generally undulating. The N. and W. borders are formed respectively by the

saved from being built on, and opened to the public by King George in 1925.

KENYA. British crown colony in East Africa. Bounded N. by Abyssinia, S. by Tanganyika Territory, N.E. by Italian Somaliland, S.E. by the Indian Ocean, and W. by Uganda, it includes certain coast lands formerly belonging to the Sultan of Zanzibar (the Kenya Protectorate). Formerly a British protectorate, it was annexed to the crown in 1920. Jubaland was ceded to Italy



Kenya Colony. Map of the British possession formerly known as British East Africa. It is divided into seven provinces

in 1925. The colony is administered by a governor with an executive and a legislative council. Nairobi is the capital, and Mombasa

the chief port. The area is 225,100 sq. m. Pop. 2,891,691, including 12,000 Europeans.

The surface is mainly elevated plateaux, with broad valleys and isolated mt. peaks, including Mt. Kenya, 17,040 ft. Forests cover over 4,500 sq. m., the commonest and most valuable trees being the pencil cedar and the camphor tree. Agricultural products include coffee, maize, wheat, sisal, rice, coconuts, cotton, sugar cane, and fruits. Carbonate of soda is obtained from Lake Magadi. Gold, graphite, marble, limestone, and manganese are among the minerals found. The exports include coffee, sisal, flax, maize, carbonate of soda, oil seeds, hides, wool, and rubber. Trade is largely with Great Britain, but India, the U.S.A., Japan, and Germany are strong competitors. Almost the whole trade passes along the Kenya and Uganda Rly., which runs from Mombasa through Nairobi to Kisumu on Lake Victoria, and its branches. There are aerodromes at Kisumu and Nairobi.

In 1930 the British Government, having considered two reports on the subject, suggested that Kenya, Tanganyika, and Uganda should be united under a high commissioner and form a dominion of E. Africa. His duties would include the power to suspend any legislation he thought objectionable, and upon instructions of the secretary of state to initiate any legislation considered necessary. A new legislative council was also proposed. The proposition met with a good deal of opposition.

KENYON, SIR FREDERIC GEORGE (b. 1863). British author and librarian. Born in London, Jan. 15, 1863, he was appointed an assistant in the British Museum in 1889. He became assistant keeper of MSS., 1898, and director and principal librarian in 1909, retiring in 1930. He edited the works of Robert Browning, and various classical texts.

KEPLER, JOHANN (1571-1630). German astronomer. Born at Weil in Württemberg, Dec. 27, 1571, he was admitted to the foundation of the University of Tübingen at 17, and in 1594 was appointed professor of mathematics and astronomy at Graz. In 1600 he went to Prague as assistant to Tycho Brahe, whom he succeeded the following year. During the next 25 years he was astronomer and mathematician to Upper Austria, 1612, at Ulm, 1626, where he published the Rudolphine Tables, and to Wallenstein, 1628. He died Nov. 15, 1630. His greatest works were *Astronomia Nova*, 1609, and *Harmonices Mundi*, Libri V, 1619, containing his three laws of planetary motion.

Kepler's Laws are: (1) The orbit of each planet is an ellipse with the sun occupying one focus. (2) The areas described by the radius vector of a planet are proportional to the time taken in describing them. (3) The squares of the periodic times of the planets are proportional to the cubes of their mean distances.

KEPPEL, AUGUSTUS KEPPEL, VISCOUNT (1725-86). British sailor. Second son of the 2nd earl of Albemarle, he was born April 25, 1725, and entered the navy at the age of ten. He accompanied Anson on his voyage round the world (1740-44), and was promoted commander on his return. In 1754 he was given the command of the N. American squadron. Rear-admiral in 1762, vice-admiral in 1770, and admiral in 1778, he was appointed commander-in-chief of the fleet, and gave the

French battle off Brest. The action was indecisive, and Keppel was court-martialled for misconduct and neglect of duty, but was honourably acquitted. M.P. for Windsor in 1761, 1768, and 1774, and for Surrey in 1780, in 1782 he was made first lord of the admiralty and a viscount. Keppel died Oct. 2, 1786.

A relative, Sir Henry Keppel (1809-1904), had also a long and distinguished career in the navy, chiefly in Chinese waters, where he put an end to piracy in 1841. He died Jan. 17, 1904.

KERATIN. Chief constituent of horn, hoofs, and feathers. Keratin, dissolved in ammonia, is employed for coating pills the medicinal effects of which it is desirable to delay for a certain time. See Horn.

KERENSKY, ALEXANDER FEODOREVITCH (b. 1881). Russian politician. Born at Simbirsk, he joined the Russian labour party. At the beginning of the revolution he became minister of justice in the government formed by Prince Lvoff in March, 1917. When the government was reconstructed he became minister of war and marine. He was the prime mover in the offensive in July, 1917, and in that month formed a coalition government, of which he was premier as well as minister of war.

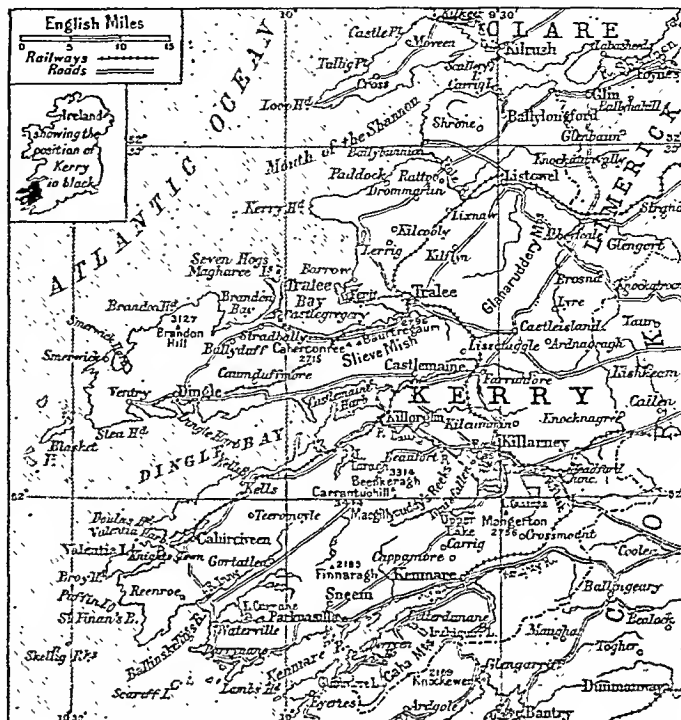
On Sept. 15 Kerensky proclaimed the Russian Republic, with himself as president of the provisional government and in chief command of all the Russian forces. During Oct. the power of the Bolsheviks increased, though Kerensky formed a new cabinet composed of socialists and moderates. Trotsky denounced this government, and on Nov. 8 he and Lenin carried out a coup d'état. Kerensky fled, eventually appearing in London in June, 1918. In 1919 he published a book entitled *Prelude to Bolshevism*. See Russia.

KERGUELEN LAND OR **DESOLATION ISLAND**. Uninhabited island in the S. section of the Indian Ocean (50° S., 70° E.). It was discovered by Kerguelen Trémarec in 1772, and annexed by France in 1893. Its area is about 1,400 sq. m. The Kerguelen cabbage is valued by mariners as a vegetable.

KERMES. Dye obtained from the dried bodies of female kermes insects. It has been displaced in modern times by cochineal, though still widely used in India and Persia. The kermes insect feeds on the kermes oak, *Quercus coccifera*, a hushy shrub with evergreen leaves. The size of a pea, the insects are extremely abundant in certain districts, and are killed with the fumes of boiling vinegar, afterwards being dried in the sun. The colouring matter, kermesic acid, dyes cloth a dark red.

Kermes mineral is the name applied to sulphurated antimony, an orange-red powder.

KERNAHAN, COULSON (b. 1858). British author. Born at Ilfracombe, Aug. 1, 1858, he first made a hit with *A Dead Man's Diary*,



Kerry. The Irish county which contains the lakes of Killarney and the loftiest mountains of Ireland. See below

1890. In the religio-imaginative sphere are to be noted his widely read booklets *God and the Ant*, 1895; *The Child*, the *Wise Man*, and the *Devil*, 1896; and *The Man of No Sorrows*, 1911. His novels include *Captain Shannon*, 1897, and *Scoundrels & Co.*, 1901. His best critical work is preserved in *Wise Men and a Fool*, 1901. Some of his many literary friendships are commemorated in *In Good Company*, 1917. Later works were *Celebrities*; *The Reading Girl*, 1925; and *The Garden of God*, 1928.

KEROSENE. Fluid hydrocarbon used for illumination. It is now prepared chiefly from petroleum, though bituminous coal and shales, fish oil, etc., have been used for its extraction. The flash-point, 150° C., makes the fluid safe under ordinary circumstances. Commercial kerosenes contain other hydrocarbons.

KERRY. County of the Irish Free State, in the prov. of Munster. With an area of 1,815 sq. m., its coast is penetrated by the Kenmare river, Dingle Bay, Brandon Bay, and Tralee Bay, and is fringed with islands, Valentia, the Blaskets, Skelligs, etc. There are plains of brown bog, pasture, and plough land, but the surface is generally picturesquely rugged and mountainous, Macgillycuddy's Reeks being a lofty range. The loughs include those of Killarney, Caragh, Currane, Inchiquin, and Glenmore. Agriculture and fishing are the chief industries. Tralee is the county town, others including Killarney and Listowel.

The county is rich in antiquities: Ogham stones, stone forts or cahers, beehive cells, chapels, the round tower at Rattoo, castles, abbeys, and cromlechs. Pop. 149,171.

KERRY CATTLE. Breed of native cattle found in S.W. Ireland. They are now of small size, averaging in weight about 900 lb. They are black in colour, but the cows often have a splash of white on the udder, while the skin is orange-coloured. Keries are chiefly valued as



Johann Kepler, German astronomer



A. F. Kerensky, Russian politician



Viscount Keppel, British sailor
After Reynolds

notable yielders of milk, but are also greatly esteemed for breeding purposes. See Cattle.

Earl of Kerry is the title borne by the eldest son of the marquess of Lansdowne (q.v.) The first holder was Thomas, Baron Fitzmaurice, who was created an earl in 1722. When the 3rd earl died in 1818 the title was inherited by Henry, 3rd marquess of Lansdowne.

KERTCH or **KERCH**. Town in the autonomous Soviet republic of Crimea, on the Strait of Kertch. Trade is done in wheat and furs, and there are soap, leather, and tobacco factories.

Kertch occupies the site of the ancient Milesian colony of Panticapaeum, afterwards the capital of the kingdom of Bosphorus. After belonging to the Genoese and Turks, it passed to Russia in 1773. It is rich in Greek archaeological remains. Pop. 26,000.

KESTEVEN. One of the three divisions of the county of Lincolnshire. Since 1888 it has been an administrative county with its own county council. The full name is the Parts of Kesteven. It is the central of the three divisions, and is watered mainly by the Witham. Its area is 733 sq. m. Pop. 108,237. See Lincolnshire.

Keston. Village of Kent. It is $3\frac{1}{2}$ m. S.E. of Bromley, and has a large and picturesque common. Pop. 1,029.

KESTREL or **WINDHOVER** (*Falco tinnunculus*). Group of small birds of the hawk tribe. The common kestrel is a resident in Great Britain and the lesser kestrel (*F. cenchris*) a rare visitor in spring and autumn. It is called windhover from its practice of hovering almost motionless in the air before swooping on its prey.



Kestrel, a small hawk

The plumage is brown, lightly barred with black, while the head, neck and tail are bluish grey. The average length of the bird is about 14 ins. The kestrel feeds almost entirely on mice and insects. See Hawk.

KESWICK. Market town and urban district of Cumberland. It stands on the Greta, 13 m. from Cockermouth, on the L.M.S. Rly. Situated at the lower end of Derwentwater, and overlooked by Skiddaw, it is within easy reach of the most beautiful scenery of the Lake District. Lead pencils are manufactured. Market day, Sat. Pop. 5,559. See Lake District.

KETCH. Two-masted vessel used in the coasting trade. A somewhat similar rig is also applied to a certain type of yacht. It is fore and aft rigged, with a short mizzen stepped forward of the rudder-post, while in the yawl the mizzen is abaft the rudder. In former days the ketch was rigged like a topsail schooner. It was then used mainly as a bomb vessel.

KETCH, JACK (d. 1686). English public executioner. He is notorious for his bungling executions of Lord William Russell in 1683 and of the duke of Monmouth in 1685. For a few months in 1686 he lost his position and was confined in the Bridewell, but was reinstated on his successor being himself hanged. His name has passed into common use as a nickname for any hangman.

KETTERING. Market town and urban district of Northamptonshire. It is 8 m. from Wellingborough, and 72 m. from London on the L.M.S. Rly. The Perpendicular church of

SS. Peter and Paul has a fine lofty spire. The main industries are the manufacture of boots and shoes, clothing, leather, etc. Kettering has a museum and art gallery presented by Sir Alfred East, and containing a collection of his works. In 1928 Wicksteed Park was opened as a public recreation ground. The town dates from Anglo-Saxon times, and was a thriving market town in the Middle Ages. Market day, Fri. Pop. 30,680.

KETTLE HOLE. Deep pot-shaped hole in rock attributed to glacial action. Potholes are found in Scandinavia, Switzerland, N. America, etc. The so-called glacial garden of Lucerne is famous for its kettle holes.

KEW. Suburb of London. In the borough of Richmond, with stations on the Southern and District Rlys., it is linked by King Edward VII Bridge, opened 1903, with Brentford. Near the centre of Kew Green, 13 acres, is the parish church of S. Anne, 1714.

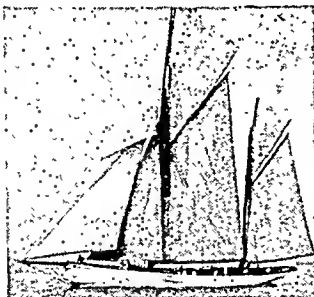


Kew Palace, once a residence of George III, now a public museum

Dutch House, now known as Kew Palace, built by the son of a Dutch refugee in 1631, was bought by George III in 1781. Opened to the public in 1899, it contains a number of souvenirs of George III and his family.

The Royal Botanic Gardens at Kew cover 288 acres, and were opened to the public in 1841. They contain museums, palm house, temperate house, Victoria regia house, herbarium, arboretum, library, and lake. The grounds of Queen's cottage, built by George III and opened to the public in 1897, form a sanctuary for wild birds. Within the grounds are upwards of 24,000 different species and varieties of plants systematically arranged. See Banks, Sir J.

Kew Observatory, which is under the control of the Meteorological Office, is in Old Deer Park, Richmond, and was built in 1768.



Ketch yacht under full canvas

KEY. Implement for shooting or withdrawing the bolt of a lock. The word is also applied to a tool used for turning a nut or coupling-piece, and for a piece of metal driven in between two parts of a machine or structure to secure them.

In architecture, a key is something that holds together the parts of a fabric, as the keystone of an arch.

In music, the word key denotes a group of scale-sounds so related as to give the ear a definite sense of their starting point. Key is also the old term for the signs of pitch now more commonly called clefs. The term key signature is given to the signs at the beginning of a musical stave which indicate the key or scale in which the music is written.

KEYES, SIR. ROGER JOHN BROWNLOW (b. 1872). British sailor. He entered the navy in 1885, and in 1912 became commodore in charge of submarines. In the Great War he took part in the battle of Heligoland Bight and in the raid on Cuxhaven, and as commander of the Dover



Sir Roger Keyes, British sailor

Patrol he carried out the naval raid on Zeebrugge and Ostend, April 23, 1918, after which he was knighted. Created a baronet in 1919, he was awarded £10,000 for his services. After the war he was commander-in-chief in the Mediterranean, and then at Portsmouth. In 1930 he was made an admiral of the fleet.

KEYHAM. District of Devonport, included in the borough of Plymouth. It is served by the G.W.R. Here the government has engineering works and facilities for repairing ships; also naval barracks. At the naval college cadets take their engineering course. See Plymouth.

KEYNE. Welsh or Cornish saint. She is said to have lived in Wales about 485, and to have removed to Cornwall, where a famous well bears her name. According to another account, Keyne was a daughter of Prince Brughan of Wales, and lived as a recluse in a wood near Bristol.

KEYNES, JOHN MAYNARD (b. 1883). British economist. Born June 5, 1883, he was educated at Eton and King's College, Cambridge, of which he became fellow and bursar. In 1906 he entered the India office. Transferred in 1915 to the Treasury, in 1919 he represented the Chancellor of the Exchequer in the peace negotiations in Paris. Disagreeing with the terms of the treaty, he left the civil service. Editor of The Economic Journal since 1912, his writings include the much-discussed The Economic Consequences of the Peace, 1919; The End of Laissez-Faire, 1926; and A Treatise on Money, 1929.

KEYS, HOUSE OF. Name of lower house of the legislature (or Tynwald) of the Isle of Man. It is composed of 24 commoners elected for seven years, on a property qualification, by male and female suffrage, to represent the six sheadings, or divisions, and the four municipalities of the island. The word Keys is by some derived from the Scandinavian keise (chosen). See Man, Isle of.

KEYSERLING, HEIMANN (b. 1880). German philosopher. Born in Livonia, July 20, 1880, he was educated at Geneva, Dorpat, Heidelberg, and elsewhere. His education made him a scientist, but his early writings were on art, from which he soon turned to metaphysics. In 1906 appeared The Structure of the World, and in 1910 Prolegomena to Natural Philosophy. His ideas became known in Britain through the publication in 1925 of The Travel Diary of a Philosopher. In 1919 he founded a society, the "School of Wisdom," at Darmstadt.



Keystone of an arch in position

Khafrā. Egyptian king of the 19th dynasty. The Chephren of Herodotus, he built the second pyramid of Gizeh. See illus. above.

KHAKI (Hind. dusty). Dust-coloured fabric worn by troops on active service. Introduced by Sir H. B. Lumsden, it was first used by the corps of guides in 1848. It was worn by British troops in the Indian Mutiny, the second Afghan War, 1878-80, the South African War, 1899-1902, and the Great War, on account of its comparative invisibility at a distance. Several other nations adopted it.



Khafra, king of Egypt, builder of second pyramid of Gizeh. See below Statue in Cairo Museum

Khaki College was the name given to a Canadian educational organization in the Great War. Established in 1917 at Witley, in Surrey, its aim was to help young Canadian soldiers to equip themselves for the return to civil life. A similar work for British troops was organized in France and England.

KHALIFA OR **KHALEEFA**. Arab word meaning successor, adopted as his title by Abdullah el Taashi, the successor in 1885 of the Mahdi (q.v.). Born in Darfur, he was one of the Baggara Arabs engaged in the slave trade who resisted the Egyptian annexation of his native province. His power was broken by Kitchener at Omdurman, Sept. 2, 1898. He escaped to Kordofan, but was overtaken Nov. 24, 1899, at Om Debrikah by Anglo-Egyptian forces under Sir R. Wingate. In the ensuing battle the khalifa was killed.

KHAN. Persian-Tartar word meaning lord. Jenghiz, the 13th century Mongol ruler, was the first to call himself khan. In central Asia certain governors of cities and provinces are called khans, e.g. the Khan of Kelat. Khan is also the name for an inn.

KHARKOV. Capital of the republic of the Ukraine. It stands on three small streams which fall into the Uda, a tributary of the Donetz, 250 m. S.E. of Kiev. An important rly. junction, it is situated in a populous and fertile district, and is famous for its fair (horses and wool). Pop. 417,000.

KHARTOUM OR **KHARTUM**. Capital of the Anglo-Egyptian Sudan. It stands at the junction of the Blue and the White Nile, 1,345 m. from Cairo. It is connected by rly. with Sennar, El Obeid, Port Sudan, and Halfa. The city proper is on the S. side of the Blue Nile, across which is Khartoum North, a bridge connecting the two. Omdurman, just outside Khartoum, was the Mahdist capital. Since 1898 Khartoum has been rebuilt on modern lines. The chief buildings include the Anglican cathedral, Gordon Memorial College, governor-general's palace, government offices, hospital, clubs, and barracks. There are public and zoological gardens, a racecourse, and golf links. Much of the trade of the Sudan passes through here.

Khartoum was founded in 1830 by Mehemet Ali, but destroyed by the Mahdists in 1885, when, Jan. 26, 1885, Gordon was killed; but the site was recovered by the British in 1898, after the battle of Omdurman. Pop. 31,965.



Khartoum. 1. Gordon statue. Bronze copy of the statue at Osham. 2. Gordon Memorial College

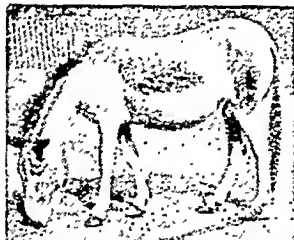
KHEDIVE (Pers. khidiw, prince). Title of the former viceroy of Egypt. It was granted in 1867 by the sultan of Turkey to Ismail Pasha, and existed until Dec., 1914, when Abbas II was deposed by the British and a sultan installed in his place. On March 16, 1922, the reigning sultan was proclaimed king as Fuad I. See Fuad; Ismail Pasha.

KHERSON. Town and port of Ukraine. It stands on the right bank of the Dnieper, 20 m. from its mouth and 90 m. N.E. of Odessa. Pop. 58,809. There is another Kherson, situated 2 m. W. of Sevastopol.

KHIVA OR **KHWARIZMI** (anc. Chorasmia). With Bokhara and Tadjik part of the Soviet republic of Uzbekistan. Between Bokhara and the Kara Kalpak Territory, its area is about 26,000 sq. m., and its pop. about 900,000. It includes the fertile Amu-Daria delta. Wheat, barley, millet, rice, and fruit, especially melons, are cultivated. The chief industries are pottery, silk, and textile fabrics.

KHYBER PASS. Pass through the Khyber Mts. connecting India and Afghanistan. Always of military importance, the defile is 33 m. in length, and in parts only 15 ft. wide. The road which traverses the pass from Peshawar to Kabul was made by the British. A railway from Jampur to the Afghan frontier was opened in Nov., 1925.

KIANG (*Asinus hemionus*). Largest species of wild ass, native of Tibet. Its



Kiang. Species of wild ass which is a native of Tibet. W. S. Berridge, F.Z.S.

KIAO-CHAU. Bay and territory of Shantung prov., China. As compensation for the murder of two German missionaries the territory, 193 sq. m. in area, was leased in 1898 to Germany for 99 years. Pop. 200,000. The name of the port and chief town is Tsingtau. Captured by Anglo-Japanese forces Nov. 7, 1914, and allotted by mandate of the League of Nations to Japan, Kiao-chau was restored to China in 1922.

KICKING HORSE PASS. Pass through the Rocky Mts., Canada. It is on the borders of British Columbia and Alberta, near Banff, and about 200 m. N. of the U.S.A. boundary. It is 5,300 ft. high, and a trans-continental line of the C.P.R. passes through it.

KIDBROOKE. District of London. In the metropolitan borough of Greenwich, it is 7 m. south of the city and has a station on the Southern Rly. Here the Royal Air Force has a station which commands the route along the Thames to London.

KIDD, WILLIAM (c. 1650-1701). Scottish pirate. Emigrating to Boston, Mass., he commanded a privateer in the wars of William III. Appointed in 1696 to assist in the suppression of piracy, he became a very active pirate himself. In 1699 he was captured at Boston and sent to England, where he was tried at the Old Bailey, sentenced to death, and hanged, May 23, 1701.

KIDDERMINSTER. Mun. bor. and market town of Worcestershire. It stands on the

Stour, 15 m. from Worcester on the G.W.R. The chief buildings are the fine parish church of All Saints, S. George's church, and the town hall. There are memorials to Richard Baxter and Rowland Hill. The main industry is the manufacture of carpets, for which the town has long been famous. Market day, Thurs. Pop. 27,118.

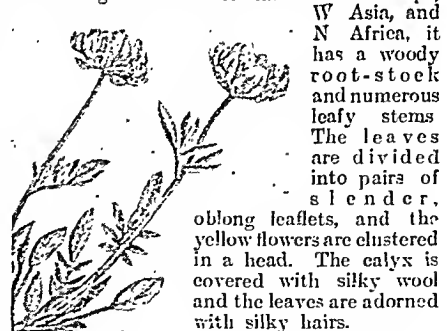
KIDNAPPING. The forcible or fraudulent carrying away of any person, especially a child. In English law it is punishable by fine or imprisonment, or, in the case of children, by penal servitude. The word, a compound meaning to nab a kid, was chiefly used for the offence, specially prevalent in the 17th century, of seizing children and taking them to America to work on the plantations. The legal term is abduction. See Abduction.

KIDNEY. Organ which abstracts the waste material from the blood in the form of urine. In man the kidneys, two in number, are situated one on each side

of the spinal column. Their average length is 4 ins., breadth 2½ ins., and weight 4½ oz. in the male, and a little less in the female.

On the internal border of the kidney is a fissure through which pass the renal artery, which runs from the aorta, the renal vein, which joins the inferior vena cava, and the ureter, which conveys urine to the bladder. Internally the kidney consists of two parts—the cortical substance and the medullary portion. See Bright's Disease.

KIDNEY VETCH OR **LADY'S FINGERS** (*Anthyllis vulneraria*). Perennial herb of the order Leguminosae. A native of Europe,



Kidney Vetch, or lady's fingers

W. Asia, and N. Africa, it has a woody root-stock and numerous leafy stems. The leaves are divided into pairs of slender, oblong leaflets, and the yellow flowers are clustered in a head. The calyx is covered with silky wool and the leaves are adorned with silky hairs.

KIDRON. Torment valley between Jerusalem and the Mt. of Olives, now known as the Wadi en Nar, or the valley of Jehoshaphat. It is dry during about nine months of the year.

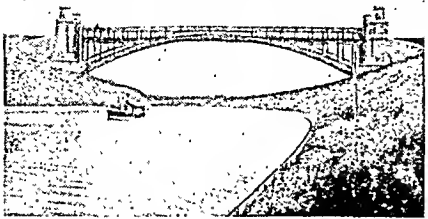
KIDSGROVE. Market town and urban district of Staffordshire. It is 6 m. N.W. of Stoke-upon-Trent, on the L.M.S. Rly. and on the Trent and Mersey canal. The chief industries are coal mining and iron-working. Market day, Tues. Pop. 9,491.

KIDWELLY. Borough and market town of Carmarthenshire. It stands on the Gwendraeth, near its entrance to Carmarthen Bay, 9 m. N.W. of Llanelly, with a station on the G.W.R. The castle, built in the 11th century, was one of the strongest in S. Wales. There are iron and tin works and collieries. Market day, Tues. Pop. 3,384.

KIEL. Port and town of Germany. At the southern end of Kiel Bay, 70 m. from

Hamburg, it has a splendid harbour, and till 1919 was the chief naval port and dockyard of the German empire. Its annual regatta was a leading social event. Pop. 213,881.

Kiel Bay is an indentation of the W. Baltic in the coast of German Slesvig-Holstein. Lying N.W. and S.E., it extends some 40 m. from Schleimünde to the island of Fehmarn.



Kiel Canal, where it is crossed by the high level railway bridge at Levensau

KIEL CANAL. Ship canal connecting the North Sea and the Baltic. Begun June 3, 1887, and opened June 19-21, 1895, it was widened and deepened 1909-14. It is 61 m. long, 45 ft. deep, 150 ft. wide, and cost approximately £19,000,000.

The double locks at Holtzenau and Brunsbüttel are among the largest in the world. The canal is electrically lighted, and the passage occupies 8½-9 hours. Just after the completion of its reconstruction the Great War began. In 1919 Germany agreed that the canal and its approaches should be for ever free to the ships of every nation at peace with her, and that the tolls and charges should be reasonable, levied without discrimination, and cover the expenses of working and maintenance.

KIESELGUHR. Grey or brownish earth formed by fossil diatoms, found chiefly as a deposit in fresh-water lakes. Containing 95 p.c. of silica, it has been largely used as an absorbent for nitroglycerin in the preparation of dynamite. It is also used as a polishing powder, for fireproof packing of boilers and steam pipes, and as an ingredient of soaps.

KIEV. Town in the republic of the Ukraine. It stands on the right bank of the Dnieper, at its junction with the Desna, 280 m. N. of Odessa, and is an important river junction. Founded in the 5th century, it is one of the oldest cities of Russia and the

birthplace of its Christianity. The cathedral of S. Sophia and the Cave Monastery date from the 11th century. A centre of the sugar beet industry and famous for its preserved fruits, Kiev has a trade in grain, timber, and cattle. During 1914-20 it changed hands repeatedly. Pop. 513,789.

KIKUYU. Province of Kenya, East Africa. The capital is Nyeri. Sweet potatoes, maize, and millet are cultivated.

Kikuyu was the scene of a missionary conference in June, 1913, when the bishops of Mombasa and Uganda aroused a protest by admitting those present, irrespective of their denomination, to communion. The Lambeth conference in April, 1915, decided that the action of the two bishops was irregular.

KILBIRNIE. Parish of Ayrshire, on the Garnock, 20 m. from Glasgow, with a station on the L.M.S. Rly. The chief building is the 16th century parish church. The industries include flax spinning and engineering. Here are the ruins of a 16th century castle, a seat of the earl of Crawford until destroyed by fire in 1757. Kilbirnie Loch is near. Pop. 8,032.

KILBRIDE OR **WEST KILBRIDE.** Watering place of Ayrshire, on Kilbride Burn, with a station on the L.M.S. Rly. It has two fine churches and institutions for invalids. Pop. 2,400.

In Scotland and Ireland are many other places of this name, which means the church of S. Bride. East Kilbride is a small town of Lanarkshire, 7 m. from Glasgow. Pop. 1,500. Kilbride Castle is near Dunblane.

KILBURN. Suburb of N.W. London. Partly in the parishes of Hampstead and Willesden, it has stations on the Met. and Bakerloo and L.M.S. Rlys., and includes West Kilburn and Kilburn Park. Near Belsize Road, on a spot adjoining the site of an Augustinian priory, which existed from 1376-1536, there was in the 18th century a spring, Kilburn Wells, the tea gardens attached to which existed from 1773-1829.

KILDARE. County of the Irish Free State. In the prov. of Leinster, its area is 654 sq. m. In the centre is the Curragh (q.v.). Kildare is drained by the Liffey, Boyne, and Barrow. The G.S. Rlys. and the Grand and Royal canals serve the county. Kildare (the co. town), Athy, Maynooth, Naas, and Newbridge are the chief places. Pop. 58,028.

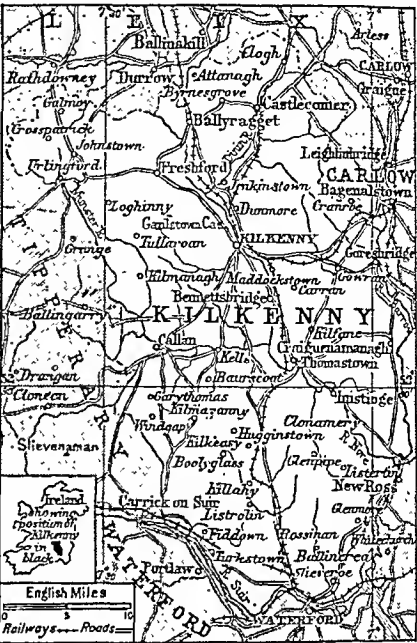
KILDARE. Co. town of co. Kildare, Irish Free State. It is 30 m. S.W. of Dublin on the G.S. Rlys., of which it is a junction. The cathedral was erected in the 13th century and restored in the 19th. A round tower still stands, 108 ft. high. The town has a trade in agricultural produce. Kildare owes its origin to S. Bridget, who, in the 5th century, founded a monastery here. The name means the church of the oak. Pop. 2,116.

The Kildare Street Club is a club, founded in 1788, in Kildare Street, Dublin.

KILIMA-NJARO OR **KILIMANDJARO.** Mountain mass in Tanganyika Territory, East Africa. It consists of two extinct volcanic peaks, connected by a massive ridge. The highest point is 19,325 ft. and the crater is about 650 ft. deep. The slopes are clad with a forest belt, and the summits with glaciers.

KILKENNY. County of the Irish Free State. In the prov. of Leinster, its area is 796 sq. m., and it is served by the G.S. Rlys.

The co. is essentially agricultural. Coal is mined in the Castlecomer dist. and black marble is quarried. Kilkenny (the co. town), Callan, Castlecomer, and Thomastown are the chief towns. There are antiquities. Pop. 70,990.



Kilkenny. Map of this agricultural county of Ireland

KILKENNY. City and co. town of co. Kilkenny, Irish Free State. It stands on the Nore, 81 m. from Dublin by the G.S. Rlys. The chief buildings are the cathedral of S. Canice (except S. Patrick's, Dublin, the largest in the Irish Free State) and the 13th cent. castle, successor of one built by Strongbow and the seat of the marquess of Ormonde. There are marble works, tanneries, and corn mills, and a trade in agricultural produce. The town is named after S. Canice, and is the seat of the bishop of Ossory. Pop. 10,046.

The statute of Kilkenny was a measure passed in 1366 by a parliament which met at Kilkenny. It provided that the laws of England should apply to Ireland. It forbade any English person to intermarry with the Irish or to adopt the Irish dress, language, or customs. It was ineffective outside the Pale.

KILLALOE. City of co. Clare, Irish Free State, 17 m. from Limerick, on the G.S. Rlys. The cathedral of S. Flannan is a 12th century edifice. Killaloe has both a Roman Catholic and a Protestant bishop. It is a centre for fishing in the Shannon, which here flows through a noted gorge. Pop. 904.

KILLARNEY (Celt. Cill Arne, church of the slopes). Urban dist. and town of co. Kerry, Irish Free State. It is 46 m. W. by N. of Cork, on the G.S. Rlys. Of the three churches the R.C. cathedral of S. Mary, 1846-56, is by A. W. Pugin. Pop. 5,328.

The famous lakes of Killarney are about 1½ m. W. of the town, lie in a basin, backed by lofty mts. and wildly picturesque ravines,



Kildare. Map of the inland county of S.E. Ireland



Kilima-Njaro Mountain. The summit of this extinct volcanic peak



Killarney. Ruins of Ross Castle in Lough Leane, the largest of the three lakes of Killarney

and are studded with thickly wooded islands. They are fed by the river Fiesk and discharge their waters from the Lower Lake by the river Laune. In the neighbourhood are Macgillycuddy's Reeks, the Gap of Dunloe, and several castles and other buildings of historic and romantic interest. The earl of Kenmare in 1930 announced his intention to sell his extensive property here.

KILLIECRANKIE. Pass of Perthshire. Killiecrankie station, on the L.M.S. Rly., is 4 m. from Pitlochry, whence the pass stretches for about 1½ m. to Garry Bridge. The river Garry flows through it, and it is beautifully wooded. It is traversed by a military road.

The plain at the north of the pass was the scene of the encounter in which, July 17, 1689, Graham of Claverhouse, Viscount Dundee, at the head of some Highlanders, routed a force sent by William III to subdue the Scottish Jacobites. Both sides lost heavily, and Dundee was mortally wounded.

KILLIGREW, THOMAS (1612-83). English dramatist. Born in London, Feb. 7, 1612, son of Sir Robert Killigrew, he was page to Charles I. and groom of the bedchamber to Charles II. In 1663 he built a theatre where Drury Lane Theatre now stands, and in 1673 was appointed master of the revels. Known as the king's jester, he died March 19, 1683, and was buried in Westminster Abbey.

Killingworth. Coal mining centre of Northumberland. It is 6 m. N.E. of Newcastle-upon-Tyne, on the L.N.E.R. Pop. 2,711.

KILLYLEAGH. Town and seaport of co. Down, Northern Ireland. It stands on Strangford Lough, and its chief industry is the manufacture of linen. Pop. 1,600.

KILMACOLM or **KILMALCOLM.** Watering place of Renfrewshire, Scotland. It stands on Gryfe Water, 8 m. S.E. of Greenock, with a station on the L.M.S. Rly. A health resort, it has a hydropathic establishment, golf links, and a public park. Pop. 5,303.

KILMAINHAM. Suburb of Dublin. It contains Kilmainham Prison and the royal hospital, founded in 1675 on behalf of Charles II by the earl of Granard, for the relief of veteran soldiers, and built by Wren. Kilmainham Prison is memorable as the place where Parnell and other Irish leaders were incarcerated, and as the place of execution of the leaders of the Sinn Féin rising which took place in Easter Week, 1916.

The Kilmainham treaty is the name given to an informal arrangement made in April, 1882, between W. E. Gladstone's government and the Irish leader, C. S. Parnell, Captain O'Shea acting as chief intermediary. Parnell promised on certain conditions to assist the authorities in bringing Ireland to order. Parnell and his imprisoned colleagues were released. The Irish secretary, W. E. Forster, resigned and the Phoenix Park murders followed. See Home Rule; Parnell, C. S.

KILMALLOCK. Market town of Limerick, Irish Free State. It is 21 m. S. of Limerick, on the G.S. Rlys. A stronghold of the earls of Desmond, it was a fortified place in the 17th century and earlier. A Dominican abbey was founded here about 1291, and there are some remains of this and of the town's fortifications. Pop. 971.

KILMARNOCK. Burgh of Ayrshire. It stands on Kilmarnock Water, 22½ m. from Glasgow, on the L.M.S. Rly. In Kay Park is a Burns memorial and museum. The industries include foundries, engineering, the making of hoots and shoes, cloth, carpets, blankets, and lace curtains. Coal is mined near by. An agricultural centre, Kilmarnock has a famous cheese fair. Pop. 35,911.

EARL OF KILMARNOCK. This is a Scottish title borne by the family of Boyd from 1661 to 1746, when the 4th earl, who had been taken

prisoner at Culloden, was executed with Lord Balmerino on Tower Hill. The title of Lord Kilmarnock is borne by the eldest son of the earl of Erroll. The 20th earl (b. 1876), when Lord Kilmarnock, was the first British diplomatic representative appointed to Berlin after the Great War.

Kilocycle. In electricity, a measurement of frequency, 1,000 cycles per second. It is abbreviated kc. See Cycle.

KILOGRAMME. Measure of weight in the metric system. It contains 1,000 grammes, and its equivalent in English weight is 2.2046 lb. Its usual symbol is kg.

KILOMETRE. Measure of length in the metric system. It is 1,000 metres, and its equivalent in English measure is 0.6214 of a mile, or approximately 5 furlongs, i.e. 1,100 yds. The square kilometre equals 0.3862 sq. m., or 247 acres.

KILOWATT. In electricity, a unit of power. It is the commercial unit by which electricity is sold, and the equivalent of 1,000 watt-hours. See Watt.

KILPATRICK. Two places in Dumbartonshire, Scotland. Old or W. Kilpatrick is on the Clyde, 10 m. from Glasgow, and is served by the L.N.E. and L.M.S. Rlys. It is traditionally the birthplace of S. Patrick.

New or E. Kilpatrick (or Bearsden) is a residential suburb of Glasgow. There are several places of this name in Ireland.

KILRUSH. Urban dist. and seaport of co. Clare, Irish Free State. On the N. shore of the Shannon estuary, 27 m. S.W. of Ennis, it exports peat and fuel, has a fishing industry, and has slate quarries. Market days, Wed. and Sat. Pop. 3,345.

KILSYTH. Burgh of Stirlingshire, Scotland. It is 13 m. N.E. of Glasgow on the L.N.E. Rly. Cotton is manufactured, and there are limestone and sandstone quarries and iron and coal mines. The Kilsyth Hills and a ruined castle lie N. Pop. 7,600.

The battle of Kilsyth was fought Aug. 15, 1645, when Montrose defeated the Covenanters under William Baillie, and as a result became for a short time dominant in Scotland.

KILWA or **KILWA KISIWANI.** Town in Kilwa prov., Tanganyika Territory, E. Africa. Formerly known by its Portuguese name of Quiloa, it was founded by Persians in the 10th century, and contains interesting ruins.

KILWINNING. Police burgh of Ayrshire, Scotland. It is 24 m. S.W. of Glasgow, on the L.M.S. Rly., and is a famous archery centre and the traditional birthplace of Scottish Freemasonry. The ruins of an abbey, founded 1140, remain. Eglinton Castle lies about 1 m. S.E. There are engineering works and a woollen factory, and, at Eglinton, iron and fireclay works and collieries. Pop. 5,404.

KIMBERLEY. Village of Nottinghamshire. It is 5½ m. N.W. of Nottingham on the L.N.E. Rly. The chief industries are brewing and the mining of coal. Pop. 5,158. Another Kimberley is a village in Norfolk.

KIMBERLEY. City of Cape Province, S. Africa. In Griqualand West, it stands on a plateau between the rivers Modder and Vaal, and has grown since 1870 round the De Beers diamond mines. It is 647 m. from Cape Town, and is connected by rly. with Bloemfontein. Anglicans and Roman Catholics have cathedrals, and there are several other churches. Kenilworth is a suburb mainly occupied by workers in the mines. Kimberley, formerly known as Colesberg Kopje, was renamed after the politician who was colonial secretary in 1871. Pop. 17,268 Europeans.

SEIGE OF KIMBERLEY. As soon as the war with the British began in Oct., 1899, the Boers swarmed round the town, which was defended

by about 4,000 men. Col. Kekewich was in command, and Cecil Rhodes was in the town. During the siege, which lasted from Oct. 14, 1899, till the arrival of French and his cavalry on Feb. 15, 1900, the British loss was 181 officers and men killed and wounded, in addition to some civilian casualties.

KIMBERLEY, JOHN WODEHOUSE. 1st EARL OF (1826-1902). British statesman. Born Jan. 7, 1826, at Wymondham, Norfolk, and grandson of Baron Wodehouse, he was educated at Eton and Christ Church, Oxford. Succeeding to his grandfather's title in 1846, and sitting as a Liberal in the House of Lords, he was foreign under-secretary 1852-56 and 1859-61 and minister at St. Petersburg 1856-58. He was lord-lieutenant of Ireland 1864-66 (when he was created earl of Kimberley); lord privy seal 1868-70; colonial secretary 1870-74 and 1880-82; secretary for India 1882-86 and 1892-94; and foreign secretary 1894-95. He died April 8, 1902. He married a daughter of the last earl of Clare, and was succeeded as 2nd earl by his son, John Wodehouse (b. 1848).

KIMBOLTON. Market town of Huntingdonshire on the L.M.S. Rly. The church of S. Andrew has memorials of the earls and dukes of Manchester, whose seat, Kimbolton Castle, was partly rebuilt by Vanbrugh. Market day, Fri. Pop. 900.

KIMMERIDGIAN. In geology, a subdivision of the Jurassic system, a member of the upper Oolite series. It is also called Kim-



Kimono. Japanese woman wearing this form of robe

meridge Clay from the hamlet in Dorset, England. A dark bluish bituminous clay, it is found extensively in Dorset, Yorkshire, and Lincolnshire, and is rich in fossil remains.

KIMONO. Loose robe of the Japanese. The sleeves are cut in one piece with the rest of the gown, which is embroidered. It has become popular in Europe as a dressing-gown.

KIN. Relations by blood. In English law, next-of-kin is the nearest blood relation of a deceased person. The method is to count one degree for each link in the chain, which starts from the deceased person. Thus, father and mother, and all children, are in the first, while grandparents and grandchildren, brothers and sisters, are in the second degree of kin. See Intestacy.



Kincardineshire. Map of the Scottish county between the Grampians and the North Sea

KINCARDINESHIRE. County of Scotland, known also as the Mearns. The Grampians (Mt. Battock, 2,555 ft.) occupy the W.

and central portions. In the S. is the Howe of the Mearns, part of the great valley of Strathmore. Agriculture is pursued in the valleys and around the coast, and there are deer forests and moors. Fishing is engaged in. The L.N.E. & L.M.S. Rlys serve the county. Stonehaven (the co. town), Bervie or Inverbervie, Laurencekirk, and Banchory are the chief towns. One member is returned to Parliament. The area of the county is 38,259 sq. m. Pop. 42,000.

The county has many interesting literary associations. The poet James Beattie was born near Laurencekirk. At Dunnottar, Scott met Robert Paterson, the Old Mortality of his novel of that name.

KINCHINJUNGA. Five-peaked mountain of the Himalayas. It is 75 m. E.S.E. of Mt. Everest, near the Nepal and Sikkim frontiers, and is 28,146 ft. high. Its name means the "five treasure houses of the great snows."

In 1929 an international scientific expedition set out to explore the range. It was led by a German, Prof. G. O. Dyhrenfurth, and three Britishers were among its members. Assistance was given by the Indian Government. The expedition was abandoned in 1930. The American Geographical Society also sent out an expedition. The name is spelled variously, one form being Kanehenjunga.

KINDERGARTEN (Ger. children's garden). School for children between three and seven, if possible in the open air. They are taught by games, physical action, and simple manual occupations, e.g. paper folding and cutting, modelling, colouring, drawing, music. See Froebel, F. W. A.; Montessori.

Kinderscout. Highest point of the Peak, Derbyshire. It is 2,088 ft. high. See Peak.

KINDERSLEY, SIR ROBERT MOLESWORTH (b. 1872). British banker. Born Nov. 21, 1872, and educated at Repton, he became chairman of Lazard Brothers & Co., bankers, and a director of the Bank of England. He was governor of Hudson's Bay Co., 1916-25, and senior British representative on the Dawes Committee, 1924. He was for four years chairman of the National War Savings Committee, and was awarded the K.B.E. in 1917 and G.B.E. in 1929.

KINEMATICS. Branch of mathematics that treats of motion without reference to force or mass. It defines velocity and acceleration, and finds formulae expressing the connexion between acceleration, velocity, distance travelled, and the time elapsed, and deals with such problems as the conversion of reciprocal to circular motion in an engine.

KINETICS. Branch of dynamics which deals with the motion of real bodies under the action of forces. The fundamental theorems deal with a single particle, and bodies that can be treated as such. First of the sections into which the science is divided is that dealing with the kinetics of a particle moving in a straight line. This section embraces Newton's laws of motion and the composition and resolution of forces. It is continued by the consideration of forces acting anywhere in a plane, and diverges to the general motion of a particle. Then it proceeds to the action of central forces the foundations of which were laid by Newton, and on which the phenomenon of gravitation and the movements of the planets are explicable.

On these fundamental theorems later mathematicians built a structure which included the kinetics of systems of particles and of rigid bodies, and which considered motions in two and three dimensions. In kinetics the theory of vibrations is also included. See Dynamics; Statics.

KINETIC THEORY OF GASES. Theory which supposes that in a gas the molecules are all

endowed with a forward or translatory movement, and that the spaces between adjacent molecules are large compared with the size of the molecules. Such molecules are continually coming into collision with one another and with the sides of any vessel in which the gas may be contained. See Gas.

KINETON. Village of Warwickshire. It is 9 m. from Stratford-on-Avon and 3 m. from Edgchill on the L.M.S. Rly. Near is the ridge on which the battle of Edgchill (q.v.) was fought.

KINETOSCOPE. Form of instrument for showing moving pictures. Invented by Edison in 1893, it consisted of a small cabinet in which a film was put in motion by hand or motor power. The actual film was viewed through a magnifying glass. See Cinematography; Film.

KING. Term of Teutonic origin used for a male ruler. It is the usual English translation of the Greek *anax* and the Latin *rex*. The word king or *eyning* was given to the petty rulers of the states of Anglo-Saxon England. Later in medieval Europe one country, one king, was almost the rule; and Germany and Italy were under an emperor who claimed the right to create kings.

This power, however, was rarely exercised, and hardly any kings were created in Europe for some 500 years after the rulers of Bohemia and Hungary had taken the title. The creation of Frederick, elector of Brandenburg, as king of Prussia in 1701 was an exception. Kings were created for Saxony, Bavaria, Württemberg and the Netherlands at the settlement of 1815, and later new kings appeared elsewhere in Europe. With some of these the territorial idea came to the front, and Louis Philippe called himself king of the French, George king of the Hellenes, and Leopold king of the Belgians. A group of kings, Greece being the first, owed their existence to the creation of independent states in the Balkans: Serbia, Rumania, Bulgaria, and Montenegro. At the close of the Great War several of the European kings disappeared.

KING, EDWARD (1829-1910). British prelate. A son of the Rev. Walter King, rector of Stone, Kent, he was born Dec. 29, 1829. Educated at Oriel College, Oxford, he was canon of Christchurch and regius professor of pastoral theology at Oxford in 1873 and bishop of Lincoln from 1885 till his death on March 8, 1910. A friend and follower of Pusey, King was prosecuted for ritualistic practices which led to the Lincoln judgment (q.v.). He exercised a great influence in Oxford.

KING, WILLIAM LYON MACKENZIE (b. 1874). Canadian statesman. Born Dec. 17, 1874, at Berlin (now Kitchener), Ontario, the son of a lawyer, he was educated at Toronto University. A great authority on labour problems, he edited the Labour Gazette for eight years, entered the Dominion parliament in 1908, and was minister of labour 1909-11. In 1911 King succeeded Laurier as leader of the Liberal party, and in 1921 he became premier. He retained his position until July, 1926, and returned to it after a general election in Sept. He remained in office until the general election of July 1930, when his party was defeated. He has written several books. See Canada.



W. L. M. King, Canadian politician

KING BIRD or BEE MARTIN (*Tyrannus carolinensis*). Species of American flycatcher. Its plumage is blackish on the upper parts, with white and grey beneath, and the crown of the head is yellow. It is common in many parts of the U.S.A., and feeds mainly on insects, catching them on the wing. See Flycatcher.

KING CHARLES SPANIEL. Breed of toy dog which came into favour in Charles I's reign. It was liver and white in colour, and sharp-nosed, but in the 19th century the fashionable King Charles was black and tan and pug-nosed. It is between 7 lb and 10 lb. in weight. The skull should be domed and the eyes full. The ears long and drooping and close to the body. The coat is thick and silky, the legs and tail being well feathered. See Dog.



King Charles Spaniel, Champion Laureate, the winner of many prizes

KING CHRISTIAN IX LAND. Part of S.E. Greenland. It lies S. of King William Land and N. of King Frederick VI Land, intersected by the Arctic Circle. Its coastline is deeply cleft by the Bay of Terrors and numerous fiords, and its interior is perpetually covered by an ice-sheet.



King Crab (*Limulus*). Above, in natural position; below, lying on its back

KING CRAB (*Limulus*)

A marine arthropod whose body, apart from the spike-like tail, is almost covered by a large shell or carapace. King crabs occur on the E. coast of the U.S.A., off China and Japan, and around the Indo-Pacific islands. Unable to swim, they are found in comparatively shallow water, crawling on the bottom. At times they bury themselves in the mud, the tail being used as a prop to assist in changing position. The eggs are deposited in the sand at high tide mark.

King Cup. Variant name of the marsh marigold. See Marsh Marigold.

KING EDWARD VII. Name-ship of a group of battleships, the last built before the Dreadnoughts were designed. She was launched at Devonport in 1903 and completed in 1905 at a cost of £1,382,075. She served continuously as a flagship. On Jan. 9, 1916, she struck a mine in the North Sea and had to be abandoned, all on board being saved.

KING EDWARD VII LAND. Part of the Antarctic, S.E. of the Ross Sea. The Ross Ice Barrier connects it with Discovery Island. Ross was there in 1842 and Scott in 1902.

KINGFISHER (*Alcedinidae*). Family of birds of handsome appearance, and with powerful, dagger-like beaks. Great Britain has only one species (*A. spida*). The back is azure blue, the tail deep blue, the wing coverts dark green spotted with cobalt, the throat white, and the underparts yellowish chestnut. It is from 6 ins. to 7 ins. in length, and has red legs and feet. Fairly common about the rivers



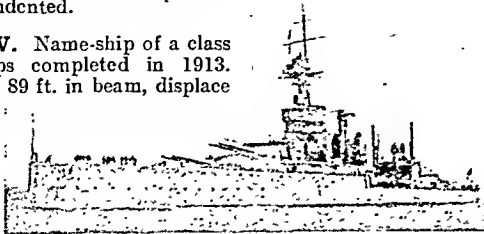
Kingfisher. Specimen of the British species
W. S. Burridge, F.Z.S.

in S. England, it feeds on small fish, insects and, on the coast, small crabs. The nest is constructed at the end of a tunnel, usually in the bank of a stream.

KING FREDERICK VI LAND. S.E. portion of Greenland, stretching N. from Cape Farewell to King Christian IX Land. The coast is cleft by fiords and fringed by several islands. It is sparsely populated.

The N.E. littoral of Greenland, between Germania Land on the S. and Amdrup Land on the N., is called King Frederick VIII Land. It is much indented.

KING GEORGE V. Name-ship of a class of British battleships completed in 1913. They are 555 ft. long, 89 ft. in beam, displace 23,600 tons, and have engines of 27,000 h.p. giving a speed of 21 knots. Their armament consists of ten 13.5-inch, twelve 4-inch, and four 3-pounder guns, and several torpedo tubes. Ships of this class were the King George V, Ajax, and Centurion. The King George V, which fought at Jutland, and Ajax have been removed from the active list.



King George V. British battleship of 1913 class. She served in the Battle of Jutland, 1918.

KING GEORGE V LAND. Tract of the Antarctic due S. of Tasmania, between Adelie Land and Oates Land. The coastline is broken by many capes and bays and the tract contains the great Ninnis Glacier.

KINGHORN. Burgh of Fifeshire, Scotland. It stands on the Firth of Forth, on the L.N.E.R. Here, on March 12, 1286, King Alexander III fell over the cliffs and was killed. Pop. 2,425.

KINGLAKE, ALEXANDER WILLIAM (1809-91). Historian of the Crimean War. Born at Taunton, Aug. 5, 1809, he was educated at Eton and Trinity College, Cambridge, and became a barrister. His experiences in the East led him to write his *Eothen*, and his interest in military matters took him in 1845 to Algiers. In 1854 he was in the Crimea. From 1857-68 he was M.P. for Bridgwater. He died in London, Jan. 2, 1891. He is chiefly known for his *History of the Crimean War*.

KING OF ARMS. The chief herald (q.v.) or officer of armoury. Kings of arms were first known as kings of heralds, but Henry IV changed the title. Three (Garter, Clarenceux, and Norroy) are members of the College of Arms (q.v.). Bath king of arms was instituted in 1725 as herald to the order of the bath. In Scotland the chief herald is the Lord Lyon king of arms; in Ireland, the Ulster king of arms. All are entitled to wear coronets, composed of a circlet surmounted by sixteen oak leaves, collars of S.S., and armorial tabards, and to bear sceptres, or batons surmounted by crowns.

KING OSCAR LAND. S.W. portion of Ellesmere Island (q.v.), British N. America. The coast is deeply indented and bordered by numerous islands.

King Oscar II Land is an icebound part N. of Graham Land and between the Bellingshausen and Weddel Seas.

KINGS. Books of. Two books of the O.T. They are called in the Septuagint (cod. Vat.) the Third and Fourth Books of Kingdoms and in the vulgate the Third and Fourth Books of Kings (our 1 and 2 Samuel being in each case the First and Second Books). They contain a history of the Hebrew kings from the accession of Solomon (c. 970 B.C.) to the end of the monarchy in 586 B.C. The books in their present form are composite. See Bible; consult also Introduction to the Literature of the O.T., S. R. Driver, rev. 1910.

KING'S BENCH DIVISION. Division of the high court of justice, which consists of the lord chief justice of England as president and 17 judges. The title preserves the name of the court of king's bench, so called because the king formerly sat there in person on a raised bench, with the judges who determined the cases sitting on a low bench at his feet.

KINGSBRIDGE. Market town, seaport, and urban dist. of Devonshire. It stands at the head of Salcombe Bay, 15 m. from Dartmouth, on the G.W.R. It has an old church, S. Edmund's, and a town hall with a museum. Its grammar school was founded in the 17th century. There is a shipping trade and a little shipbuilding. In the Middle Ages Kingsbridge was a centre of the woollen

manufacture. It still has a fair and is famous for its ale. The parish includes Dodbrooke. Here John Wolcot, known as Peter Pindar, was born. Market day, Wed. Pop. 2,945.

KINGSBURY. Urban district of Middlesex. It is N. of Wembley and Neasden. West of that part of the Edgware Road known as Watling Street is Kingsbury Green. The parish church of Kingsbury-cum-Neasden, S. Andrew's, restored in 1870, has some old monuments and brasses. Pop. 5,000.

KINGSCLERE. Parish of Hampshire noted for its racing stables. The Norman church of S. Mary is a fine building. The industries include brewing and malting. Burghclere, 4 m. away, is the station, and in the vicinity is Highclere Castle, a seat of the earl of Carnarvon. Pop. 2,243.

KING'S COLLEGE. College of Cambridge University. It was founded in 1441 by Henry VI. The chapel, the foundation

stone of which was laid on July 25, 1446, is probably the finest example of ornate Perpendicular architecture in existence. The society consists of a provost, 46 fellows, and 48 scholars. See Cambridge.

KING'S COLLEGE.

College of the university of London since 1910. It was established in 1829, reorganized in 1908, and includes the faculties of arts, laws, medicine, science, engineering and economics. The buildings are in and near the Strand, as are those of King's College for Women, established in 1881, incorporated with the university of London in 1910 and possessing a household and social science department at Campden Hill. See London, University of.

KING'S COLLEGE HOSPITAL. Institution at Denmark Hill, London. Founded in 1839 close to Clare Market, it was removed to Denmark Hill in 1913. There are 384 beds.

KING'S COLLEGE SCHOOL. English public school. Founded in 1829 as the junior department of King's College, London, it was removed to Wimbledon in 1897 and separated from the college in 1908.



King's College, Cambridge. The chapel from the Backs. Felton

KING'S COUNSEL. In England a member of the bar appointed by the crown on the nomination of the lord chancellor, in Scotland on the recommendation of the lord justice-general. A K.C. wears a silk gown, and is thus frequently called a silk. He takes precedence over the junior bar, and in a case must have a junior barrister with him. When a queen is on the throne he is called Q.C.

King's County. County of the Irish Free State, now known as Offaly (q.v.).

KING'S CROSS. District of London. It is in the bor. of St. Pancras, and was formerly known as Battle Bridge, from a bridge which crossed the Fleet river and the tradition that here was fought a battle between the forces of Suetonius Paulinus and those of Boadicea. It was renamed King's Cross in 1836. Here is the terminus of the L.N.E.R., built in 1852, and near by are the St. Pancras terminus of the L.M.S., the Midland Grand Hotel, and stations of the Metropolitan, S. London (Tube), and Piccadilly (Tube) Rlys.

KING'S CUP. British air race. Instituted in 1922 by the Royal Aero Club, it is flown over a course of some 700 m. in England for the Challenge Cup presented by King George. In July, 1930, over a course of 753 m., it was won for the first time by a woman, Miss Winifred S. Brown.

King's Evidence. In English law, name applied to a criminal who volunteers to give evidence against his accomplices.

KING'S EVIL. Old name for scrofula (q.v.). It is derived from the fact that at one time the touch of the king was supposed to cure this disease.

KING'S INN. Headquarters of the Irish Free State bar, corresponding to the inns of court in London. The building, erected in 1800, is in Henrietta Street, Dublin, and the society possesses a valuable library of 93,000 volumes. See Barrister; Inns of Court.

KINGSLAND. District of N. London, partly in the bor. of Shoreditch and partly in that of Hackney. The Kingsland Road runs N. from Shoreditch station, on the L.M.S. Rly. to Dalston Junction and Kingsland High Street.

KINGSLEY, CHARLES (1819-75). British novelist, poet, and social reformer. Born at the vicarage of Holne, Devonshire, June 12, 1819, he was educated at King's College, London, and Magdalene College, Cambridge. He was rector of Eversley (q.v.), Hampshire, from 1844 till his death, Jan. 23, 1875. He was professor of modern history at Cambridge in 1860, and canon of Westminster in 1873. His passionate sympathy for the poor found expression in *Alton Locke* and *Yeast*, two novels published in 1849. His other works included *Hypatia*, 1853; *Westward Ho!*, 1855; *The Heroes*, 1856; *The Water Babies*, 1863; *Hereward the Wake*, 1866; and a number of Ballads.

KINGSLEY, HENRY (1830-76). British novelist. Born at Barnack, Northamptonshire, Jan. 2, 1830, a younger brother of Charles Kingsley, he left Oxford for the Australian goldfields, where he remained five years. Of his many novels the best are *Geoffrey Hamlyn* and *Ravenshoe*. He died at Cuckfield, Sussex, May 24, 1876.

KINGSLEY, MARY HENRIETTA (1862-1900). British traveller and author. Born in London, Oct. 13, 1862, and a niece of Charles Kingsley, she is remembered by her *Travels in W. Africa*, 1897. She died at Simon's Town, June 3, 1900.



Charles Kingsley. British novelist. Stereoscopic Co

KING'S LYNN, LYNN REGIS, OR LYNN Borough, seaport, and market town of Norfolk. It is near the Wash, on the L.N.E. and L.M.S. Rlys. Of the churches, St Margaret's contains some 14th century brasses. In the Guildhall is the Red Register of Lynn. In the grammar school Eugene Aram (q.v.) was an usher. Other notable features are the Grey Friars' Steeple and the octagonal Rood or Red Mount Chapel, 1482. There is a good harbour. There is a trade in timber, coal, corn, and oilcake. Market day, Tues. Pop. 19,975.

KING'S MESSENGER. Name given to officials of the British Foreign Office who carry confidential messages. Their badge of office is a silver greyhound.

KING'S OWN, in full THE KING'S OWN ROYAL REGIMENT (LANCASTER). Regiment of the British Army. Originally the 4th Foot, it was raised in 1680. It went with William of Orange to Ireland and then to Flanders, and in 1715 received the title of The King's Own (Royal Lancaster Regiment); this was changed to its present form in 1920. The regiment was engaged in the Peninsular War, at Waterloo, in the Crimea, the Indian Mutiny, Abyssinia, 1868, the Zulu War, 1879, and saw service in the South African War.



In the Great War the 1st battalion took part in the battles of Mons, the Marne, the Aisne, and Ypres. Other battalions fought at La Bassée in 1915, in the battle of the Somme, 1916, at Cambrai, 1917, and endured the brunt of the German offensive in March, 1918. The King's Own were in Mesopotamia, 1916-18. The regimental depot is at Lancaster.

KING'S OWN SCOTTISH BORDERERS. Regiment of the British army. Formerly the 25th Foot, it was raised in 1689, in Edinburgh, by Lord Leven, and has a distinguished service record. During the Great War the 1st batt. was in Gallipoli and the 2nd in France. The regiment has the privilege of beating up for recruits in the streets of Edinburgh. The depot is at Berwick-on-Tweed.



King's Own Scottish Borderers badge

KING'S PRIZE. Sum of £250 presented yearly by the British sovereign, and awarded to the highest scorer with the rifle at various ranges under specified conditions. Known till 1901 as the Queen's Prize, it was first shot for at Wimbledon in July, 1860. Capt. Edward Ross was the first winner. In 1890 the meeting was transferred to Bisley (q.v.). In 1919 the King's Prize was thrown open to members of the forces throughout the Empire. The winner in 1928 was Lance-Corporal A. C. Haie, of Birmingham. In 1929 it was won by a Canadian, Colonel R. M. Blair, and in 1930 for the first time by a woman, Miss M. E. Foster.

KING'S PROCTOR (Lat. procurator, agent, deputy). In England, a legal official who acts in the name of the crown in divorce cases. If he is informed, before a decree has been made absolute, that the suit is collusive, or that the «successful» petitioner is, or has been, living in adultery, he lays the facts before the court, with the result, as a rule, that no divorce is granted. See Divorce.

KING'S REMEMBRANCER. In England, a legal official. Originally he was one of the officials of the exchequer, but the judicial changes of 1873 made him a master of the supreme court. See Exchequer.

KING'S SPEECH. The speech with which in Great Britain the king (or his deputy) opens each session of parliament. Prepared by the king's ministers, the speech outlines their programme. It is addressed in the first place to the lords and commons, only the last paragraphs, dealing with finance, being addressed to the House of Commons alone. The ceremony takes place in the House of Lords, to which the faithful Commons are summoned. See Address. Parliament.

KINGSTON. City and seaport of Ontario, Canada. Named after George III and from 1841-44 the capital of Canada, it stands at the E. end of Lake Ontario and is served by the C.P.R. and National Rlys. The Rideau canal connects it with Ottawa. There are two cathedrals, a university, and the Royal Military College. Shipbuilding and engineering works are among the industries, and there are flour mills and grain elevators. Kingston is on the site of the Frontenac fort, built by the French. Pop. 25,000.

KINGSTON. Capital and chief port of Jamaica. On the S.E. coast, at the head of an excellent landlocked harbour, it is nearly



Kingston, Jamaica. King Street, the principal thoroughfare. By courtesy of the West Indian Committee.

centred, is fortified, well built, lighted by electricity, and has electric tramways. An extensive import and export trade is carried on. In the old church lie the remains of Admiral Benbow. Kingston was founded between 1693-1703, and was made the capital in 1872. It was almost destroyed by an earthquake, Jan. 14, 1907. Pop. 63,000.

KINGSTON - ON - SOAR. Village of Nottinghamshire. It stands on the L.M.S. Rly. Here, in the centre of an important dairying district, is the Midland Agricultural and Dairy College, opened in 1900, and connected with University College, Nottingham. Pop. 300.

Kingston-upon-Hull. Official name of the city, port, and ex. bor. of Hull (q.v.).

KINGSTON-UPON-THAMES. Market town and bor. of Surrey. Standing on the S. side of the Thames, it is 12 m. S.W. of London. The hor. includes Surbiton, Norbiton, and New Malden, and is within the metropolitan police area. It is served by the S.Rly. The principal building is the Perpendicular church of All Saints. There is an old grammar school in a modern building. A fine bridge crosses the river. The chief industries are flour mills, breweries, and oil refineries. About 838 Egbert held a council here. In St Mary's Chapel, which fell down in 1730, some of the Saxon kings were crowned, and the coronation stone is preserved near the market place. In 1930 the Surrey Assizes were transferred from Guildford to Kingston. Market days, Mon. and Sat. Pop. 40,000.

KINGSTOWN. Seaport, holiday resort, and urban dist. of co. Dublin, Irish Free State. It is on the S. side of Dublin Bay, 6 m. from Dublin, with a station on the G.S. Rlys. Tramways and buses connect it with the metropolis. It is the port of departure and arrival for steamers between Ireland and Holyhead. Pop. 18,987. The Irish call it Dun Laoghaire (Pron. Dunleary).

KINGSWAY. London thoroughfare connecting Holborn with Aldwych. The Stoll

Picture Theatre and Kingsway Hall, headquarters of the West London (Wesleyan Methodist) Mission, are in this thoroughfare. The Kingsway Theatre is a few yards down Great Queen Street. See Aldwych.

KINGSWINFORD. Rural district of Staffordshire. Its chief industries are coal and iron mining and the manufacture of iron goods, bricks, glass, etc. In Anglo-Saxon times it was the king's property. Pop. 22,057.

KINGSWOOD. District of Surrey. It is 3½ m. from Reigate, and consists of Kingswood proper and Lower Kingswood. There is a station, Kingswood and Burgh Heath, on the Southern Rly.

KINGSWOOD. Urban dist. of Gloucestershire. It is 3½ m. from Bristol. Boots and shoes are made, and in the neighbourhood are coal mines. The district was once known as Kingswood Forest. Pop. 12,957.

KINGUSSIE. Burgh of Inverness-shire, Scotland. It is on the left bank of the Spey, 46 m. S. of Inverness, on the L.M.S. Rly. and is a summer resort. Pop. 1,202.

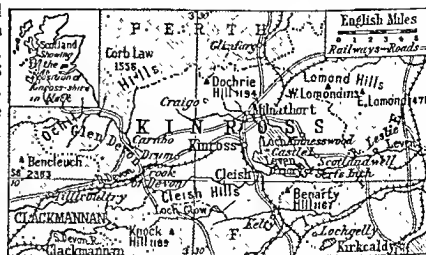
KING WILLIAM'S TOWN. Town of Cape Province, S. Africa. It stands in a pastoral area on the river Buffalo 42 m. W. of East London. It was founded in 1835, and named after William IV. It is known usually as King. Pop. 6,444 Europeans.

KINKAJOU (*Cereuleptes caudivolvulus*). Small carnivorous mammal of the racoon family. Found in Central and tropical S. America, it is long and catlike in body, and has a remarkably long prehensile tail. Its soft fur is yellowish brown in colour, and its size is that of a small cat.

KINMEL PARK. Estate in Denbighshire, Wales. About 4 m. S.S.W. of Rhyl it was a military camp during the Great War, and became a dispersal centre for the demobilisation of Canadian soldiers. In 1929 Kinmel Park was opened as a public school to prepare boys for positions in the world of business.

KINO. Astringent gum, used in medicine, tanning, and dyeing. Indian kino which is that of the pharmacopoeia, is obtained by incisions in the bark of *Pterocarpus marsupium*, an Indian tree of the natural order Leguminosae. Another species *P. erinaceus*, affords African kino. Bengali kino is obtained from the dhak (*Butea frondosa*). Kino is used medicinally for gargling mixtures, and commercially in the manufacture of wines and as a cotton dye. It is brittle, has a dark red colour, and is soluble in alcohol.

KINROSS. Burgh of Kinross-shire, also the county town. It stands on the W. side of Loch Leven, with two stations on the L.N.E.R. The town was a royal residence in the 13th century. Pop. 2,631.



Kinross-shire. Map of the county which, save Clackmannan, is the smallest in Scotland.

KINROSS-SHIRE. County of Scotland. With an area of 82 sq. m. it lies between Fife and Perthshire. Loch Leven (associated with Mary Queen of Scots) is in the co., which has several small rivers—one, the Devon, dividing it from Perthshire. Much of the soil is under cultivation, and cattle and

sheep are reared. The L.N.E.R. serves the county. Kinross and Milnathort are the only towns. It unites with a division of Perthshire to send a member to Parliament. Pop. 7,963.

KINSALE. Seaport, urban district, and watering place of co Cork, Irish Free State. It stands at the head of Kinsale Harbour, 24 m. by rly S. of Cork on the G.S. Rlys., and is a fishing centre. The harbour is formed by the estuary of the Bandon river. On the E. side is a lighthouse. Off the Old Head of Kinsale, a headland of Courtmaesher Bay, the Lusitania was sunk, May 7, 1915. Pop. 2,747.

KINSHASA OR **KINSHASSA.** Port of the Belgian Congo. On Stanley Pool close to Léopoldville, it is connected by rly. with Matadi. Here is a wireless station.

Kintyre OR **CANTYRE.** Peninsula forming the extreme S. of Argyllshire, Scotland. On the Mull of Kintyre is a lighthouse.

KIPCHAK. Nomad people of Altaian stock in central Asia. Numbering about 60,000 in Ferghana, they are a moslemised tribe of the middle horde of the Kirghiz-Kazak. They represent the White Hordo or E. Kipchak, which flourished in the 13th-14th centuries until disintegrated by Timur.

KIPLING, RUDYARD (b. 1865). British novelist and poet. Born Dec. 30, 1865, at Bomhay, Kipling early showed literary promise, his first book, *Schoolboy Lyrics*, appearing in 1881. From 1882 to 1889



Rudyard Kipling, British novelist and poet
Hoppé

he was in India engaged in journalistic work. A prolific writer, his early prose works include *Plain Tales from the Hills*, 1887; *Soldiers Three*, 1888; *Under the Deodars*, 1888; *Wee Willie Winkie*, 1889; *The City of Dreadful Night*, 1891.

Kipling's first and only long novel, called *The Light That Failed*, appeared as a number of Lippincott's Magazine, 1890, and with a different ending in volume form, 1891. In rapid succession came two of his best collections of stories, *Life's Handicap*, 1891; and *Many Inventions*, 1893; and his best-known volume of verse, *Barraek Room Ballads*, 1892. In 1894 and 1895 came the two *Jungle Books*, in 1896 a volume of verse, *The Seven Seas*. *Stalky and Co.*, 1899, was followed by *Kim*, 1901; *Just So Stories*, 1902; *The Five Nations*, 1903; another volume of verse; and *Traffics and Discoveries*, 1904. *Puck of Pook's Hill*, 1906, and its sequel, *Rewards and Fairies*, 1910, are new interpretations of old England in many phases.

During the Great War, in which his only son John was killed, he produced *The New Army in Training*, 1914; *France at War*, 1915; *Fringes of the Fleet*, 1915; *Sea Warfare*, 1916. *Collected Verse* appeared in 1922; and in 1923 *History of the Irish Guards in the Great War*. Among his later works were *A Diversity of Creatures*, 1917; *The Years Between* (verse), 1918; *Debts and Credits*, 1926; and *A Book of Words*, 1928. In 1907 he was awarded the Nobel Prize for Literature.

KIRCHHOFF, GUSTAV ROBERT (1824-87). German astronomer. Born March 12, 1824, at Königsberg, he became professor of physics and mathematics at Berlin University in 1874. He did important work on the theory of the conduction of heat, and in optics. While at Heidelberg in 1859, working in cooperation with Robert Bunsen, he discovered the

spectroscope and laid the foundation of spectrum analysis in Kirchhoff's Law on the relation of emission and absorption. He died in Berlin, Oct. 17, 1887.

KIRGHIZ. Nomad peoples of Altaian stock, mostly in central Asia. One-eighth of them comprise the true or Kara-Kirghiz—black-capped—of the Pamir and Tianshan highlands. The rounder-headed, more Mongoloid, steppe-dwelling Kazak-riders are called by the Russians Kirghiz-Kazak to distinguish them from the lowland Slav Cossacks. Essentially herdsmen, they often cover 2,000 m. in their annual migrations. The Kirghiz Republic is an autonomous republic of Soviet Asia, to the S.E. of the Kazak Republic. The capital is Kara-Kol (Przevalsk). Its area is about 95,000 sq. m., and its population is 997,441.



Kirghiz. Type of this nomadic race

KIRJATH OR **KIRJATH-JEARIM** (Heb. city of woods). Town to the N. of the land of Judah, near Beth-Shemesb. Here the Ark of the Covenant was kept till provision could be made for it in Jerusalem (2 Sam. 6; 1 Chron. 13).

Kirjath or Kirjath-Sepher (Heb. city of the book) is an older name (Josh. 15, 15; Judges 1, 11) for the Canaanitish town of Debir, lying S.W. of Hebron.

KIRK (Gr. kyriakon). Name given chiefly in Scotland to a church. More particularly, kirk, in official use, was the name given to the Church of Scotland before the Westminster Assembly (1643). Afterwards it was usually given to that Church as distinguished from the Church of England, Roman Catholic Church, and the Scottish Episcopalian Church.

Kirk session in Scottish eccles. law is the lowest church court in the Church of Scotland. It consists of the minister, who is called the moderator, and laymen known as elders. See Presbyterianism; Scotland, Church of.

KIRK, SIR JOHN (1832-1922). British administrator. Born near Arbroath, Dec. 19, 1832, he graduated in medicine at Edinburgh. During the Crimean War he served on the medical staff in Turkey, and in 1853 accom-

panied Livingstone on his second expedition to Africa. In 1866 he was attached to the political mission at Zanzibar, becoming consul-general in 1873, and acting as agent from 1886-87. Knighted in 1881, he was appointed British plenipotentiary at the Slave Trade conference held at Brussels, 1889-90, and later he was commissioner to the Niger coast. He died Jan. 15, 1922.

KIRKBY-IN-ASHFIELD. Urban dist. of Nottinghamshire. It is 13 m. from Nottingham, and is served by the L.M.S. and L.N.E. Rlys. The chief industry is coal mining. S. Winifred's is the principal church. Pop. 17,237.

KIRKBY LONSDALE. Urban dist. and market town of Westmorland. It is on the Lune, 12 m. from Kendal, on the L.M.S. Rly. Kirkby is the Lowton of Jane Eyre. Market day, Thurs. Pop. 1,394.

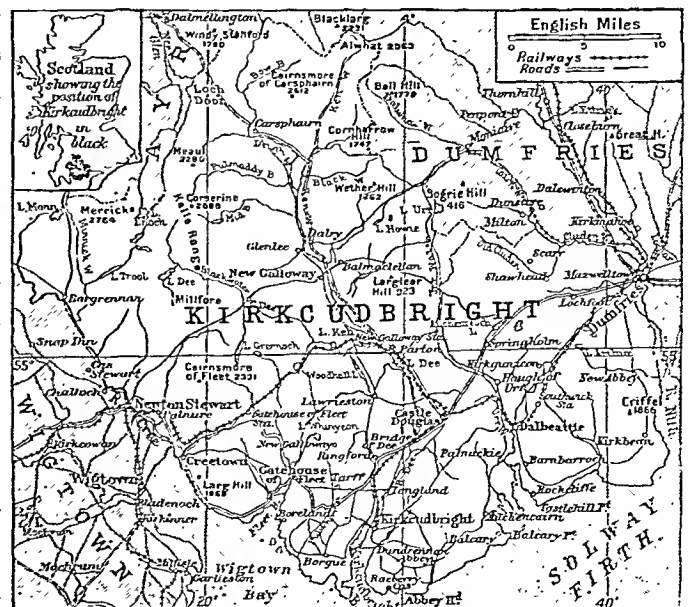
KIRKBY MOORSIDE OR **KIRBY MOORSIDE.** Market town of Yorkshire (N.R.). It is on the Dove, 20 m. S.W. of Whitby, on the L.N.E. Rly. In the vale of Pickering, with the moors around it, it is an agricultural centre, and there are ironstone mines near. Market day, Wed. Pop. 1,695.

KIRKBY STEPHEN. Market town of Westmorland. It stands on the Eden, 10 m. from Appleby, and is served by the L.M.S. and L.N.E. Rlys. It has an old church, S. Stephen's. It is an agricultural centre, and there are lead, iron, and copper mines near. Market day, Mon. Pop. 1,542.

KIRKCALDY. Burgh and seaport of Fifeshire, Scotland. On the Firth of Forth, it is 26 m. from Edinburgh, on the L.N.E. Rly. It has a good harbour, and is a coal shipping port. The industries include the manufacture of linoleum and floor cloth, paper making and flour milling, also dyeing, bleaching, and tanning. From the length of its main street, about 4 m., it is known as the "lang town." The burgh includes Inveriel, Linktown, Abbotshall, Gallatown, Sinclairtown and Pathhead. Pop. 39,591.

KIRKCUDBRIGHT. Burgh and co. town of Kirkcudbrightshire, Scotland. It stands at the mouth of the Dee, on its left bank, 30 m. S.W. of Dumfries on the L.M.S. Rly. Among the town's antiquities are the ruins of the castle erected by Sir T. Maclellan of Bombie, and traces of the ancient castle of the lords of Galloway. The harbour, formed by Kireudbright Bay, is one of the largest and safest in the S. of Scotland. Pop. 2,101. Pron. Kirkcoobree.

KIRKCUDBRIGHTSHIRE. County of Scotland. In the S.W. of the country, it is part of the district called Galloway, between the shires of Dumfries and Wigtown. Its area is 900 sq. m. It has a rocky coastline on the Solway. The surface, undulating and hilly in the S., becomes mountainous on the inland borders. The chief rivers are the Ken, Cree, Dee, and Urr. The lakes include lochs Doon, Dee, and Ken. Wigtown Bay is the largest



Kirkcudbrightshire, county of Scotland famous for its Galloway cattle and sheep

inlet. Agriculture is the chief industry, and the co. is famous for its cattle, the Galloway breed, and for sheep. The L.M.S. Rly. serves the co. Kirkcudbright is the co. town. From very early times the shire was part of Galloway. Under the Douglasses a steward was appointed, and it became known as the stewartry of Kirkcudbright and E. Galloway. It is still called the stewartry. Pop. 37,156.

KIRKDALE. Village of Yorksbire (N.R.), 7 m. from Slingsby station on the L.N.E.R. It is notable for its Saxon church of S. Gregory, and for Kirkdale Cavo. The latter, discovered in 1821, is 250 ft. long, and has yielded large quantities of fossils, including remains of the cave-lion, cave-bear, wolf, elephant, and rhinoceros.

Kirkdale is also the name of a N. suburb of Liverpool, as well as of one of its parli. divisions, and of a parish of Kirkcudbrightshire.

KIRKHAM. Urban dist. and market town of Lancashire. It is 8 m. W.N.W. of Preston, on the L.M.S. Rly. There are cotton and flax manufactures, and cattle fairs are held. Market day, Fri. Pop. 3,850.

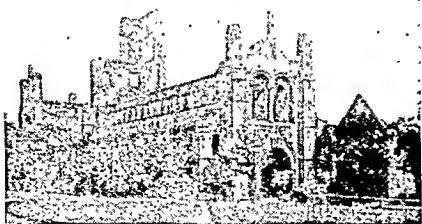
Kirkham, a village of Yorksbire (E.R.), on the Derwent, 16 m. N.E. of York, with a station on the L.N.E. Rly., has ruins of an Augustinian abbey, founded in 1121. In 1927 the ruins were presented to the nation.

KIRKINTILLOCH. Burgh of Dumbartonshire, Scotland. It is 8 m. from Glasgow, on the L.N.E. Rly., being also served by the Forth and Clyde canal. The park, called the Peel, contains remains of the Roman wall and of the castle of the Comyns. Pop. 11,690.

KIRK KILISSE OR KIRKLARELL. Town of Turkey, about 30 m. almost due E. of Adrianople. It trades in butter and cheese. Kirk Kilisse was the scene of a battle in the first Balkan War, 1912, when the Bulgarians won a signal victory over the Turks.

KIRKLISTON. Village of Linlithgowshire and Edinburghshire (Midlothian). On the Almond, 9 m. W. of Edinburgh, on the L.N.E.R., it has a Romanesque church. Pop. 3,694.

KIRKOSWALD. Village of Cumberland. On the right bank of the Eder, it is 15 m. from Carlisle, with a station, Lazonby and Kirkoswald, on the L.M.S. Rly. The church of S. Oswald has a detached tower and interesting monuments. There are remains of a castle. Pop. 475. Another Kirkoswald is a village in Ayrshire, 4 m. from Maybole. It is known for its associations with the early life of Burns.



Kirkstall. The remains of the 12th century Cistercian abbey viewed from the S.W.

Frith

KIRKSTALL. District of Yorksbire (W.R.). Now within the city of Leeds, it has a station on the L.M.S. and is famous for its ruined abbey. A Cistercian house, this was transferred from Barnoldswick to Kirkstall in 1152, and was destroyed at the dissolution of the monasteries. The remains include much of the church, the chapter house, and the abbot's lodgings.

KIRKSTONE. Pass in W. stmorland, 4 m. from Ambleside. It is on the direct route between Ambleside and Ullswater. Its summit

is 1,500 ft. high. The Traveller's Rest inn is one of the highest inhabited houses in England. The name is taken from a church-shaped rock at the top.

KIRKWALL. City, seaport, and capital of the Orkney Islands, Scotland. It stands on the island of Mainland (Pomona), 250 m. from Edinburgh. The chief building is the cathedral of S. Magnus, the older parts of which date from the 12th century. Pop. 3,697.



Kirriemuir. Bank Street, one of the thoroughfares in the town made famous as Thrums by Barrie

J. B. White, Dundee

KIRRIEMUIR. Burgh of Angus (Forfarshire), Scotland. It stands on Gairie Burn, 8 m. by rly. N.W. of Forfar, on the L.M.S. Rly. It was the birthplace of Sir J. M. Barrie, who made it famous as Thrums. It is engaged in linen weaving. In 1928 the cottage in which Sir J. M. Barrie was born (see illus. p. 199) was bought by Major R. D. Lauder for the nation. Pop. 3,408. See Auld Lights; Barrie.

KIRSCHWASSER (Ger. cherrywater). Liqueur made from cherries. A product of the Rhineland, it is made by pulping cherries with their kernels. After fermentation, the liquor is obtained by distillation.

KIRTON-IN-LINDSEY. Village of Lincolnshire. It is 6 m. from Brigg, on the L.N.E. Rly. The church of S. Andrew has some Norman and Early English work. Pop. 1,651. Another Kirton in Lincolnshire is known as Kirton-in-Holland. This is a market town 4 m. from Boston, on the L.N.E. Rly. Market day, Wed. Pop. 2,700.

KISH. Akkadian city at El-Obeimut, 9 m. E. of Hilla, N. Babylonia. From 1922 onwards important discoveries have been made near here. A cemetery of brick tombs has been unearthed and a great temple, dedicated to the earth goddess, excavated. In one tomb a large chariot was found.

KISHON. River of Central Palestine. It flows through the plain of Esdraelon and enters the Mediterranean about 6 m. S. of Acre. The defeat of Sisera (Judges 4, 1-16), and the slaying of the prophets of Baal (1 Kings 18, 40), took place on its banks.

KITCHENER. City and port of entry of Ontario, Canada. It is 62 m. S.W. of Toronto, on the Grand river, and is served by the C.N.R. The industries include furniture making and sugar refining. It is also an agricultural centre. Founded by German immigrants, the town was named Berlin. In 1916 the name was changed to Kitchener. Pop. 21,763.

KITCHENER OF KHARTOUM, HORATIO HERBERT KITCHENER, 1ST EARL (1850-1916). British soldier. Born at Croter House, Ballylongford, co. Kerry, Ireland, June 24, 1850, the second son of Lieut.-Col. Henry H. Kitchener, he passed out of Woolwich in 1870, and in 1874-78, as lieut. in the Royal Engineers, was on the staff of the Palestine Exploration Fund surveying Palestine and Cyprus.

In 1882 he entered the Egyptian army, and saw service in the unsuccessful Sudan Expedition of 1884-85 for the rescue of Gordon, the Suakin operations of 1888, and the Toski campaign of 1889. Appointed sirdar, or

commander, of the Egyptian army in 1892, he completed its reorganization and carried through the operations of 1896 and the Khartoum campaign of 1898. For his services he was made a baron and awarded £30,000.

After the disasters in S. Africa he was appointed chief of staff to Lord Roberts, who took over command there in Dec., 1899, and later succeeded him as commander-in-chief. In 1902 he brought the war to a close by the peace of Pretoria, and received the thanks of Parliament, a grant of £50,000, a viscounty, and the Order of Merit. From 1902-9 he served in India as commander-in-chief, and was appointed British agent in Egypt in 1911. He was created an earl in 1914.

On the outbreak of the Great War he was appointed secretary of state for war and at once took steps to raise a large army, known as Kitchener's Army, consisting of 70 divisions (1,400,000 men). On June 5, 1916, Kitchener left Scapa Flow for Russia in the cruiser Hampshire, in a violent storm; that evening she struck a mine near the Brough of Birsay, and all on board perished except 12 men. Kitchener's body was never found. He never married. He was succeeded by his elder brother, Henry Elliott Chevallier, 2nd earl (b. Oct. 5, 1846).

Three impressive memorials to Kitchener are the Memorial Chapel in S. Paul's Cathedral, a statue on the Horse Guards Parade, and the Memorial Tower on Marwick Head, near Birsay, Orkney. See Forshortening; consult also Life, Sir G. Arthur, 1920.

Kitchener scholarships are educational grants founded in 1916 by the Lord Kitchener National Memorial Fund. They are of an annual value of about £150 each.

KITCHEN MIDDEN. Anglied form of the Danish name for a prehistoric refuse-heap. These heaps usually comprise shells of edible molluscs, with animal bones and occasional relics of human handiwork. There are numerous examples on the Danish coasts, sometimes 1,000 ft. long and 10 ft. high. They were left by semi-nomad hunters and fishers who built rude huts with stone hearths.

KITE. Popular name for a number of birds of prey of the falcon tribe, but usually restricted to the common kite (Milvus icinus).



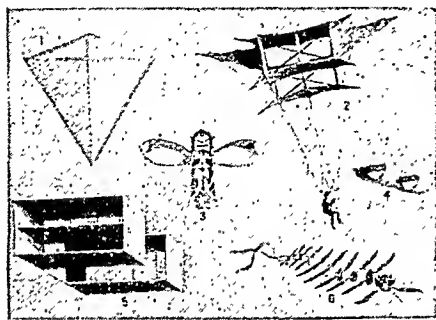
Kite. Bird of prey common to Europe

This bird is found in most parts of Europe and N. Africa, but is now rare in Great Britain. It is about 25 ins. long, and its plumage is reddish-brown on the upper parts and rufous with blackish stripes on the lower parts. The head and neck are whitish, streaked with brown, and the tail is forked and reddish-coloured. It lives mainly on small birds and insects.

KITE. Appliance which ascends into the air in virtue of the presence of a relative wind upon an inclined surface. In its commonest form a kite consists of a framework of wood or other light material covered with fabric or paper and held stationary in a

wind by a string in such a position that the air strikes upon its lower surface. In recent years kites have been developed for lifting recording instruments to explore the conditions of the air above the surface of the earth.

KITE BALLOON. This is a type of captive balloon developed for the purpose of making military observations. It consists generally of an elongated pear-shaped envelope inflated with hydrogen and fitted at its tapering end with four stabilising fins arranged in the form of a cross. These fins are open to the air and are inflated by the wind. From the envelope is suspended a basketwork ear containing the observers, their instruments, and telephone. See Aeronautics; Balloon.



Kite. 1. Standard Malay kite. 2. Cody's man-lifting kite. 3. Japanese pocket kite. 4. Semicircular cellular kite. 5. Box kite. 6. Chinese dragon kite

KITTIWAKE (*Rissa tridactyla*). Bird of the gull family. Common on the British coasts, it breeds in enormous numbers in Greenland and Spitsbergen and is also found in the N. Pacific. About the same size as the black-headed gull, it resembles the herring gull in its grey and white coloration. It is a good swimmer, and feeds upon fish chiefly. The young kittiwake is known as a tarrock.

Kiwi. Native name for a flightless bird of New Zealand, which is also known as apteryx (q.v.).

KLEBER, JEAN BAPTISTE (1753-1800). French soldier. Born at Strasbourg, March 9, 1753, he joined the French revolutionary army as a volunteer in 1792. In the following year he became a brigadier-general, and fought against the royalists in La Vendée. After service against the Austrians, in which he won the victory of Altenkirchen in 1796, he accompanied Napoleon to Egypt, and in the Syrian campaign won the battle of Mt. Tabor (1799). On Napoleon's return to France, Kléber became commander-in-chief. He defeated the Turks at Heliopolis, 1800, but was assassinated June 14, 1800.

KLERKSDORP. Town of the Transvaal, on the Seboonspruit, 29 m. S.W. of Potchefstroom by rly. The old village was one of the first Boer settlements in the Transvaal (1838). Klerksdorp is the centre of a gold-mining district. Small diamonds are found in the neighbourhood, and it is the market for an important cattle district. Pop. 4,200.

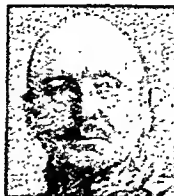
Klip. River in Natal. Rising in the Drakensberg Mts., it falls into the Tugela, a few miles from Ladysmith.

KLIPSPRINGER (*Oreotragus saltator*). Small species of antelope which occurs throughout E. Africa, usually in rocky districts. The name means rock-jumper, and well describes its habits. Its feet are so small that, when they are placed together, the animal can stand on a crown piece. In colour it is olive above and lighter below, and the horns are short, straight, and vertical. See Antelope.

KLONDIKE. River and district of the Yukon Territory, Canada. The river is about 120 m. long, and joins the Ynkon near Dawson City. The district lies E. and S. of the river. In 1896 placer gold was discovered in the creeks that flow into the larger streams, and for a few years much gold was produced.

KLUCK, ALEXANDER VON (b. 1846). German soldier. Born at Münster, May 20, 1846, he served in wars of 1866 and 1870-71, being wounded twice at Metz. In 1906 he was promoted general of infantry. When the Great War broke out he was placed in command of the German first army, which invaded and overran Belgium early in Aug., 1914. After receiving the surrender of Brussels and masking Antwerp, he moved on Mons, driving the Allies towards Paris.

Early in Sept. Kluck was attacked by the French and the British, who brought about his defeat in the battle of the Marne. He retired in 1916. See Marne; consult also The March on Paris, A. von Kluck, 1920.



Alexander von Kluck, German soldier

KNAPWEED (*Centaurea nigra*). Perennial herb of the order Compositae, native of W. Europe. The leaves are entire or lobed, and the small flower-heads are of a dull purple and thistle-like. Knapweed abounds in pastures and waysides.

KNARESBOROUGH. Urban dist. and market town of Yorkshire (W.R.). It is on the Nidd, 3½ m. N.E. of Harrogate, on the L.N.E.R. On a rocky pinnacle are the picturesque ruins of the castle, a residence of Piers Gaveston, Henry III, and John of Gaunt, dismantled in 1648. The church has monuments of the Slingsby family. Another local feature is the Dropping Well, famous for the petrifying qualities of the water. Market day, Wed. Pop. 5,518.

KNEBWORTH. Village of Hertfordshire. It is 25 m N of London by the L.N.E.R. Knebworth House, the seat of the earl of Lytton, is in the parish. It was erected early in the 19th century on the site of an older house. The estate has been owned by the Lyttons since 1490. Pop. 1,629. See Lytton.

KNEE JOINT. Hinge joint, formed by bony prominences or condyles at the head of the femur or thigh bone, the flattened head of the tibia or main bone of the lower leg, and the patella or knee-cap. The bones forming the joint are kept in their position by very strong ligaments. In addition to those surrounding the joint, there are two crucial ligaments inside the joint. The articular surface of the tibia consists of two cartilaginous plates, the semilunar cartilages.

Displacement or rupture of a semilunar cartilage is a common result of strain or sprain of the knee, particularly when associated with a movement of rotation, and any sudden wrench. Other affections of the knee joint are arthritis and bursitis.

KNELLER, SIR GODFREY (1646-1723). German painter, whose real name was Gottfried Kniller. Born at Lübeck, Aug. 8, 1646, he studied at Amsterdam under Ferdinand Bol, and received some lessons from Rembrandt. In 1675 he came to England, where he built up a lucrative connexion after painting the portrait of Charles II (1678). He also painted portraits of James II, William III, Queen Anne, and George I, and succeeded Sir Peter

Lely as court painter (1680). Peter the Great and Louis XIV also sat to him.

His most notable works include the equestrian portrait of William III, the portraits of Queen Anne, the duchess of Marlborough, Lord Chancery Cowper, Sir Isaac Newton, and the 48 members of the Kit-Cat Club. He was knighted in 1691, and died in London, Oct. 19, 1723. See illustrations, pp. 92, 231, 444, 502, 647, 653, 662, etc.



Sir Godfrey Kneller, German painter
Self-portrait

KNELLER HALL. This is the mansion built by Sir Godfrey in 1711, near Hounslow, Middlesex, and is now the Royal Military School of Music, established for the training of handsmen for the British army. The administration is strictly military.

KNIGHT, CHARLES (1791-1873). British publisher, editor, and author. Born at Windsor, March 15, 1791, he began as a publisher in London, in 1823, starting Knight's Quarterly Magazine, the contributors to which included W. M. Praed, Macaulay, and De Quincey. As publisher, and in some cases editor, between 1829-46, of the works of The Society for the Diffusion of Useful Knowledge, his name is associated with The Penny Magazine, The Penny Cyclopaedia, reissued later as The English Cyclopaedia, and other educational publications. His own writings include Lives of Caxton, Fairfax, Shakespeare (prefixed to his edition of the works), and Tasso; Popular History of England, 1862; Passages of a Working Life, 1864; and Shadows of the Old Booksellers, 1865. He died March 9, 1873.



Knapweed. Perennial herb of the waysides

KNIGHT, DAME LAURA. British painter. Daughter of Charles Johnson, of Nottingham, she married Harold Knight, a portrait painter,

in 1903. She first exhibited at the Royal Academy in 1903. Examples of her work are in the Victoria and Albert Museum, in Manchester and Birmingham, as well as in galleries in South Africa and Australia. She was elected A.R.A. in Nov., 1927. She has particularly concerned herself with painting scenes from circus and stage life. In 1929 she was made a Dame Commander.



Laura Knight, British painter

KNIGHTHOOD. Rank of a knight and the fraternity of knights. The Church early influenced knighthood, prescribing the terms of the knightly ideal, and some orders were exclusively religious. Of these, the best known are the Hospitallers or Knights of St. John, the Templars and the Teutonic Knights. There were three manners of knighting. (1) Sudden dubbing on the field of battle. (2) Dubbing by a layman, but accompanied by special ceremonial, including an all-night vigil and purification in a bath (hence the still surviving Order of the Bath). (3) Dubbing by the Church, with appropriate ritual.

Knight's fee was the name given in England in feudal times to the amount of land forming the unit of military service, men holding land in return for supplying the king or overlord

with a certain number of knights in case of war. This was known as knight service. By the late 13th century, owing partly to the decadence of the class from which the knights were drawn, the system was in full decay, and the introduction of gunpowder into common use dealt a death-blow to knighthood as a military and political force. But orders of knighthood remained, and membership was soon a coveted distinction conferred by the king.

In the United Kingdom to-day there are two classes of knights: (1) the knights bachelor, the lowest but most ancient order of knighthood, consisting of those who have merely been knighted; and (2) knights of the various orders: Garter, Thistle, St Patrick, Bath, St Michael and St George, Star of India, Indian Empire, Royal Victorian and British Empire. A knight is entitled to the prefix Sir and his wife to that of Lady, although her legal title is Dame. The title is not hereditary. Of foreign orders, that of the Golden Fleece is regarded as the most distinguished. See *Accolade*; *Banner*; and under the names of the various Orders.

KNIGHTLOW. Hundred of Warwickshire. It is noted for its hundred moot, still held every year on Nov 11. The steward of the duke of Buccleuch assembles the representatives of the parishes round a hollow stone, on the top of Knightlow Hill, and reads out the names of the parishes and the amount due from each, which is cast into the stone.

KNIGHTON. Market town and urban dist. of Radnorshire. It stands on the Teme, 5 m. from Presteigne, on the L.M.S. Rly. Market day, Thurs. Pop. 1,752. There are other places of this name in England, one a residential suburb of Leicester.

KNIGHTSBRIDGE. London thoroughfare. It runs between Hyde Park Corner and Kensington Gore, S. of Hyde Park and N. of Belgrave and Brompton. Charles Reade lived at No. 70, Knightsbridge, 1867-79. At 49, Prince's Gate, the Peacock Room was decorated by Whistler in 1876-77. The cavalry barracks date from 1879; the riding school from 1857. Here are St. Paul's church, that of Holy Trinity, and the horse mart of Tattersall's.

KNIGHT'S STAR LILY (*Hippeastrum*). Genus of bulbous herbs of the natural order Amaryllidaceae. Natives of S. America, they have strap-shaped leaves and small clusters of large funnel-shaped, lily-like flowers. In colour they are orange, crimson, or white, striped and mottled with various tints. Long cultivated in greenhouses, they have given rise to many florists' varieties and hybrids.

KNIGHTS TEMPLARS OR **KNIGHTS OF THE TEMPLE.** Religious and military order founded by Hugh de Payens and others at Jerusalem about 1118. The rule enjoined chastity, poverty, and obedience. The object was the defence of pilgrims to the Holy City. There were three grades—knights, esquires, and those who helped with gifts. The numbers at the end of the 13th century were about 15,000, while the property included 9,000 castles and manors. The mantle was white; in 1146 Eugenius III added to it a red cross. The seal represented two knights riding a single horse. The black and white banner (see illus. p. 190) bore the legend *Beau Séant* (q.v.). The order had stations at Jerusalem, Antioch, Tripoli, and Cyprus, and provinces in

nearly every country in W Europe. The head of the order was the Grand Master, while in each country was a governor.



Knights Templars. Effigy in Temple Church, London

seized Münster in Westphalia, in 1534. On the death of Matthys, Boekelson became king of the New Zion, and Knipperdolling his vice-steward and guardian of public order. Münster was recaptured in 1535, and Knipperdolling, Boekelson, and their colleague Bernhard Krechting were taken and executed. See *Anabaptists*.

KNOBLOCK, EDWARD (b. 1874). British dramatist. Born in New York, April 7, 1874, and educated at Harvard, he was naturalised as a British subject in 1916, changing the spelling of his name from Knoblauch. His numerous successful plays include *The Shulamite* (with Claude Askew), 1906; *Kismet*, 1911; *Milestones* (with Arnold Bennett), 1912; *My Lady's Dress*, 1914; *London Life* (with Arnold Bennett), 1924.

KNOCK. Village of co. Mayo, Irish Free State. It is 5½ m. N.E. of Claremorris. About 1880 it became a place of pilgrimage, owing to a report that an apparition of the Virgin Mary had appeared on the gable wall of the Roman Catholic chapel. Pop. 2,550.

KNOCKALOE. Locality 1½ m. S. of Peel, Isle of Man, which gave its name to one of the largest internment camps for enemy civilians during the Great War. Knockaloe camp lay near Peel, on the W. coast of the island. It was afterwards made into an experimental farm. See *Internment*.

KNOCKER. Piece of brass or iron suspended to an outer door, in order that a caller can make his presence known. In England, in the 18th century, the houses of the wealthy were adorned with knockers of fine workmanship, and collections of these have been made. In the 19th century the knocker was largely replaced by the bell, but it remained on many houses as an ornament. A knocker-up is a person who, for a small fee, knocks up the workers at a stated hour in the morning.

KNOCK KNEE (*Genu valgum*). Deformity in which the knees are bent inwards, so as to touch each other. The commonest cause is rickets during early life. In young children, rest in bed, massage, and manipulation, help to straighten the limb. In older children it may be necessary to apply splints on the outer side of the leg. In addition, appropriate measures must be taken to deal with the rickets. See *Bow Leg*.

KNOCKMEALDOWN. Mt. range of the Irish Free State. It extends for about 13 m. between co. Tipperary and Waterford. The highest summit attains 2,609 ft.

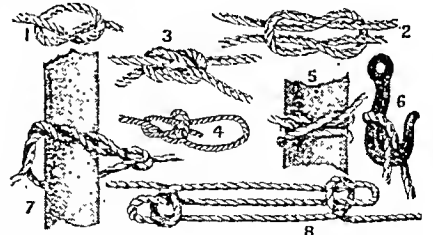
KNOLE. Seat of Lord Sackville, in Kent, 1½ m. from Sevenoaks. It was first a residence of the earl of Pembroke, but in the 15th century was bought and largely rebuilt by the archbishop of Canterbury, Thomas Beuchier. Later archbishops lived here until the house and estates were taken from Cranmer by Henry VIII. Elizabeth gave them to Thomas Sackville, afterwards earl of Dorset. The



Knole, the seat of Lord Sackville, Sevenoaks, reconstructed in 17th cent. on site of earlier buildings

present structure was built early in the 17th century. It contains many valuable works of art, especially paintings, and stands in a large deer park. Of the old house, the chapel remains.

KNOLLYS, FRANCIS KNOLLYS, 1ST VISCOUNT (1837-1924). British courtier. Born July 10, 1837, he was descended from a famous family that until about 1810 claimed the earldom of Banbury. In 1868 he became gentleman usher to Queen Victoria, and in 1870 private secretary to the prince of Wales, afterwards Edward VII, retaining this position throughout the reign of the latter, and also serving George V until his resignation in 1913. He was a lord-in-waiting to Queen Alexandra. Having been a knight since 1886, he was created a baron in 1902 and a viscount in 1911. In 1910 Lord Knollys became a privy councillor. He died Aug. 15, 1924. Pron. Noles.

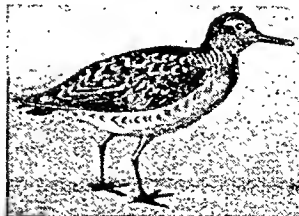


Knot. Cordage knots in common use. 1. Overhand. 2. Reef. 3. Granny. 4. Bowline. 5. Clove hitch. 6. Blackwall hitch. 7. Timber hitch. 8. Sheepshank

KNOT. Word employed in different senses. (1) It is a measurement of speed in nautical miles per hour, so called from the knots in the log line by which a ship's speed used to be measured. The word includes time. The Admiralty nautical mile is usually taken as 6,080 ft.

(2) In cordage a knot is a loop, or combination of loops, used for fastening two ropes together, fastening a rope to some object, or for making a knob or swelling in or at one end of a rope to prevent slipping, etc.

(3) A knot in wood is the hard portion due to the growth of a branch.



Knot. The small migratory bird in its summer plumage

KNOT (*Tringa canutus*). Small wading bird of the plover family (Charadriidae) and the sandpiper section. Vast numbers visit

the E. and S.E. coasts of Britain in the autumn. About 9 ins in length, it has long legs and a long, slender bill, and its winter dress is ashy-grey above and white below. In summer this is replaced by red-brown feathers with black centres above, while the lower parts are chestnut. It frequents mud flats and salt marshes, and feeds on molluscs.

KNOTTINGLEY. Urban dist. and river port of Yorkshire (W.R.). It stands on the Aire, 3 m N of Pontefract on the L.M.S. Rly. The industries include brewing and malting. A canal connects the Aire at Knottingley with Goole. Pop. 6,757.

KNOUT (RUSS knout). Scourge formerly used in Russia for flogging criminals. The commonest form of this whip consisted of plaited thongs of hide, sometimes interwoven with wire. The punishment was so severe that death often ensued. Flogging with the knout was abolished by Tsar Nicholas I.

KNOWLES, JAMES SHERIDAN (1784-1862). British actor and playwright. Born at Cork, May 12, 1784, he went to London in 1793. His first play, *Leo, or The Gipsy*, 1810, was written for Edmund Kean. His first great success was with his comedy, *The Hunchback*, staged at Covent Garden, April 5, 1832, by Charles Kemble, with Mrs. Kemble in the part of Julia. For *The Wife*, 1833, Lamb wrote prologue and epilogue. His most popular play was the comedy, *The Love Chase*, first seen at The Haymarket, Oct. 9, 1837, and still occasionally revived. Knowles died Nov. 30, 1862. His son, Richard Brinsley Knowles (1820-1882), was an official of the Historical MSS. Commission.



Knucklebones. Women playing; from a painting in Herculaneum. See below. Courtesy of the trustees of the Brit. Mus.

KNOWLTON. Village of Kent. It is 4½ m. S.W. of Sandwich and 9 m. from Canterbury. It contains a cross erected as a memorial to the bravest village of the United Kingdom. A competition was organized for ascertaining the best voluntary recruiting record in the villages of the U.K. up to Feb. 28, 1915. The first place was given to Knowlton, which sent 13 recruits out of 39 residents.

KNOWSLEY. Lancashire residence of the earl of Derby, 8 m. from Liverpool. The estate came to the Stanleys before 1400 through the marriage of Sir John Stanley with the heiress of the Lathoms, and the original house was enlarged by the 1st earl of Derby. It is mainly built of red brick, and has many fine pictures and family portraits. There is an extensive park.



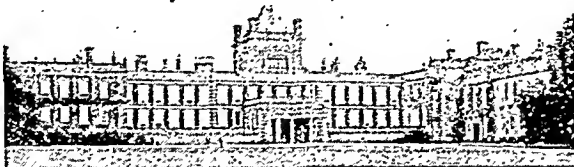
John Knox, Scottish reformer. After an unknown artist.

KNOX, JOHN (c. 1514-72). Scottish reformer. Born at Giffordgate or Morham, near Haddington, Knox became the companion of Wishart, the martyr, in 1545, and definitely embraced the reformed faith. He became preacher to the garrison of St Andrews, and when the castle surrendered to the French (July, 1547), Knox was consigned to the French galleys, but was released, Feb., 1549. For the next five years he played a notable part in the Reformation under Edward VI as a royal chaplain. He became minister to English refugees at Frankfurt, Nov., 1554, was chosen pastor by

English exiles at Geneva in 1555, and became imbued with the Calvinistic spirit. In 1559 he returned to Scotland, and delivered stirring sermons at Perth, St. Andrews, and Edinburgh.

When the French troops left Scotland the Roman Catholic doctrine was replaced by a Calvinistic Confession of Faith drawn up by Knox and his colleagues. But the cupidity of the nobles prevented the ratification of the First Book of Discipline, by which the revenues of the old church were claimed for the new. The breach between the Protestant nobles and Knox was widened by the conciliatory policy of the former on Mary's return to Scotland in Aug., 1561. Knox was persuaded that Mary was only biding her time to restore Catholicism, and his denunciations of this policy led to his famous interviews with Mary. He withdrew to St. Andrews in May, 1571, but returned to Edinburgh in Aug., 1572, and died Nov. 24, 1572. The most important of his numerous writings is his *Historie of the Reformation in Scotland*. See Calvin, J.; Reformation; also Edinburgh, illus.

KNOX, RONALD ARBUTHNOTT (b. 1888). British writer. A son of Rev. E. A. Knox, sometime bishop of Manchester, after a brilliant career at Oxford he joined the Roman Catholic church in 1917 and later became chaplain to the R.C. undergraduates at Oxford. He is also known as the author of some clever detective stories. His brother, Edmund George Valpy (b. 1881), was educated at Rugby and Corpus Christi College, Oxford. Having joined the staff of Punch, he became known by his witty contributions



Knowsley Hall, Lancashire, the residence of the earl of Derby. It has been enlarged and frequently altered since the 16th century.

to that journal signed Evoc, some of which have appeared as books.

KNUCKLEBONES. Primitive game originally played with the knucklebones of a sheep. The object of the game is to toss the five knucklebones, now usually stones, one after the other and catch them on the back of the hand. There are many variations and different kinds of throws. See illus. above.

KNUR AND SPELL. Popular game in Lancashire and Yorkshire. It is a species of trap and ball game: the spell answering to the trap, and the knur to the ball. The implement for striking the knur when thrown up by the trigger of the trap is called the pommel; it is a tapering ash stick with a head of beech faced with maple. The knur is now commonly of porcelain, about 1 in. in diameter, and ½ oz. in weight.

KNUTSFORD. Urban dist. and market town of Cheshire. It is 15 m. S.W. of Manchester, on the Cheshire Lines Rly., a favourite residence of Manchester merchants, and a

centre of leather, worsted, and cotton goods manufacture. It is the Cranford of Mrs. Gaskell, who was buried in the Unitarian churchyard Near are Tatton Park, the 13th century church of Lower Peover, Tabley House, and Tabley Old Hall, on an island in a lake. Market day, Sat. Pop. 5,507.



Koala, the marsupial commonly called the native bear of Australia.

KNUTSFORD, HENRY THURSTAN HOLLAND, 1st Viscount (1825-1914). British politician. The son of Sir Henry Holland, the physician, and the grandson of Sydney Smith, he was born Aug. 3, 1825. He became legal adviser to the colonial office in 1854, was promoted to be assistant under-secretary, and then took up a political career. From 1874-85 he was M.P. for Midhurst, and from 1885-88 for Hampstead. From 1887-92 he was secretary of state for the colonies. He was made a baron in 1888, and a viscount in 1895. He died Jan. 29, 1914.

His son, Sydney Holland, 2nd Viscount (b. 1853), was best known for his association with the London and other hospitals. He was chairman of the London Hospital. He published *In Black and White*, 1926.

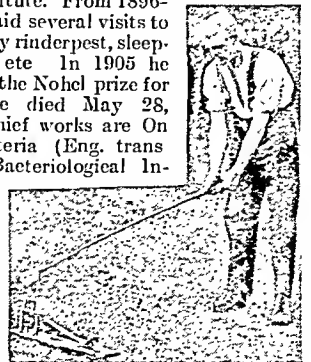
KOALA (*Phascogaleus cinereus*). Marsupial mammal. Found in Australasia, it is commonly called the native bear, though not related to the bear tribe. A thick-set animal about 2 ft long, its fur is greyish in colour with white below. It has no visible tail. An expert climber, it spends most of its time in the eucalyptus or blue gum trees, feeding on the leaves. It also eats roots. See illus. above.

KOBE. Seaport and city of Japan. At the E. end of the Inland Sea, on Osaka Bay, Honshu, it is the port of Osaka 22 m. distant, with which it has rly. connexion. There are shipbuilding and engineering establishments. The chief exports include tea, rice, cotton yarn, and porcelain. Kobe has steamship communication with the great ports of the Pacific and N Atlantic oceans. Pop. 644,212.

KOCH, ROBERT (1843-1910). German bacteriologist. Born at Klausthal, Prussia, Dec. 11, 1843, he studied medicine at Göttingen University. In 1876 he announced the isolation of the bacillus of anthrax. In 1882, thanks to his new methods of microscopical examination, he was able to announce the discovery of the tubercle bacillus, and in 1883, after a visit to Egypt and India, of the comma bacillus, the cause of cholera.

In 1885 Koch became professor in the university of Berlin, and director of the new

Hygienic Institute. From 1896-1903 Koch paid several visits to Africa to study rinderpest, sleeping sickness, etc. In 1905 he was awarded the Nobel prize for medicine. He died May 28, 1910. His chief works are *On Cholera Bacteria* (Eng. trans. 1886); *On Bacteriological Investigation* (Eng. trans. 1891); *Investigation of Pathogenic Organisms* (Eng. trans. 1886). See Bacteriology; consult Life, C. Vezel, 1912.



Knur and Spell. Player about to strike trap trigger with pommel.

KOFFYFONTEIN. Town of the Orange Free Stat. S. Africa. It is 36 m. from Fauresmith. The town owes its existence to the diamond mines in the neighbourhood. Pop. 3,300.

KOH-I-NUR, or **KOH-I-NOOR**. Famous Indian diamond. Now in the British crown, it is supposed to have come from the Golconda mines. It came into the possession of Ala-ud-din, emperor of Delhi, in 1304, and in 1526 into that of Humayun, son of Babar, the founder of the Mogul dynasty. It passed in 1739 to the Persian invader Nadir Shah. Ranjit Singh acquired it in 1833, and after the annexation of the Punjab in 1849 it was presented to Queen Victoria, and cut from 186½ carats to 106½.



Koh-i-Nur. The famous diamond after its second cutting. Half actual size

KOHL. Powder used by Oriental women to darken the orbits of the eyes. Introduced in neolithic times, eye-paint became general in early Egypt, and its vogue spread thence to W Asia, Greece, and Rome. It was used by Jazebel (2 Kings 9, 30). The fashion survives among all classes, Copt and Moslem, in modern Egypt. Burnt almond shells and gum libanum are favourite materials.

KOHL-RABI OR **COLE-RAPE** (*Brassica oleracea* Caulo-rapa). Variety of cabbage with the stem swollen at its base, just above the ground. It is a food relished by stock, while some kinds are adapted for human consumption. Tolerant of drought and cold, it is cultivated very like the turnip is.

KOKRA. Timber of *Aporosa roxburghii*, a tree of the order Euphorbiaceae, native of India. It has laurel-like, leathery leaves, and flowers in catkins. The wood is very hard, and useful for many purposes, including the making of musical instruments, such as flutes.



Kohl-rab, variety of cabbage eaten by cattle

KOLA. Peninsula of Russia, between the White Sea and the Arctic Ocean. The N. shore is called the Murman, i.e. Norman, coast. The country is dreary and inhospitable. It came into prominence in the Allied expedition to the Murman coast, 1918. It is on the Murman rly. See Archangel; Murman.

KOLA NUT OR **GOORA NUT**. Seed of an evergreen tree (*Cola acuminata*) of the order Sterculiaceae, a native of tropical Africa. The tree is about 40 ft. high, and has large leathery oblong leaves pointed at each end and sprays of pale yellow flowers. The seeds, about the size of horse chestnuts, are contained in pod-like follicles. They are used as a condiment, a small piece also being chewed before a meal to improve the flavour of the viands.

KOLTCHAK, ALEXIS (1874-1920). Russian sailor. He entered the Russian navy in 1891, saw service in the Russo-Japanese War of 1904-5, and was rear-admiral of the Black Sea fleet at the outbreak of the Great War. After the Revolution of 1917 his fleet mutinied at Sevastopol and arrested him with his officers. In the winter of 1917-18 he organized an anti-Bolshevist force in E. Siberia, and set up a government with headquarters at Omsk. In 1918-19 he marched W. to the Urals and inflicted several defeats on the Bolshevik forces. Eventually falling into the hands of the enemy, he was shot at Irkutsk, Feb. 7, 1920. See Denikin; Korniloff.



Admiral Koltchak, Russian sailor

KOLUBARA. River of Serbia, in Yugoslavia. It rises in the hills S of Valievo, runs E., thence N., and enters the Save at Ohrenovatz. Its valley, which was the scene of fighting between the Austrians and Serbians in the Great War, gave its name to a battle, also called the battle of Suvobor, or of the Ridges. The battle began Nov. 6, 1914, with the invasion of N.W. Serbia by the Austrians, and terminated Dec. 15, 1914, with the recapture of Belgrade by the Serbians. This great victory freed Serbian territory from its invaders for the time being.

KOMATI. River of S.E. Africa. It rises in the E. Transvaal and runs through Swaziland and Portuguese E. Africa to Delagoa Bay. Low-grade auriferous rock is found in the upper valley in the Steynsdorp district. Near the junction of the Komati and Crocodile rivers, in the Transvaal, is the frontier settlement of Komati Poort. It is on the rly. from Lourenço Marques to Johannesburg.

KONIEH OR **KONYA**. City of Turkey, the ancient Iconium. Capital of the vilayet of the same name, it lies about 300 m. E. of Smyrna, with which and with the Bosphorus it is connected by railway. The centre of a fertile district, it carries on a large trade, and its carpet and silk industries are extensive and valuable. It has many fine mosques, and is famous for its monastery of the Dancing Dervishes. Pop. 47,286.

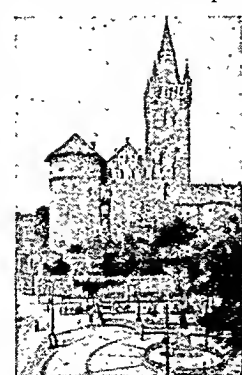
KÖNIG, FRIEDRICH (1774-1833). German inventor of the first practical steam printing machine. Born at Eisleben. April 17, 1774, he left Germany for England in 1806. König's first patent (1810) was for a hand press so modified as to permit of power being applied to it. König experimented with the idea of the cylinder, and took out three other patents, in 1812, 1814, and 1816. Two machines were made for The Times, and on Nov. 29, 1814, this paper was first printed by steam, the rate of production being quadrupled. König died Jan. 17, 1833.



Friedrich König, German inventor

KÖNIGGRÄTZ. Town of Czechoslovakia. It is in Bohemia, 14 m. from Prague, and has a Gothic cathedral and other interesting buildings. Pop. 13,100. Near is the village of Sadowa (q.v.), where, in July 1866, the Prussians defeated the Austrians.

KÖNIGSBERG. German cruiser. Raiding in the East at the outbreak of the Great War, she was driven into the Rufiji river, German E. Africa, and there blockaded by British warships, being finally destroyed July 11, 1915. Sister ships were the Nürnberg,



Königsberg. The castle, begun in the 13th cent.

destroyed at the Falklands battle, Dec. 8, 1914, the Stettin, and the Stuttgart.

KÖNIGSBERG. City and port of Germany, capital of E. Prussia. It stands on the Pregel, about 4½ m. from its mouth in the Frisches Haff, and 400 m. from Berlin. The town proper is divided into three parts, the old town, the district of Löbenicht, and the Kneiphof, on an island in the river; around are modern suburbs. The chief buildings are the palace

or castle, begun in the 13th century and the Gothic cathedral on the island. The university was founded in 1544. There is an old Rathaus. The industries include shipping, the channel connecting it with Pillau, its port on the Baltic, taking large ships. The manufactures include machinery, chemicals, toys, and sugar. Königsberg was founded by the Teutonic Order, who built a castle here in 1255. It was the residence of the masters of the Teutonic Order and afterwards of the dukes of Prussia. Pop. 279,926. See Tannenberg.

KÖNIGSSTUHL. Historic place in Germany. It is near Rense on the left bank of the Rhine, in the Prussian Rhine prov. In medieval times the junction of four of the German electorates, it became the meeting place of the electoral assemblies. In 1376 the emperor Charles IV erected a small building here, to which the name of Königsstuhl was given. It was rebuilt in 1843. See Empire.

KONJAK (*Amorophallus rivieri*). Perennial tuberous herb of the order Araceae, a native of Japan. The much divided leaves are about 4 ft. across, solitary, on a tall marbled leafstalk. The flowers appear before the leaves, and are clustered round a deep red spike which protrudes far above the rosy-green spreading spathe. A large quantity of starch is obtained from the tubers.

KOOTENAY. River of Canada. The chief tributary of the Columbia river, it rises on the W. of the Rocky Mts. in British Columbia, flows across adjacent parts of Montana and Idaho, emerges into British Columbia again W. of the Purcell range, flows into Kootenay Lake from the S., and leaves the lake to flow S.W. to the Columbia just below Lower Arrow Lake. Its length is 400 m.

The Kootenay Pass, in the Rocky Mts. between British Columbia and Alberta, sometimes called the Boundary Pass, is the most southerly of the Canadian passes, in lat. 49° 9'.

KOPECK (Russ. *kopeyka*). Russian coin. It is the one-hundredth part of a rouble (q.v.), its nominal value being three-eighths of a penny.

KÖPENICK OR **CÖPEN-ICK**. Part of Greater Berlin, before 1920 a separate town. It lies on an island at the junction of the Spree and Dahme. The manufactures include linoleum, chemicals, and dyestuffs. The "captain of Köpenick" was an impostor, Wilhelm Voigt, a cobbler and old convict. On Oct. 16, 1906, in the uniform of a captain of the guards, and accompanied by two grenadiers, he entered the burgomaster's office, appropriated a sum of money, and sent the burgomaster and treasurer to the guard-house at Berlin in charge of the grenadiers. He died in March, 1918.

KOPJE (Dutch, kop, top). Name given to flat-topped S. African hills produced by the denudation of an ancient plateau. Spion Kop is a well-known example. Pron. Kop-py.

KORAH. Israelitish rebel and cousin of Moses. Objecting to the priesthood being confined to the line of Aaron, he raised a revolt against Moses. The movement failed, and Korah and his household were destroyed. His descendants later appeared as a society of singers in the Temple.

KORAN, THE (Arabic Qur'an, that should be read). The Book which was revealed to the Prophet Mahomet or Muhammad, both at Mecca and Medina, during the last 23 years of his life, and is believed by the Moslems to be the word of God as distinguished from Hadis,

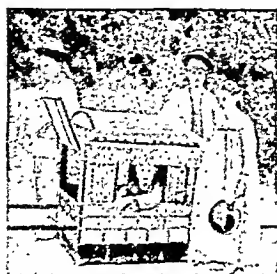


Kopeck. Two sides of coin of Alexander II, three-quarters of actual size

i.e. the sayings of the Prophet. It is divided into 30 parts, and sub-divided into 114 chapters, each having a separate title.

The Koran was reduced to writing in the Prophet's lifetime under his personal care; and was also committed to memory by his companions. It is in rhymed prose and is universally recognized as the finest production in Arabic literature. It claims to contain all the truths of previous revealed books, to be the final, unalterable, and the complete exposition of the religion of Islam. See Islam; Mahomedanism; Mahomet.

KOREA OR **CHOSEN**. Peninsula of Asia, S. of Manchuria, forming part of the Japanese Empire. It is separated from Japan by Korea Strait.



Korea. Lady of rank in her miniature sedan chair, with attendants

Along its coasts are about 200 islands, including Saishuto (Quelpart) and the Nankaito group. The capital is Seoul (Keijo). The area is 85,155 sq. m. Pop. 19,103,900.

The country is broken by hills and valleys

and the numerous rivers are swift and shallow. The chief industry is agriculture. Rice, barley, wheat, beans, cotton, tobacco, ginseng, and fruits are grown, and silk culture and cattle rearing are carried on. Fishing is a growing industry. Gold is mined, and copper, iron, coal and other minerals are found.

At the dawn of Christianity the people of Korea already possessed a high degree of civilization. At the close of the 16th century the country was invaded by Hideyoshi, the Napoleon of Japan. Korea never recovered from this blow, and for over 200 years remained isolated from the world. Since its annexation by Japan in 1910 the rlys. have been extended, roads improved, postal and telegraphic systems set up, and foreign trade has enormously increased. See Japan.

KÖRNER, KARL THEODOR (1791-1813). German poet. Born at Dresden, Sept. 23, 1791, he early took to writing, and is best remembered as a lyric poet. In 1813 he joined the army when Prussia rose against Napoleon, which inspired him to write his patriotic songs. Only a few hours before his death, Aug. 26, 1813, he wrote his famous *Das Schwertlied* (Song of the Sword). His songs were collected under the title of *Leier und Schwert* (Lyre and Sword), 1814; Eng. trans. W. B. Chorley, 1834.

KORNILOFF, LAVR GEORGIEVITCH (1870-1918). Russian soldier. The son of a Cossack officer, he served as a volunteer with the Boers



L. G. Korniloff, Russian soldier

in the South African War, and also took part in the Russo-Japanese War. During the Russian retreat from the Dunaetz, Korniloff, with the 48th division, broke through the Austro-German encirclement and rejoined the main Russian forces, then retreating to the San. After the Revolution he first held the Petrograd command, then became commander-in-chief of the Russian Eighth Army, and played a magnificent part in the Russian offensive of July, 1917. After being made commander of all the southwestern armies, he replaced Brusiloff as generalissimo. On the overthrow of Kerensky, Korniloff joined the Kuban Cossacks. He was killed in Caucasasia, March 31, 1918. See Kerensky.

KOSCIUSKO. Mt. in New South Wales. The highest peak in Australia (7,328 ft.), it is the enlminating point of the Muniong range, a group of the Anstralian Alps.

KOSCIUSKO, TADEUSZ (1746-1817). Polish soldier. Born in Lithuania, Feb. 12, 1746, he entered the Polish army, and in 1777 went to America to fight for the colonists against the British. In 1792 he distinguished himself in the war with Russia by bolding out for five days at Duhienka, with 4,000 men against 18,000. In the Polish rising of 1794, Kosciusko was made dictator, and the peasant army defeated the Russians at Raclawice. Warsaw was soon in his hands, but the Russians were reinforced by the Prussians, and the Poles suffered defeat at Maciejowice, Kosciusko being taken prisoner. In 1796 he was released, and visited England, America, and France in turn. He died Oct. 15, 1817. Pron. Kos-yus-ko. Consalt Life, M. M. Gardner, 1920.

KOSHER (Hebrew, fit). Jewish term for what is ceremonially clean. The word is applied both to food and to the vessels in which it is prepared. Kosher meat is that of a beast slaughtered by a licensed butcher according to the Mosaic law. Kosher wine is made from grapes grown in Palestine, and must be prepared solely by persons who are of the Jewish faith.

KOSSOVO OR **KOSOVO POLJE**. Plain of Serbia, also known as Amselfeld, or the field of blackbirds. It stretches S.W. from the river Ibar, and is bounded W. by the Albanian Mts., E. by the Sitnitze, and S. by the Shar Dag. During Turkish rule there was a vilayet of Kossovo, more extensive than the plain, particularly towards the N.

In the first Balkan War the Serbians defeated the Turks several times in this district in Oct., 1912. During the Great War

the plain was the scene of the last stand made by the Serbs, particularly at Prizren, in Nov., 1915, to cover the retreat into the Albanian Mts. Prizren and Mitrovitz (Mitrovica) were recovered by the Allies (French), Oct. 12, 1918. See Serbia.

KOSSUTH, LAJOS OR **LOUIS** (1802-94). Hungarian patriot. Born at Monok, in N.E. Hungary, Sept. 19, 1802, Kossuth studied law at Budapest and first sat in the national diet at Pressburg in 1825. His enthusiasm for the Hungarian national cause early attracted attention and the revolution of 1848 brought him into the forefront. He became minister of finance, and his appeal for a national army to resist the invading Serbs and Croats raised a force of over 200,000 men.

On Sept. 28 he became responsible for national defence, and his oratory fired the soldiers to the successes of April, 1849. It was then that his famous declaration of independence sent a thrill of inspiration throughout Europe, but early in Aug., realizing that surrender to Austria was inevitable, he abdicated. After spending some time in Asia Minor, he came to England through France, meeting with an enthusiastic welcome in both countries, 1851. In Dec., 1851, he began a violent propaganda campaign against Austria in the U.S.A. The rest of his life was spent in exile, and he died at Turin on March 20, 1894.

His son, Ferencz Lajos Akos Kossuth (1841-1914), was elected to the chamber in 1895. He was prominent in opposition from 1896-1905, notably by his obstructive tactics against the army bills in 1902. He became minister of commerce in 1906, and died at Budapest, May 25, 1914. Pron. Kosh-oot.



Lajos Kossuth, Hungarian patriot

KOTZEBUE, AUGUST FRIEDRICH FERDINAND VON (1761-1819). German dramatist. Born May 3, 1761, at Weimar, he studied law, and held official appointments at St. Petersburg and Reval. The remarkable success of his play *Menschenhass und Reue* long popular in England as *The Stranger*, 1790, decided him to write almost exclusively for the theatre. He produced upwards of 200 plays, and was made director of the St. Petersburg Theatre. From 1816 till his death he lived in Germany as a Russian secret service agent, and on March 23, 1819, he was assassinated at Mannheim by a student, whose indignation had been aroused by Kotzebue's History of the German Empire.



A. F. F. von Kotzebue German dramatist

Three sons of Kotzebue attained distinction: Otto von Kotzebue commanded a Russian expedition in search of a N.E. passage, 1815-18, in the course of which the N. coast of Alaska was explored, Kotzebue Sound was discovered, and much geological and botanical knowledge was acquired. Wilhelm von Kotzebue was Russian minister at Dresden, 1870-80, and wrote dramas under the pen-name Wilhelm Augustsohn. Alexander von Kotzebue painted a series of historical pictures for the Winter Palace in St. Petersburg illustrating Russian victories. Pron. Kotseboo.

KOUMISS. Fermented beverage made from mare's or camel's milk by Asiatic nomad peoples. In Europe and America koumiss is also prepared from cow's milk. It has a curious acid taste and is valuable in medicine as a diuretic, and as an article of diet in wasting diseases, e.g. phthisis.

KOVNO OR **KAUNAS**. Town of Lithuania. It is on the N. side of the Niemen (Nemunas), 60 m. N.W. of Vilna, and is the seat of the government. The university was opened in 1922. There are breweries, bone-grinding mills, and wire and nail factories. Kovno was founded in the 11th century, and till the end of the 16th was the great cereal mart of Lithuania. It was captured by the Austrians in the Great War, Aug., 1915. Pop. 97,000.

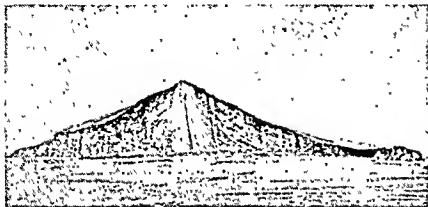
KOWEIT OR **KUWAIT**. Seaport on the Arabian side of the Persian Gulf. Standing at the head of the gulf, with a fine barharour, it was originally designated as the terminus of the Bagdad railway, but in this respect has been largely superseded by Basra. It is the chief town of a state extending along the Persian Gulf from Iraq to Nejd, ruled by an independent sheikh, who has friendly relations with Great Britain. Pop. 50,000. See Bagdad Railway.

KOWLOON. Former city of China. It gives its name to the peninsula in which it is situated, immediately opposite Hong Kong. Kowloon was outside the territory originally ceded to Britain in 1860, and when in 1887 a customs cordon was established on the boundary to check smuggling, Kowloon frequently became the general name for all the stations. With the extension of the colony's boundaries in 1898 the customs stations were removed outside the limits of the leased territory, but retained the original name. See Hong Kong.

KOWTOW OR **KOTOW** (Chinese, knock-head). Chinese salutation expressing homage, respect, or worship, performed by kneeling and touching the ground with the forehead. The kowtow to the emperor consisted in kneeling thrice and knocking the forehead on the ground nine times. After Lord Amherst's refusal to kowtow in 1816, the word came to be used in English for obsequiousness.

KRAAL (Dutch) Group of huts built round a cattle enclosure, often stockaded with timber or mud. It is the typical Hottentot and Kaffir village. It may denote the community itself, and, by extension, an encampment formed on the march, defended by palisading and wagons. Pron. krahll.

KRAKATOA. East Indian island, in Sunda Strait, between Sumatra and Java. During the second half of the 18th century a volcanic eruption had made a crater the vent of which had become plugged with solid lava. In 1883 a tremendous eruption blew two-thirds of the island to fragments, and left exposed part of the wall of the ancient crater, a cubic mile of material being hurled into the air. The sound of the explosion was heard in Australia. In Jan., 1928, the volcano was again in eruption.



Krakatoa. Cliff showing vent and structure of the original crater as exposed by the eruption of 1883

KRASSIN, LEONID BORISOVICH (1870-1920) Russian official. Born in Siberia, he studied engineering at the Technological Institute, St. Petersburg, from which he was expelled owing to his advocacy of revolution. He was arrested at Viborg in 1907, but escaped to Berlin and was later pardoned. He went to Brest-Litovsk with Lenin and Trotsky to negotiate the peace treaty with Germany, March, 1918, and was commissary of food in the Soviet army, and later minister of commerce and industry. He went to London in May, 1920, as head of a commercial mission, and after undertaking other missions was Soviet chargé d'affaires in London from Oct., 1925, until his death on Nov. 24, 1926.

KREISLER, FRITZ (b. 1875). Austrian violinist. Born in Vienna, Feb. 2, 1875, he studied in Vienna and Paris, and when only 14 years old made a successful concert tour in the U.S.A. He chose the army as a profession, and entered the Uhlans, but forsook this to return to his violin, and the performances he gave in America and Europe after 1899 ranked him among the greatest living masters of his art. In the Great War he fought in the Austrian infantry and artillery, but reappeared at the Queen's Hall, London, 1921, and in subsequent years.

KREMLIN (Russ. Kreml). Name of the citadel or acropolis of old Russian towns, the most famous being that of Moscow, to which the term is specially applied. It is triangular in shape, on a hill 125 ft. high, and surrounded by a wall $\frac{1}{2}$ m. long and 65 ft. high. It contains a number of palaces, offices, ecclesiastical buildings, and open spaces. Amongst these are the Uspenski Cathedral (1474), where the tsars were crowned; the Arkhangelski (St. Michael), the burying place of the tsars down to the time of Peter the Great; and the Chudov monastery, remarkable for the bell-tower (320 ft. high) of Ivan the Great. The palaces are mostly of modern date. See Moscow.

KREUZER. Name given to an Austrian and a German coin. The Austrian kreuzer, now obsolete, was a copper coin, equal to the

hundredth part of a guilder. Its nominal value was the fifth of a penny. The German kreuzer, originally of silver, and afterwards of copper, was current in S. Germany till 1876, and was equal to about one-third of a penny.

KRIEMHILD OR **CHRIEMHILDE.** Heroine of the German epic, Nibelungenlied. A sister of Gunther, king of Burgundy, she is wooed by Siegfried, master of the Nibelungs' hoard, and marries him after he has won Brunhild (q.v.) for Gunther. Siegfried is treacherously murdered by Hagen, a Burgundian chief, who sinks Kriemhild's dowry, the Nibelungs' hoard, in the Rhine. Kriemhild marries Etzel (Attila), king of the Huns, but nurses her vengeance many years, and finally causes the Burgundians, including her brother, to be slain. She is killed by Hildebrand. See Nibelungenlied.

KRIS, CREASE, OR CREESE. Malay weapon. It is a dagger or knife of varying size and shape, sometimes straight, long, and narrow, but frequently made with a wavy or sinuous blade. The hilt, generally of wood or ivory, and scabbard are sometimes highly ornamented.

KRISHNA OR **CRISHNA.** God of the Hindus, sometimes regarded as an incarnation of Vishnu, and sometimes as Vishnu himself. His story is set forth in the Indian epic of The Mahabharata. He is represented as trampling upon the head of a snake, and playing a flute, while holding the tail of the snake with one of his four hands. See Hinduism.

KRITHIA. Village of Gallipoli, 4 m. N.E. of Cape Helles, near the S. end of the peninsula. It gives its name to a series of battles fought between the Allies and the Turks during the campaign in Gallipoli, 1915, for its possession. After the landing of the Allies, April 25-26, Sir Inn Hamilton decided to push on, his objective being Krithia, with Aeli Baba (q.v.), a peak, a short distance to the N.E. The advance began at 8 a.m., April 28, and within two hours the British had moved forward 2 m., but were held up by a strong work. On April 29-30 the line was consolidated and held against Turkish attacks.

Hamilton's next attempt on Krithia took place on May 6-8. The battle resulted in an advance by the Allies of more than 1,000 yds., but with the Turks still in possession of their main position.

In July Hamilton again attacked, and accomplished his purpose of holding the Turks on this front while the main operation was proceeding in the N. at Suvla. The last attack of any importance in this part of Gallipoli took place on Nov. 15, when the enemy's trenches were carried. See Dardanelles; Gallipoli.

KRONBORG CASTLE. Building near Elsinore, Denmark, associated with Hamlet. Of Gothic design, it was built by King Frederick II about 1600 for a royal residence. Later it was used as barracks, but in 1928 it was restored to its original condition.

KRONE (Ger. crown). Monetary unit of Austria and Hungary. Its nominal value was about 10d. Divided into 100 heller (Hung. filler), it was introduced to the Austro-Hungarian currency in 1892, taking the place of the old system of kreuzer and guilder. In 1925 in Austria the place of the krone was taken by a new unit, the schilling.

The krone or krona (Scandinavian crown) is also the monetary unit of Norway, Sweden, Denmark, and Iceland. It is divided into 100 øre, and was adopted as the common unit of these countries by the treaties

of 1873 and 1875. Its nominal value is about 1s. 1½d., or 18 to the £ sterling.

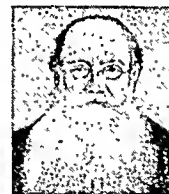
Kronstadt. Former name of the town of Rumania, in Transylvania, now known as Brasov (q.v.).

KRONSTADT. Seaport of the Russian Soviet republic. It is in the Leningrad area, 20 m. W. of Leningrad, on the island of Kotlin, opposite the mouth of the Neva, in the Gulf of Finland. Kronstadt is the commercial harbour of

Leningrad, with which it is connected by canal. The town and port were founded by Peter the Great in 1703. After the revolution of 1917 its local govt. was taken over by a committee of workmen and soldiers' delegates, who opposed the provisional government. In March, 1921, a revolt against the Moscow government, engineered by sailors of the port, was put down by the Red troops of the government. Pop. 21,243. See Russia.

KROONSTAD. Town of the Orange Free State, S. Africa. It is on the Valshe River, 129 m. N.W. of Bloemfontein, and 878 m. from Cape Town, and is an important rly. junction and the centre of a farming district. During the S. African War it was temporarily the capital of the Orange Free State, until the British entered it, May 12, 1900. In the vicinity are coal mines. Pop. 4,250 whites.

KROPOTKIN, PRINCE PETER ALEXEVITCH (1842-1921). Russian revolutionary and geographer. Born in Moscow, Dec. 9,



Prince Kropotkin, Russian revolutionary

1842, he belonged to a noble family and became a soldier. He spent some time in Siberia, where his travels yielded valuable scientific results and made him known as a geographer. When, in 1867, he returned to Russia, he was a revolutionary, and, having joined the international founded in Switzerland by Bakunin, he began to preach revolution in Russia. He was put in prison in 1874, but escaped in 1876. He then worked for the cause of revolution in Switzerland and France, where he spent three years in prison. On his release he settled in London. He returned to Moscow in 1917, and he died there Feb. 8, 1921. Among Kropotkin's writings, most of which have been translated into English, are *Memoirs of a Revolutionist*, 1899; *Mutual Aid*, 1902.

KRU OR **CROO.** Negro people occupying scattered villages along the Liberian coastland, W. Africa. They have for generations served in the W. coast trade as surf boatmen and cargo-lifters and on European vessels, where they are dubbed Krumen or Krooboyes. They have urban colonies in Monrovia and Sierra Leone, and nearly all speak English.



Kronstadt, Russia. The great Naval Cathedral, built in 1903-13



Kru man from Liberia

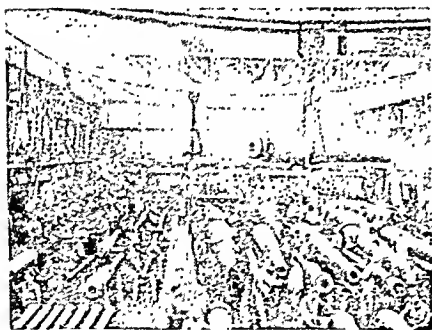
KRÜDENER, BARBARA JULIANA DE WIETENHOFF, BARONESS DE (1764-1824). Russian philanthropist and mystic. Born at Riga, Nov. 11, 1764, at an early age she married Baron von Krüdener who became ambassador at Berlin and Venice. There a secretary of legation fell in love with her and committed suicide, an incident which suggested her romance, Valérie, 1803. She separated from her husband in 1792. Influenced by the teaching of J. H. Jung (Jung Stilling), J. F. Oberlin, and Mme. Guyon, she preached a system of quietism and mystical piety. To the tsar Alexander I she suggested the title for the Holy Alliance. She died Dec. 25, 1824.

KRUGER, STEPHEN JOHN PAUL (1825-1904). Boer politician. Born in the Colesberg dist. of Cape Colony, Oct. 10, 1825. He trekked into the Transvaal with his father in 1836. Kruger soon became active in the politics of the little state, and in 1883 he was chosen president of the Transvaal, being re-elected in 1888, 1893, and 1898. The opening of the gold mines brought a new train of questions that required real statesmanship for their solution, but it fell to Kruger to conduct negotiations with Britain about the position of the Uitlanders in the Transvaal. The result was the South African War. In Oct., 1900, Kruger fled to Holland, and in 1902 he wrote his Memoirs. He died at Clarens, Switzerland, July 14, 1904. See Jameson Raid; South Africa; Transvaal.



Paul Kruger,
Boer politician

KRUGERSDORP. Town of the Transvaal, S. Africa. It is on the rly., 20 m. from Johannesburg, and is the chief town on the western part of the Rand. The main industry is gold-mining. Manganese deposits have been found. The town, which was named after Kruger, was occupied by the British on June 13, 1900. Pop. 14,524 whites.



Krupp. Interior of a gun-shop in the munition works of Krupps during the Great War

KRUPP. Name of a German family famous for its connexion with the iron and steel industry. Friedrich Krupp (1787-1826) a native of Essen, was employed in the ironworks there. With a partner, Friedrich Nicolai, he began to make cast steel by a secret process in 1812. The business was continued by his son Alfred (1812-87), under whom it became one of the greatest in the world. His son, Friedrich Alfred Krupp (1854-1902), the next head of the firm, left an only child, Bertha, who married in 1906 Gustav von Bohlen und Halbach, who became the head of the firm.



Alfred Krupp,
German inventor and
steel manufacturer

Just before the Great War Krupps employed 80,000 workpeople. Following the armistice the firm turned its attention to all kinds of engineering work. The manufactures include railway engines, wagons, motor cars, dynamos, agricultural machinery, and cash registers

KRYPTON. Element contained in the atmosphere to the extent of one part in 20 millions. It has also been separated from the gases evolved from various mineral springs. Its symbol is Kr, atomic weight 82.92, and atomic number 36. Krypton is recognized by the brilliant yellow and green lines which it shows in the spectrum.

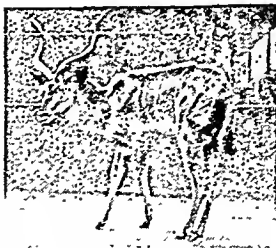
KUBELIK, JAN (b. 1880). Bohemian violinist. Born at Miehle, near Prague, July 5, 1880, Kubelik was an infant prodigy with the violin. He studied at Prague, and after a successful appearance in Vienna in 1898 made a tour in Italy. A visit to America, 1902-3, made him known, and he was recognized as one of the leading violinists of his day.



Jan Kubelik,
Bohemian violinist

KUBLAI KHAN OR KUBLA KHAN (1216-94). First Mongol emperor of China. Grandson of Jenghiz Khan (q.v.), he became grand khan of the Mongols in 1250, and completed the conquest of N. China, 1260, and S. China, 1279. He founded the Yuen dynasty, which lasted until 1368, and set up his capital on the site of what is now known as the city of Peking. He made Buddhism the state religion of his empire, and Marco Polo was for many years in his service. The magnificence of his court inspired Coleridge's unfinished poem, Kubla Khan. See China; Mongol.

KUDU (Strepsiceros koodoo). Species of large antelope, found in Africa. Its colour is reddish brown, with vertical white stripes; its horns are long and twisted like a corkscrew. The neck has an upstanding mane, and a fringe of hair hangs from the throat. It is about 4½ ft. high at the shoulder. It is usually found among the hills, and feeds upon grass and shoots. The lesser Kudu (S. imberbis) is similar, but bears no fringe on its neck. See Antelope.



Kudu. Specimen of the Lesser Kudu of Somaliland
Photopress

KUFAH. Town in Iraq (Mesopotamia), 90 m. S. of Bagdad. Originally founded as a military station in A.D. 636, it became a seat of learning, and was long the residence of the caliphs of Bagdad. As Bagdad grew in importance, Kufah fell into decay.

Kufic, the old Arabic script, is so called from Kufah. It was used in the earliest copies of the Koran, but has been superseded by Neskhi in eastern Islam.

KUFRA OR KUFARA. Oasis of the Libyan desert. It is the headquarters of the powerful Mahomedan sect of the Senussi. Until the conquest of the central Sudan by the French, completed by the Allies in the Great War, this district was less explored than any outside the Polar regions. In Jan., 1921, Mrs. Rosita Forbes after a perilous journey reached Kufra, only once before visited by Europeans. She returned across a stretch of desert never before traversed except by Arabs. See Forbes, J. R.

KU-KLUX KLAN (Gr. kyklos, circle). Secret society formed in the Southern States of America in the period of reconstruction following the Civil War. It originated at Pulaski, Tennessee, in 1865, as a secret social club of young white men, and became a secret police force with an elaborate constitution, the main purpose of which was to oppose coloured influence in government and society. To control the negro, play was made upon his superstitions. Undesirable whites, as well as blacks, were driven away, ostracised, or murdered.

In 1915 the Ku-Klux Klan was revived in Georgia, as a fraternal organization, and spread from the South to the North soon after the close of the Great War. The society now stands for 100 per cent Americanism.

KULADAN. River of N.W. Burma. After a course of 200 m. it enters the bay of Bengal, 15 m. N.E. of Akyab. The lowest 90 m. are usually navigable.

KUM OR KOM. Oasis town of Persia. The capital of an administrative district of the same name, it lies 80 m. S.S.W. of Teheran. Its main importance is that it is one of the sacred places of the Shia Mahomedans, who make pilgrimages to it.

KUMASI.

Capital of Ashanti. It is connected by rly. with Sekondi and Accra, the Gold Coast ports. Pop. about 20,000.

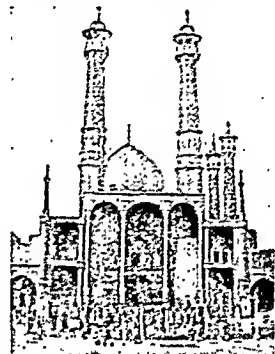
At the end of the 3rd Ashanti war, 1895-96, Ashanti was made a British protectorate, a resident being appointed at Kumasi. In March, 1900, tribal fighting broke out, and Kumasi was besieged while occupied by the governor, Sir Frederiek Hodgson, and a small garrison. The governor and his staff cut their way through the enemy's lines and reached Accra, and Kumasi was relieved on July 15, after two days' severe fighting, by a force under Col. Willcocks. When the rising had been subdued, the country was annexed, Sept., 1901. See Ashanti.

KUN, BELA (b. 1886). Hungarian politician. Of Jewish parentage, he fought in the Great War until taken prisoner by the Russians. On the conclusion of peace he returned to Hungary, founded a paper, and became an exponent of Bolshevik ideas. For a few months in 1919 Hungary was a Bolshevik republic under his control. In 1927 he again created trouble in Hungary, but was deported to Russia. See Hungary.

KUOMINTANG. Name of a Chinese political party, prominent from 1927. It exists to further nationalist ideas, as laid down by Sun Yat Sen, by freeing China from all foreign influences. The party is strongest in the south, but in 1928 it defeated Chang Tso Lin and got possession of Peking, being then in control of nearly all China proper. See China.

KURD. People of mixed stock in the upland region, called Kurdistan, between Armenia and Mesopotamia. A slender, straight-nosed, moustached, long-headed people—the last feature emphasised by head-deformation in the cradle—they descend from the neolithic Mediterranean brown race. Their most famous seign was Saladin. They number about 1,500,000.

In its widest geographical meaning Kurdistan includes the mountainous region reaching



Kum. Famous Persian mosque known as Fatima's shrine

from the head-waters of the Euphrates to the shores of Lake Urmia, and from S. of Lake Van into Mesopotamia, inhabited by the various Kurdish tribes.



Kurd from uplands of Kurdistan

Kurdistan was prominent in the fighting between Russia and Turkey, 1914-17. By the treaty of Sèvres, 1920, Turkey accepted a scheme of self-government for the Kurdish areas. In Feb., 1925, a revolt of Kurds, which was led by Sheikh Said, against the Turkish government's administration of Kurdistan broke out, but the agitation soon subsided. The Kurds are now peacefully settled under Turkish, Persian, and Iraq rule.

KURIA MURIA ISLANDS. Group of five islands off the S. coast of Arabia. They are about 750 m. N.E. of Aden, to which they are attached Area, 29 sq. m. They were ceded to Great Britain in 1854 by the sultan of Muscat as a landing place for the Red Sea cable. Inhabited by a few Arabs, they are mostly barren, but contain deposits of guano.

KURILE OR KURIL ISLANDS (Jap. Chishima). Fescion of islands of N. Japan. It includes about 30 volcanic islands, and stretches for 150 m. N.E. from Japan to Kamchatka. The chief islands are Etorofu (Etorop), Paramoshiri (Paramusir), Kunashiri, Urup, Shimoshiri (Simusir), and Onnekotan. They are hilly, with steep cliff coasts; the S. islands are inhabited and contain forests. The fisheries are valuable. The people are Ainu and Gilyaks. The area is 6,193 sq. m.; pop. about 5,000. See Japan.

KURNA OR QURNAIL. Village of Iraq. It is on a narrow point of land some 35 m. N. of Basra (q.v.), at the junction of the Tigris and Euphrates. In the Great War it was of commanding military importance on account of its situation. Here, on Dec. 4-8, 1914, a battle was fought between the British and the Turks, resulting in the surrender of the latter. In April-May, 1915, the Turks attacked the British at Kurna, but were defeated. As they were still menacing the British forces based on Kurna, Townshend attacked them, and two battles were fought, Amara by Townshend, and Nasrieh, or Nasiriyeh, by Gorrington, in which the British dispersed the enemy. See Mesopotamia.

KUROKI, TAMESADA, COUNT (1844-1923). Japanese soldier. He fought in the Civil War of 1877 on the imperial side, served with distinction in the war with China in 1894-95, and during the Russo-Japanese War (1904-5) commanded the first army. He was responsible for the victory of the Yalu, and also participated in the battles of Liao-Yang and Mukden. Created a count in 1905, he died on Feb. 4, 1923.

KUROPATKIN, ALEXEI NIKOLAEVITCH (1848-1925). Russian soldier. Entering the army in 1864, he served during the Russo-Turkish War (1877-78), and in 1880-81 distinguished himself by a brilliant march to Geok-Tepe and at the storming of the fortress. In 1898-1904 he was minister of war, and in 1904 was in command in the war with Japan. Early in the Great War he was commander-in-chief of the armies on the northern front, but in Aug., 1916, was appointed governor of Turkistan. A year later he was arrested by the committee of the soldiers' delegates on a



A. N. Kuropatkin, Russian soldier

charge of fomenting trouble between the Russian colonists and the natives. His death was announced in January, 1925.

KUT. Popular abbreviation of the proper name Kut-el-Amara. It is a town of Iraq (Mesopotamia), on the Tigris, 290 m. up the river from Basra. It is all but encircled by the river, which forms a U-shaped loop here. Until the Great War it was a drab, insanitary collection of squalid buildings and mud huts, inhabited by a few thousand Arabs. Destroyed in 1915-17 by gunfire, it was reconstructed by the British after the conclusion of the war. Near is a cemetery containing the graves of the 1,746 British and Indian soldiers who died of wounds and disease during the siege, Dec. 4, 1915, to April 29, 1916. Pop. 7,000.

Kut was an objective of the British forces in their campaign in Mesopotamia in 1915. The first battle of Kut was fought Sept. 26-28, 1915. The British troops began their advance on Aug. 1 and on Sept. 16 reached a point 15 m. below Kut. On Sept. 26 they moved forward to within 4 m. of the Turkish position, and on the 28th gained a complete victory.

After his failure at Ctesiphon, Nov. 22, 1915, Townshend's forces retreated to Kut, reaching it on Dec. 3. The Turks towards the end of the month completely invested the town. Despite repeated attempts by British columns to relieve it, Kut was surrendered to the Turks, April 29, 1916.

In Dec., 1916, operations were begun for its recapture, and on Dec. 13 General Maude, now in supreme command and with a well-equipped army, concentrated a force on the S. side of the Tigris, about 7 m. from Kut. The town was entered by the British on Feb. 23, 1917. See Bagdad; Maude, F.; Mesopotamia; consult also My Campaign in Mesopotamia, Sir C. Townshend, 1920.

KYD, THOMAS (c. 1558-1594). English dramatist. The son of a London scrivener, he was educated at Merchant Taylors' school. He translated Garnier's tragedy *Cornélie*, and was the author of *The Spanish Tragedy*, a popular Elizabethan play of revenge which, in a measure, anticipated Shakespeare's *Hamlet*. The lost pre-Shakespearean play of *Hamlet* is usually ascribed to him. His works were edited by F. S. Boas, 1901.

KYLE. District of Ayrshire. One of the old divisions of the county, it lay between the rivers Doon and Irvine. It was divided by the Ayr into King's Kyle and Kyle Stewart.

KYLEMORE. Pass, lough, and castle of co. Galway, Irish Free State. They are in the N.W. of the co. between Letterfrack and Lecanane. Kylemore Castle is a picturesque castellated structure.

Kyles of Bute. Narrow, curved channel separating the island of Bute (q.v.) from the mainland of Argyllshire Scotland.

KYNETON. Township of Victoria, Australia. On the Campaspe river, 57 m. by rail N.W. of Melbourne, it is a favourite tourist resort and also an agricultural and gold-mining centre. Pop. 3,000.

KYOTO. Town and former capital of Japan. On the island of Honshu, it is 27 m. by rail from Osaka. It receives water used for electrical and irrigation purposes by a canal from Lake Biwa. The manufactures include bronze and cloisonné ware, fans, silks, and



Kyoto. 1. Great Hexagonal Temple. 2. Street with a fabulous stone creature at entrance to a temple

lacquer goods. It is the seat of a university. Kyoto was founded in A.D. 794 from which date until 1869 it was the Japanese capital. Pop. 679,976. See Japan.

KYRIE ELEISON (Gr. Lord, have mercy). Form of supplication frequently used in the services of the Christian Church, and sometimes called the lesser Litany. It is common to all ancient liturgies, and was repeated three times, as being addressed to each Person of the Holy Trinity.

KYRLE, JOHN (1637-1724). English philanthropist, commonly known as The Man of Ross. Born at Dymock, Gloucestershire, May 22, 1637, he was educated at Balliol College, Oxford, which he left to settle on his estate in Ross, Herefordshire, becoming a benefactor to the poor. He died Nov. 7, 1724. He is best known from his eulogy in Pope's Third Moral Epistle, 1732.

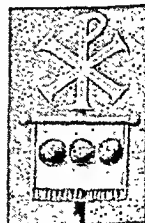
The Kyrle Society is a British philanthropic organization founded in 1877 and named after John Kyrle, its aim being to brighten the lives of the poor.

L. Twelfth letter of the English and Latin alphabets, one of the two liquid consonants, R being the other. When sounded it has the soft sound heard in lamp, let. It is silent in many words, e.g. calf, could, half, talk. As a symbol in chemistry L = lithium; in Roman notation L = 50; and in financial usage £ represents pound or pounds sterling. L is the name given to a class of British submarines, and was sometimes used for a class of British destroyers built 1911-13, e.g. *Laertes* and *Lance*; also for a former type of German airships. See Alphabet; Phonetics.

LAALAND OR LOLLAND. Island in the Baltic, belonging to Denmark. Its area is 447 sq. m. It lies between Falster and Langeland, and is separated from Schleswig by the Fehmarn Belt. As its name (lowland) implies, it is low and level, its maximum alt. being only 95 ft. The soil is fertile, and there are forests of oak and beech. It has a broken coastline, and contains a few small lakes. Mariho is the chief town. Pop. 86,614.

LABADIE, JEAN DE (1610-74). French mystic and religious reformer. Born Feb. 13, 1610, he was educated at the Jesuit College at Bordeaux. Separating from the order in 1639, he became a popular preacher. Preacher and professor of theology at Montauban, he was pastor at Geneva and Middelburg, where in 1666 he started the community known as the Labadists. Suspended in 1668 for refusing to subscribe to the Belgic Confession, and expelled, he settled at Herford, Westphalia, where he drew up a regular organization for his followers, who, however, were banished in 1672 to Altona, where Labadie died, Feb. 13, 1674. The Labadists, who practised community of goods, soon disappeared.

LABARUM. Standard of the Roman army in Christian times. It is said to have been adopted by Constantine the Great after his conversion to Christianity. According to Eusebius, the labarum consisted of a spear, surmounted by a cross-piepe, from which was suspended a square silken banner. It bore the monogram XP, the first two letters of the Greek Christos.



Labarum. Roman standard adopted by the Christian emperors. Adopted from a coin of Constantine

LA BASSÉE. Town of France. In the dept. of Nord, it is 16 m. S.W. of Lille on the La Bassée Canal. Before the Great War it was a busy industrial and mining centre with a population of 4,800. It remained for nearly four years one of the strongest positions in the German northern sector of France, and was reduced to ruins during the fighting. It was also a strong position during Marlborough's campaigns against France. La Bassée has been rebuilt, and has a pop. about 34,000. It has been adopted by Preston.

From Oct. 16-30, 1914, heavy fighting, to which the name battle of La Bassée is sometimes given, took place between the British and Germans, but without result. The district was also the scene of fighting later in the war.

LABICHE, EUGÈNE (1815-88). French dramatist. Born May 5, 1815, he produced his first drama at the Panthéon Theatre, Paris, in 1838, and thereafter, until 1877, produced, in collaboration with other writers, nearly a hundred comedies and vaudevilles, e.g. *Le Chapeau de Paille d'Italie*, *Le Voyage de M. Perrichon*, *La Cagnotte*. They were published in 10 vols., 1878-79, and had an immense vogue, with the result that Labiche was elected a member of the Academy in 1880. He died Jan. 23, 1888. Pron. La-beesh.

LABORI, FERNAND GUSTAVE GASTON (1860-1917). French lawyer. Born at Reims, April

18, 1860, he became a barrister, and was soon the most famous advocate of his day. He defended Dreyfus and Zola, and later Madame Humbert and Madame Caillaux. In 1906 he was elected to the Chamber of Deputies, and he was still a member when he died suddenly during its sittings, March 14, 1917.



F. G. G. Labori,
French advocate

LABOUCHERE, HENRY DUPRÉ (1831-1912). British politician and journalist. Born in London, Nov. 9, 1831, he was for a time in the diplomatic service. In 1865 he entered the House of Commons as M.P. for Windsor, but was soon unseated; for a short time he represented Middlesex, but his real parliamentary career covered the years between 1880-1906, when he was Radical M.P. for Northampton. In the House he was a remarkably candid critic.



Henry Labouchere,
British politician
Elliott & Fry

As a journalist he was correspondent for *The Daily News* in Paris during the siege of 1870-71. In 1870 he established *Truth*, and in that organ was a fearless critic of what he considered sham and humbug. He died Jan. 15, 1912.

LABOUR. Term used for those who work for others, usually for wages and under the industrial system, as opposed to the capitalists who employ them.

The Labour movement is the movement by which these classes and their friends have tried, and to a great extent have succeeded, in improving the condition of the mass of the people. It is essentially a product of the 19th century, an inevitable sequel to the industrial revolution, of the 18th, and is linked with the history of the trade unions. The extension of the franchise in 1832, and especially in 1872, helped the Labour movement, but for a time only indirectly. In 1874 two trade unionists, Alexander Macdonald and Thomas Burt, were returned to Parliament.

After the extension of the franchise in 1884 the Labour movement became more political

and socialistic in its aims. The trade unions had secured most of their demands, and were soon, in 1906, to be placed in an exceptional position before the law. A great mass of legislation, by giving the working classes shorter hours of labour, education, and other advantages, had opened the door to a wider life for millions, and many of them looked definitely to the day when Labour should become the controlling power in the state.

In 1892 three socialists were returned to Parliament, and at each succeeding election their numbers were increased. They called themselves Labour members, and in 1923, having more representatives in the House of Commons than the Liberals, they became the official opposition. In 1924 a Labour government, although without a clear majority, took office for the first time. Its tenure was brief, but in 1929, as the result of the general election, another Labour government, also a minority one, was formed.

LABOUR, MINISTRY OF. Department of the British government set up in 1916. It took over certain work from the board of trade and from the treasury, and is responsible for industrial arbitration, employment exchanges, labour statistics, and the like. The offices are at Montagu House, Whitehall. Its head is the minister, who, with a salary of £2,000 a year, is assisted by a parliamentary secretary and a permanent secretary.

LABOUR DAY. Day set apart for labour demonstrations. Since 1890, the year of the Berlin labour congress, it has been held on May 1 in most European countries, when processions and demonstrations are organized and the aims of the labour parties are reiterated.

Labour Day is a legal holiday in the U.S.A. and Canada, and is held on the first Monday in Sept. It is a holiday in the Australian states on varying dates.

LABOURDONNAIS, BERTRAND FRANÇOIS, COUNT MAHÉ DE (1699-1753). French sailor. Born at St. Malo, Feb. 11, 1699, he entered the French East India Company in 1718, and rose rapidly to the command of a vessel. In recognition of his gallantry in the capture of Mahé, Malabar, 1724, he was given permission to take the name of that town, and, after several years fighting in the Indies, in 1735 was appointed governor of the Îles de France and de Bourbon. He distinguished himself in the war with Britain, 1740-48, but a quarrel with Duplex ended his public career. He died Nov. 10, 1753.

Labour Exchange. Name by which the employment exchanges (q.v.) were known from their establishment in 1910 to 1916.

LABOUR PARTY. Name given to a British working-class organization which may include non-manual workers. It is socialist in policy, and is organized for the purpose of securing parliamentary representation.

It is composed of the chief socialist organizations, excluding the extreme sections, and became in 1914 politically the central socialist body. The Independent Labour Party (q.v.) is a distinct organization. There is a labour party organized for parliamentary representation in Australia and other of the British dominions, as well as the U.S.A. and Germany. The British labour party holds an annual conference, which meets usually in the autumn. Its headquarters are at Transport House, Westminster, London, S.W.1.

LABRADOR. Dependency of Newfoundland, forming part of the great peninsula N. of the Gulf of St. Lawrence between Hudson Bay and the Atlantic. The boundary, with Quebec, long in dispute, was settled by the judicial committee of the privy council in 1927, as being, in effect, the watershed of the rivers running into the Atlantic. The coast boundaries are Blanc Sablon on the S. and Capo Chidley on the N. The area is some 110,000 sq. in. The coastline is bare and rugged, the climate is cold, and fishing and hunting are the only industries. The name comes from a Portuguese word meaning farmer. Pop. 4,054, mainly Eskimos.

LABRADORITE. Variety of felspar, consisting of aluminium, calcium, and sodium silicate, found widely distributed in many crystalline rocks, e.g. basalt, gabbro, andesite.

LA BRUYÈRE, JEAN DE (1645-96). French writer. Born in Paris on Aug. 16, 1645, he became tutor in 1684 to one of the Condé family, whose lifelong patronage he retained. A friend of Bossuet and many other distinguished men, La Bruyère was elected a member of the Académie Française in 1693, and died on May 10, 1696.

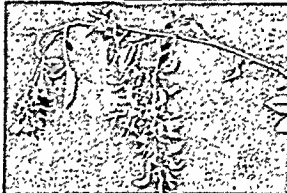
He is best known by *Caractères*, 1688, which consists of a medley of character studies and reflections on the personalities and morality of his times. His *Dialogues sur le Quiétisme* appeared in 1698.

LABUAN (Malay, anchorage). Island off the N.W. coast of Borneo. Administratively attached to the Straits Settlements, it is about 40 m. from Brunei and 725 m. from Singapore. Area 30 sq. miles.

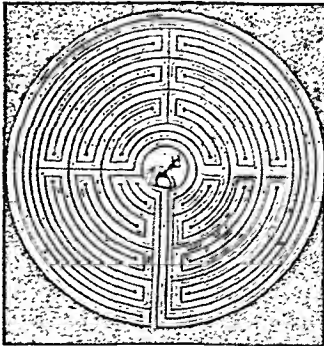
It has a fine port, Victoria Harbour. The surface is hilly and the soil fertile. Cattle and goats are reared and there are large sago factories. There are cables to Singapore, Hong Kong, and North Borneo. Labuan was ceded to Great Britain in 1846 by the sultan of Brunei. Pop. about 6,000. See Borneo; Brunei.



LABURNUM (Laburnum vulgare). Hardy flowering tree of the order Leguminosae. A native of central and southern Europe, it was introduced into Britain before 1597. It flourishes in any ordinary soil in a sunny position, and its long racemes of yellow flowers are familiar objects in the springtime in many gardens. The seeds are poisonous. The wood is dark brown in colour, with a greenish shade towards the heart, and has a broad yellow sapwood. It is used in turnery work and also for inlaying.



Laburnum. Flower sprays and foliage. Above, fruit or seed-pods



Labyrinth. Facsimile of print showing circular labyrinth of Daedalus in Crete

Smith Square, The most famous labyrinths of ancient times were the Egyptian, described by

LABYRINTH. In Greco-Roman times a confusing network of paths or passages, generally underground, purposely designed so as to make it difficult for anyone who entered to get out again.

Herodotus, situated near Lake Moeris and constructed about 2300 B.C.; the site has been excavated and the foundation exposed by Sir Flinders Petrie. See Maze.

LAC on LAKH. Hindu word meaning a hundred thousand. It is chiefly used for 100,000 rupees, the nominal value of which is therefore £10,000. One hundred lacs is called a crore. See Rupee.

LAC. Name given to an insect, a dye, and a resinous material. The lac insect, *Coccus lacca*, is found in great numbers on the twigs of certain trees in India, China, and Japan. It covers itself with a resinous secretion from which are prepared the lacs of commerce. The secretion, known as gum-lac, stick lac, or shellac, is dissolved in water and the dye precipitated with lime and alum. The resin is washed and dried a number of times until it is completely separated from the colouring matter. Lac dye is a beautiful purple colour, secreted by the insect when alive. See Shellac.

LACCADIVE. Group of coral islands in the Indian Ocean. Belonging to the British Empire, they are administered from Madras and lie 170 m. W. of the Malabar coast. The five Amindivi islands form the N. group; the S. group includes the isolated island of Minicoy. The area is 80 sq. m.; pop 13,633.

LACCOLITE or **LACCOLITH.** Intrusive mass of igneous rock which has penetrated the strata of the earth's crust but has not reached the surface. The dome-shaped boss which is pushed above the general surface by the intrusion is a laccolitic mountain, e.g.,



Laccolite. Diagram illustrating the formation of a mountain when the strength of the earth's crust dams a volcanic outflow.

the Henry Mts. of Utah, where denudation has exposed the intrusive matter.

LACE. Lace, in the strict sense of the word, is an arrangement of twisted threads, and the simplest of all forms is seen in the shoe lace. Such laces are by custom regarded as separate from the more or less decorative laces used in apparel and in furnishings. Ornamental laces are made in many materials—cotton, silk, linen, worsted, artificial silk, and metallic threads. They are divided into real or hand-made, and mechanical or machine-made.

Two main methods of making lace by hand demand notice: (1) needle or point, and (2) pillow lace. The first-named approaches embroidery in nature, and is worked with the needle upon a foundation of fabric; the second requires the aid of a pillow or pad, into which pins are pressed in such a pattern as will form the design, and threads, contained on separate small bobbins, are twisted or plaited around the pins and each other. The machine-made laces repeat all, or very nearly all, the features of hand-made.

The first mechanical laces produced in England were made upon an adapted knitting frame in 1764. A great step forward was taken when John Heathcoat perfected, in 1809, his bobbin-net machine. It was an invention by John Leavers, a Nottingham mechanic, in 1813 that laid the foundations of the modern lace-manufacturing industry. This machine in its perfect form allows of the production of any pattern. Control of the pattern is secured by an adaptation of the Jacquard principle. The import duty on lace was abolished in 1930. See Loom.

LACE-BARK TREE (*Lagetta lintearia*). Tree of the order Thymelaeaceae. A native of Jamaica, it has oval leaves and white tubular

flowers. Its inner bark consists largely of concentric layers of interlacing fibres. By beating and maceration these layers may be



Lace-bark Tree. Foliage and flower sprays.

of the Eurotas valley in S. Peloponnesus, and for its capital, Sparta (q.v.).

LACERTA (Lat. lizard). Small constellation whose stars were grouped together by Hevelius. It lies in between Cygnus and Andromeda. It is the radiant point of the Lacertid meteors. See Constellation; Meteor.

LACE-WING FLY.

Neuropterous (nerve-winged) insect of the families Chrysopidae and Hemerobiidae. They are distinguished by their four delicate gauzy wings. The body is slender, and the eyes are conspicuously brilliant. There are a large number of genera, four being British. The larvae as a rule feed upon aphides, and are useful to the gardener.

LA CHAISE, FRANÇOIS DE (1624-1709). French Jesuit. Born at Aix, Aug. 25, 1624, he was educated at the university of Lyons, and entered the Society of Jesus. He is chiefly known, however, as the confessor of Louis XIV, and as the man who gave his name to the cemetery of Père-Lachaise (q.v.) in Paris. He became the king's confessor in 1674, and retained the post until his death, Jan. 20, 1709. He founded the college of Clermont and was a friend of Fénelon.



Lachine. Quebec. The rapids on the St. Lawrence River.

LACHINE. Town of Quebec, Canada. It stands on Lake St. Louis, a widening of the St. Lawrence, 8 m. from Montreal, of which it is virtually a suburb. With stations on the C.N.R. and C.P.R., it stands at the head of a canal to Montreal, built to avoid the Lachine rapids. The industries include boat-building and the manufacture of wheels and radiators. The name La Chine (China) was given to it because the explorer La Salle thought it was on the way to that country. Pop. 15,404.

LACHISH. Ancient fortified town, 16 m. E. of Gaza. Petrie's excavations at Tell el-Hesi in 1890 inaugurated Palestine archaeology. In 1891-93 Bliss completed the revelation of this Mound of Many Cities (1700 B.C.-400 B.C.). A cuneiform tablet of 1400 B.C. belongs to the Tell el-Amarna correspondence. Successive levels are identifiable with Joshua (Josh. 10), Rehoboam (2 Chron. 11), Sennacherib (2 Kings

18), who besieged it in 701 B.C., and Nebuchadnezzar (Jer. 34). See Palestine.

LACHLAN or **CALANE.** River of New South Wales, Australia. It rises in the Cullarin ranges about 120 m. S.W. of Sydney, and flows W. to join the Murrumbidgee, 40 m. above its junction with the Murray. It is about 850 m. long. Lake Cowal is maintained by the Lachlan floods, which take off by a distributary, 20 m. long, to reach the lake, which, in turn, ultimately drains into the Lachlan, 40 m. farther down stream.

LACHUTE. Town of Quebec, Canada. It is on North river, 44 m. W. of Montreal and 76 m. from Ottawa, on the C.P.R. and C.N.R. The industries include the making of paper and furniture. Pop. 2,592.

LACORDAIRE, JEAN BAPTISTE HENRI (1802-61). French priest and orator. Born March 12, 1802, he was educated at Dijon and studied law. At first a follower of Rousseau and hostile

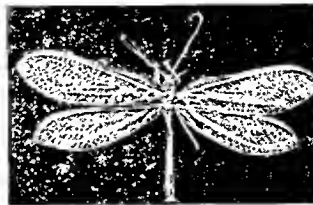
to clerical influences, about 1822 he decided to become a priest. Having studied at S. Sulpice, he was ordained in 1827. About 1834 Lacordaire began his great work as a preacher, speaking to crowded audiences in the Collège Stanislas, while his preaching attracted thousands to Notre Dame. In 1836 he went to Italy and joined the order of S. Dominic. Having been made

a provincial, he founded in 1840 a house for it at Naney. As a Dominican monk Lacordaire returned to his work as a preacher. In 1848 he was chosen a deputy to the National Assembly, but he resigned in 1850; in 1860 he was elected to the Academy. He died Nov. 22, 1861.

LACQUER. Name given to a kind of varnish. The lacquers of Japan and China are usually obtained from the resinous exudation of the *Rhus vernicifera* or varnish tree (q.v.). From three to eighteen layers of lacquer are applied, each being allowed to dry before the next is put on. Lacquered wood prepared in this way is extremely hard and capable of taking a very high polish. It is often highly decorated, the work being protected afterwards by a layer of transparent lacquer. The alternative method of lacquering is by the use of lac made up from the lac insect, but this is usually reserved for small objects, e.g. tea caddies, elbow-chow boxes, etc. See Lac.

LACROSSE. Ball game. It originated with the North American Indians and has since become the national game of Canada. The implements for playing the game consist of the crosse, the ball, and the goal posts. The crosse is a hickory stick with a hook at one end from the tip of which is strung a net of loosely-cut catgut in the form of a triangle, not more than 12 inches in its widest part. The ball is made from indiarubber sponge, not less than 8 nor more than 8½ ins. in circumference; each goal consists of two square poles, 6 ft. apart and 6 ft. high. The playing space between the goals varies from 100 to 150 yards.

There are twelve players on a side, and, excepting the goalkeepers, stationed one at each end, each particular position in the field is occupied by rival players, who mark each other. The object of the game is to score goals by passing the ball between the goal posts and under the cross-bar. The ball



Lace-wing Fly. Specimen with delicate wings fully extended.



J. B. H. Lacordaire, French priest.

must be kicked, or struck, or carried on the cross, in which lies the great art of the game; the goalkeeper is the only player who may handle it.

LACTATION (Lat. lac, milk). Term applied to the secretion of milk, and also to the period during which the infant is being suckled. During the first two days after delivery the secretion from the breasts is a fluid called colostrum, which differs from milk in having much less casein but more albumen. About the third day a secretion of normal milk is established.

LACTIC ACID. Liquid discovered in 1780 by Scheele in sour milk. It is obtained by fermenting lactose (q.v.). The fermentation is brought about by various germs, the most notable of which is the lactic acid bacillus. Lactic acid is used in strong solution as a mordant in dyeing and as an addition to tanning liquors in leather-making. A culture of lactic acid bacillus is used to ripen cream for butter making, and preparations of the bacilli are employed in the treatment of gastro-intestinal disturbances.

LACTOMETER. Instrument for determining the richness of milk. In one form, by means of which the determination is made by volume, it consists of a graduated glass tube. Milk is poured in until its level reaches the top graduation; the instrument is then allowed to stand until the cream separates out and its amount can be read on the scale. A second form of instrument measures the specific gravity of the milk.

LACTOSE OR MILK SUGAR. Variety of sugar found in milk. It is not so sweet as cane sugar, and does not undergo alcoholic fermentation. The souring of milk is due to the lactic acid fermentation, which takes place in the presence of casein. The source of lactose is the whey from cheese factories and the separated milk of creameries. It is prepared on a large scale in Switzerland, Holland, and New Zealand. Lactose is used as a food for infants and invalids.

LADAS. Name of two famous ancient athletes. One, of unknown date, belonged to Laconia, and won the long race at the Olympic games; he was the subject of a statue by the sculptor Myron. The other Ladas won the short race at the Olympic games in 280 B.C. The name Ladas became proverbial for speed.

LADOGA. Lake of Russia. It is the largest lake in Europe, being 125 m. long and 80 m. wide. Along its shores canals have been made to facilitate traffic. It contains many small islands, on two of which are monasteries.

LADRONES OR MARIANNE ISLANDS. Chain of islands in the N.W. Pacific Ocean, N. of the Carolines and about 1,500 m. E. of the Philippines. Divided into two groups, those to the N. are volcanic and mountainous, and are uninhabited; those to the S. are flat and low-lying, the chief being Guam, Saipan, Tinian, and Rota. The islands produce cotton, sugar, and tobacco. Formerly under Spanish rule, the islands, with the exception of Guam (ceded to U.S.A. in 1898), were sold to Germany in 1899. Since 1919 Japan has ruled them under mandate from the League of Nations. The area is 430 sq. m. Pop. 57,500.

LADY. Title of honour. It is used informally of a marchioness, countess, viscountess, or baroness. The daughter of a duke, marquess, or earl has lady prefixed to her Christian name and surname. The wife of a younger son of a duke or marquess has lady prefixed to her husband's Christian name and surname. The wife of a baronet or knight is commonly known as lady with her husband's surname, the formal title is dame with the wife's Christian name and the husband's surname.

LADYBANK. Burgh of Fifeshire. In full, Ladybank and Monkston, it is 5½ m. from Cupar. It is an important junction on the L.N.E. Rly. Pop. 1,220.

LADYBIRD (Coccinellidae). Popular name for a family of small beetles. It includes some 2,000 species, of which about forty occur in Great Britain. Their bodies are hemispherical, and most of them are red or yellow in colour, with a varying number of black or white spots. The seven-spot species is familiar. Their larvae feed upon aphides or plant lice.

LADYBRAND. Town of the Orange Free State, S. Africa. It is near the Maluti Mountains, about 15 m. from Maseru in Basutoland. The town is the centre of an administrative district of the same name, which is separated from Basutoland by the Caledon river. It is the terminus of a branch rly. from Bloemfontein to Bethlehem.

LADY CHAPEL. Name applied to the chapel of a cathedral or church where the altar of the Virgin was placed. The Lady chapels of the more important cathedrals had almost the character of detached structures; there is a very beautiful Early English example at Hereford. See Cathedral.

LADY DAY. Name now applied to March 25, the Feast of the Annunciation of the Virgin Mary. In England Lady Day is a quarter day, the first of the year.

LADY FERN (*Athyrium filix-foemina*). Fern of the order Polypodiaceae, of world-wide distribution. It has a stout root-stock clothed in rusty brown scales, and large, broad, lance-shaped leaves of soft texture. These are cut into leaflets (pinnae), which are dissected into toothed pinnules. The black clusters of spore-cases are covered with a kidney-shaped scale (indusium). The lady fern is found of abundant moisture, and may be found wherever the water is not stagnant. See Fern.

LADY'S MANTLE (*Alchemilla vulgaris*). Perennial herb of the order Rosaceae, a native of Europe, N. and W. Asia, Greenland, and Labrador. It has a short, stout root-stock and large, serrated leaves with lobed margins, thrown into plaits from the centre to the circumference. The small yellow-green flowers are in numerous clusters of short sprays. They have no petals. The root-stock of lady's mantle, which is edible and astringent, is used in rustic medicine.

LADYSMITH. Town of Natal, S. Africa. It stands at a height of over 3,000 ft. on a slope near the Klip river, about 30 m. from the Drakensberg Mts. It is 190 m. by rail from Durban. The chief buildings are the town hall, court house, and several churches, including the Anglican church with memorials to those who fell during the siege of 1899-1900. It was named after the wife of Sir Harry Smith. Pop. 6,600.

Ladysmith was the centre of the struggle in the first stage of the S. African war. The British garrisons in Natal were concentrated there under the command of Sir George White, and after several unavailing assaults on the Boer positions White held the town against siege from Nov. 2, 1899, to Feb. 28, 1900, when it was relieved by Sir Redvers Buller after three unsuccessful attempts.

LADY'S SLIPPER

ORCHID (*Cypripedium calceolus*). Herb of the order Orchidaceae. A native of Europe and N. Asia, it has a creeping root-stock and a leafy stem a foot or more high. The flowers (one or two only) are large and slipper-shaped, reddish brown, except the large upturned lip, which is pale yellow.

Lady's slipper is a variant name for the herb bird's-foot trefoil (*Lotus corniculatus*). See Bird's-Foot.

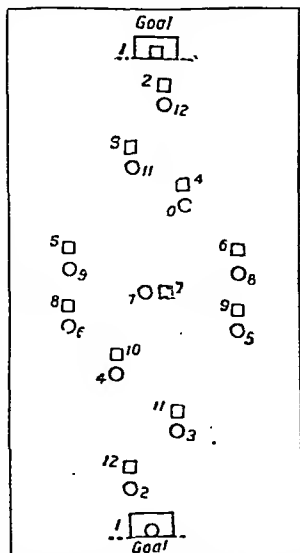
Lady's Smock. Alternative popular name for the plant also known as cuckoo flower (q.v.).

LADY'S TRESSES

(*Sparganium angustifolium*). Perennial herb of the order Cyperaceae. A native of Europe and N. Africa. It has two or three egg-shaped tubers from which, in Aug., arises the single, slender flowering stem with a few slender leaves and a row of small white fragrant flowers, this part of the stem being spirally twisted. Later a rosette of oval leaves is produced direct from another tuber. It occurs on hillsides and in dry pastures. Another species the summer lady's tresses (*S. aestivale*), is a bog plant with cylindrical tubers, and the flowering stem, 6 to 18 ins. high, arises amid the root leaves. It is a rare plant in Gt. Britain.

LAECEN. Suburb of Brussels. It lies N. of the city and contains a palace, one of the residences of the king of the Belgians. The church of Notre Dame is a modern Gothic building. On a hill near is a memorial to Leopold I, king of the Belgians. Electric tramways connect Laeken with the centre of the city.

LAERTES. In Greek legend, the aged father of Odysseus. When Odysseus returned after his 20 years' absence from Ithaca, he found his father still alive, and their meeting is described by Homer in a passage of great beauty. Pron. Lay-er-teez.



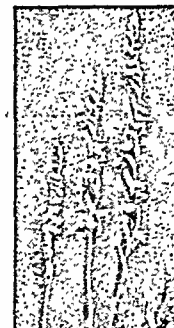
Lacrosse. Plan of field, players of opposing sides designated by squares and circles respectively. 1. Goal-keeper. 2. Point. 3. Cover point. 4. Third man. 5 and 6. Defence fields. 7. Centre. 8 and 9. Attack fields. 10. Third home. 11. Second home. 12. First home.



Ladybird, Coccinella seven punctata, much enlarged.



Lady's slipper Orchid *Cypripedium bicinctum* an American variety.



Lady's Tresses Flower stems.



Lady's Mantle. Flower-heads and foliage. Liset flower.

LAERTES. British destroyer. She belonged to the L class built in 1912-13, displacing about 1,000 tons and having engines of 24,500 h.p., giving a speed of 29 knots. In the Heligoland Bight action, Aug. 28, 1914, she was seriously damaged. She afterwards served with the Harwich Force on patrol and for convoy duties.

LAFAYETTE, MARIE JOSEPH PAUL DU MOTIER, MARQUIS DE (1757-1834) French soldier and statesman. Born Sept. 6, 1757,



Marquis de Lafayette, French soldier and statesman

he was an enthusiastic supporter of the American colonists in their struggle for independence and brought reinforcements from France to their aid. He led the National Guard to Versailles on Oct. 5, 1789, and was given command of an army against Austria in Dec. But he felt himself unable to support Jacobin policy against Louis XVI, and in

Aug., 1792, was formally declared a traitor to the republic and took refuge in Liège, returning to France in 1799. He sat in the Chamber of Deputies from 1825-34, and died May 20, 1834.

Lafayette is the name of a city of Indiana, U.S.A., 75 m. N.W. of Indianapolis, with important manufactures. Pop. 21,250.

LA FÈRE. Town of France. In the dept. of Aisne, it stands on an island at the junction of the Serre with the Oise, 14 m. N.W. of Laon and 10 m. S. of St. Quentin. An old fortress before the Great War, it has a population of about 5,000.

It remained in the possession of the Germans during 1914-18. It was on the front St. Quentin-La Fère that the Germans broke through on Mar. 21, 1918.

LA FONTAINE, JEAN DE (1621-95). French poet and fabulist. Born at Château-Thierry in Champagne, July 8, 1621, he



J. de La Fontaine, French poet

turned to literature comparatively late in life, the first volume of his *Contes* being published in 1664, though three years earlier he had produced the first of his works in *L'Élégie aux Nymphes*, and in 1663 his *Voyage en Limousin*. In 1668 came a second series of *Contes* and the first six books of the famous *Fables*; a second series of *Fables* followed in 1679 and a third in 1693. In 1684 La Fontaine was elected a member of the French Academy. He died in Paris, April 13, 1695. His complete works are included in *Les Grands Écrivains de la France*, J. A. A. Regnier, 1883-92.

LAGASH. Sumerian city at Tello, S. Babylonia. The earliest personage identified is the patesi Lugalshagengur, who ruled under Mesilim, king of Kish. Within a century Eannatum made Lagash the S. Babylonian capital. This dynasty ended with the reformer Urukagina, after whom the city was ruled until 2400 B.C. by patesis owing allegiance to Akkad, Ereh, and Ur. See Babylonia.

LAGERLÖF, SELMA OTTILIANA LOUISA (b. 1858). Swedish novelist. Born Nov. 20, 1858, in Värmland, she abandoned a teaching career for literature. In 1890 she won a prize by a collection of her early stories, whose publication in 1891, under the title of *Gösta Berling's Saga*, Eng. trans. 1898, placed her in the front rank of Swedish writers.

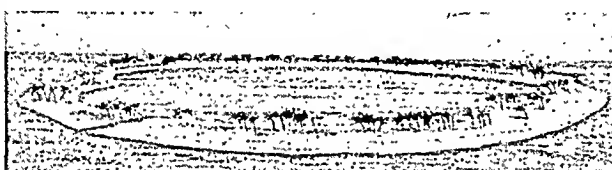
The first part of her greatest novel, *Jerusalem*, was published in 1901, followed by a second part in 1902, Eng. trans. 1903. She was awarded the Nobel Prize for Literature in 1909, and in 1914 was elected a member of the Swedish Academy being the first woman so honoured. Her novel *The Outcast* was published in 1920. Later works were *The General's Ring*, 1925, and *Anna Svörd*, 1927.



Selma Lagerlöf, Swedish novelist

LAGOON (Lat. lacuna, pool). Shallow lake or sheet of water connected with a river or the sea. Usually found along the seaward margins of low-lying coastal plains, lagoons frequently occur in seas where the tides are very small, e.g. the Baltic. They are also found on a sand-dune coast like that of the Landes in S.W. France, and in large deltas. Another type of lagoon is that enclosed by the ring of coral which makes an atoll or coral island. See Atoll; Coral Reef.

LAGOS. District, island, and town of S. Nigeria. The district has an area of 28,600 sq. m., and contains that portion of Nigeria known as "the Colony," i.e. the colony of Lagos, created in 1862. In 1914 this was united with the protectorate of N. Nigeria to

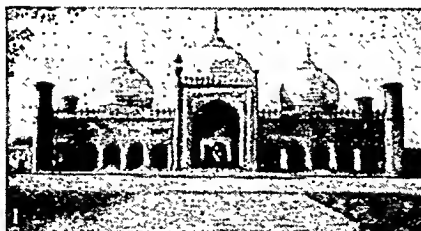


Lagoon enclosed by a ring of coral, thus forming an atoll

form the colony and protectorate of Nigeria.

The town of Lagos (pop. 75,000) is the seat of the central government. It stands at the western end of the island of Lagos, which has an area of 3½ sq. m. There is an important harbour, and a railway runs from Iddo, on the mainland, with which Lagos is connected by a bridge, to Kano, 740 m. N.E. There is a wireless station for ship to shore communication. See Nigeria.

BATTLE OF LAGOS. Naval engagement fought Aug. 18, 1759. A French fleet of 12 ships escaped from Toulon and made for the Portu-



gueso coast, pursued by a British squadron under Boscawen. With four ships their admiral reached Lagos Bay. Ignoring the neutrality of Portugal, Boscawen sailed after them into Lagos Bay, and captured two and destroyed the others.

LAGRANGE, JOSEPH LOUIS (1736-1813). French mathematician. Born at Turin, Jan. 25, 1736, he early showed his profound mathematical ability. For some time professor of mathematics at Turin, he was director of the Berlin Academy for 20 years. In 1787 he went to Paris, and headed the commission

which produced the metric system of measurements. Lagrange has left his mark on every branch of mathematics; while he was no less noted for his power of analysis in astronomical problems. His works were published in 14 vols. in Paris, 1866-92. He died April 10, 1813.

LA HARPE, JEAN FRANÇOIS DE (1739-1803). French critic. He was born in Paris, Nov. 20, 1739. His reputation rests on his 12 volumes of lectures, *Lycée, ou Cours de Littérature*. He also wrote mediocre tragedies, the first of which, *Warwick*, 1763, was very successful. At the first a warm adherent of the Revolution, he was alienated by its later excesses, and finally became a supporter of church and throne. He died Feb. 11, 1803.



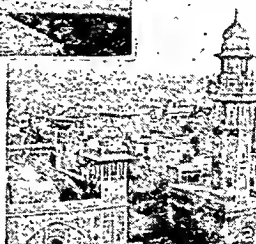
Lagos, Nigeria. The sea front from the tower of Christ Church

LA HOGUE, BATTLE OF. Naval engagement fought May 19, 1692, between the English and the French. It takes its name from the old spelling of the place in the Cotentin Peninsula called La Hougue.

Tourville, the French admiral, had orders to attack, whatever the strength of the English, under Admiral Russell, might be. The fleets were in sight of one another on May 19 off Cape Barfleur. Tourville attacked the English centre, but the English fire was very accurate, and his flagship, the *Soleil Royal*, was badly damaged. After five hours Tourville endeavoured to draw off westward in a fog, but his movement was discovered. Some of the French ships weathered Cape de la Hague, the westernmost point of the peninsula, and reached Saint Malo. The *Soleil Royal* and other ships were driven ashore near Cherbourg and burned. Other French ships, which had taken refuge in the harbour of Saint Vaast de la Hougue, were burned by fireships. In the engagement the French had 44 ships, and the English and Dutch had 99.

LAHORE. Division, district, and city of the Punjab, India. The division is the smallest of the prov. and the most populous. Its area is 12,389 sq. m. Pop. 4,997,441. The district of Lahore surrounds the capital, in the Bari Doab, S.W. of Amritsar. Raiwind and Kasur are important trade centres in addition to Lahore city. The area of the dist. is 2,824 sq. m., its pop. 1,131,336.

Lahore city, the capital of the Punjab, is situated nearly midway between Delhi and Peshawar, near the E. bank of the Ravi. Government House, Montgomery Hall, two cathedrals, the Punjab Chiefs' College, Wazir Khan's Mosque, the Great Mosque, and the Hall of Mirrors are notable buildings. The Mausoleum of Jahangir lies across the river. Lahore is the headquarters of a great rly. system, 8,000 people being employed in the rly. workshops. Pop. 281,781.



Lahore. 1. Jama Masjid, or the Great Mosque. 2. General view of the city

LAING, SAMUEL (1810-97). British politician and author. Born in Edinburgh, Dec. 12, 1810, he was secretary to the railway department of the board of trade, 1842-47. In 1852 Laing entered Parliament as Liberal

M.P. for Wick: in 1859 he was financial secretary to the treasury; and in 1860 he went to India as finance member of the viceroy's council. He returned to England in 1865 and re-entered Parliament. From 1867-94 he was chairman of the L.B. & S.C. Rly., and he died Aug. 6, 1897. Laing wrote *Modern Science and Modern Thought*, 1885; *The Antiquity of Man*, 1890; *Human Origins*, 1892.

Laing's Nek. Name sometimes given to the pass in the Drakensberg, S. Africa, more correctly called Lang's Nek (q.v.).

LAIRD, JOHN (1805-74) British shipbuilder. Born at Greenock, he joined his father, a shipbuilder at Birkenhead, and the firm of William Laird & Son was one of the first to use iron for shipbuilding, several of the earliest iron vessels being built in its yard. Laird was Conservative M.P. for Birkenhead from 1861 till his death, Oct. 29, 1874. His sons continued his business as Laird Bros.

LAITY. Term used for those who are not clergymen. In the Church of England the House of Laity is a body of laymen and laywomen set up for the government of the Church of England under the Enabling Act of 1919, and is one of the three houses of its National Assembly. Its members are elected every five years by the lay members of the diocesan conferences. See Church of England.

LAKE. Insoluble pigment obtained by precipitating solutions of organic colouring matters with alum or a tin salt. The variety of pigments made by precipitating coal-tar colours and known as aniline lakes are not true lakes. The lakes prepared from natural dyestuffs, as cochineal, fustic, etc., have been largely replaced by similar productions from aniline dyes. See Dyes; Pigment.

LAKE, GERARD LAKE, 1ST VISCOUNT (1744-1808). British soldier. Born July 27, 1744, he served in Germany during the Seven Years' War and in America during the War of Independence. He was commander-in-chief in Ireland during the rising of 1798, routing the rebels at Vinegar Hill. From 1801-05 Lake was commander-in-chief in India, being responsible with Sir Arthur Wellesley for crushing the Marhattas in several battles. In 1804 he was made a baron and in 1807 a viscount. From 1790-1802 he was M.P. for Aylesbury, and he was for a time a member of the Irish House of Commons. He died Feb. 20, 1808. Consult *Memoir*, H. Pearse, 1903.

LAKE DISTRICT. Name given to the picturesque region of mountains, lakes, streams, and waterfalls in Cumberland, Westmorland, and part of Lancashire, England. The lakes are Windermere, Ullswater, Conistone, Bassenthwaite, Derwentwater, Wastwater, Thirlmere, Crummock Water, Ennerdale Water, Hawes Water, Esthwaite Water, Lowes Water, Buttermere, Grasmere, Rydal Water, Brothers' Water, and Elterwater. Of the mts. the highest are Scafell Pike, Scafell, Helvellyn, and Skiddaw. There are many passes ranging from 780 ft. to 2,490 ft. The district, long a favourite tourist resort, was first made popular by Wordsworth, though Gray, at an earlier date, had drawn attention to its beauties. The area of the dist., the rainiest in England, is about 35 sq. m.

The Lake School of Poets was a term applied derisively by The Edinburgh Review, and by Byron, to the group of poets, Wordsworth, Coleridge, and Southey, who for varying periods made the Lake District their home.

LAKE DWELLING or **PALAEITTE.** Habitation upon a pile-supported platform. They are found on shallow lake-margins, especially along the Alpine axis of Europe. Of the neolithic and early metallic ages, they are best preserved in Switzerland and N. Italy. The submerged piles supported platforms above

water level, bearing 200 to 300 round or oblong huts, with thatched roofs, clay floors, and stone hearths. Some villages specialised



Lake Dwelling. Pile-built village of Parajano Indians in the lagoon of Sinimaica, Venezuela. Hence arose the name Venezuela (Little Venice).

in axe-making, pottery, bronze-smelting, and the like. Of 70 animals identified, the dog, pig, goat, sheep, ox, and horse were domesticated. Many plants were cultivated, including wheat, millet, barley, beans, vine, and apple. Much use was made of bone implements. See Bronze Age; Stone Age.

LAKE OF THE WOODS. Lake of N. America: area 1,850 sq. m., length 70 m. The Rainy river flows into it, and the Winnipeg river carries its waters to Lake Winnipeg. It is studded with islands. Kenora, at the outlet, is the centre for steamer traffic on the lake.



Lalang grass, ears and leaves

that of collection.

LALLY, THOMAS ARTHUR (1702-66). French soldier. Born at Romans, Dauphiné, in Jan., 1702, the son of an Irish father and a French mother, he entered the French army in 1721, and rose to command the regiment de Lally, which he led at Fontenoy. He served in the Jacobite expedition of 1745-46, and in the various wars against Austria. In 1758 Lally headed an expedition to India, and took Fort St. David from the British, but his troops were crushed at Wandiwash, and he surrendered Pondicherry in 1761. From England, as a prisoner of war, he went on parole to France, where he was charged with treachery and cowardice. He was tried and found guilty, and on May 9, 1766, was beheaded.

His son, Trophime Gérard Lally-Tollendal (1751-1830), took part in public affairs during the French Revolution as a moderate. He died in Paris, March 11, 1830.

LAMAISM. Religious system of Tibet and Mongolia. Named after the Tibetan word lama, Superior One, given to its priests and monks, it constitutes the civil as well as the religious government of Tibet. Its

elaborate hierarchy has as its head the Grand or Dalai Lama, whose spirit is supposed to be reborn in a child, the child being found by oracular signs, and tutored by a regent until the age of 18. The Potala of Lamsaism is a palace on Mt. Potala, near Lhasa (q.v.). In Tibet every family devotes at least one of its sons to the church. There are gorgeous cathedrals, huge monasteries, and nunneries; and a ritual resembling outwardly that of Roman Catholicism.

While in the higher ranks of the Lamas are found exponents of the loftier philosophy and ethics taught by Gautama Buddha, the founder of Buddhism, priests and people are steeped in superstition and idolatry. See Buddhism; Tibet; consult also The Buddhism of Tibet, or Lamaism, L. A. Waddell, 1895.

LAMARCK, JEAN BAPTISTE PIERRE ANTOINE MONNET, CHEVALIER DE (1744-1829) French zoologist. Born Aug. 1, 1744. Lamarck

enlisted when 16 years of age. An accident caused him to throw up his military career, and, taking an interest in medicine and botany, he began studying in Paris. In 1778 he published his *Flore Française*, 3 vols. In 1788 he was appointed keeper of the herbarium of the Royal Garden. He reorganized the Museum of Natural History, at which he was professor of invertebrate zoology. He died Dec. 18, 1829.

Lamarck was the greatest zoologist of his time. He advocated the gradual descent of all living animals from fossil forms, and gave his name to Lamarckism, or the doctrine of the descent of animals from germs by spontaneous generation. He was the founder of invertebrate palaeontology, and one of the great reformers of animal classification.

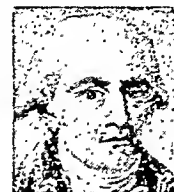
LAMARTINE, ALPHONSE MARIE LOUIS DE PRAT DE (1790-1869). French author. Born at Mâcon, Burgundy, Oct. 21, 1790, when 21 he was sent to Italy, and at Naples met a young cigarette maker whom he later idealised in his *Graziella*, 1852. His *Méditations Poétiques* 1820, struck the first note of the new French romantic poetry. He was elected to the Academy in 1829. In 1832 he went on an extended tour to the East, described in his *Voyage en Orient*, 1835.

On returning to France he was elected to the Chamber as an independent. He wrote *Jocelyn*, a narrative poem, in 1836. As minister for foreign affairs in the provisional government of 1848, the popularity of his *Histoire des Girondins* secured for him something like a dictatorship, but this only lasted for a short time. He died in Paris, May 1, 1869.



Lamasism. 1. Monastic lamas with telescopic trumpet. 2. Lamas of Nud in ceremonial dress.

LAMB, CHARLES (1775-1834). English essayist. Born at 2, Crown Office Row, Temple, London, Feb. 10, 1775, his father, John Lamb, was clerk to Samuel Salt, one of



J. B. de Lamarck, French zoologist



A. M. de Lamartine, French poet

the benchers. Educated at Christ's Hospital, in 1792 Charles entered the accountant's office in the East India House. There was insanity in the family, and in 1796 his sister, Mary Lamb (1764-1847), stabbed her mother in a sudden access of madness. Charles, then only 21, made himself responsible for her guardianship, and their mutual devotion is one of the tenderest pages in literary history. Lamb had early leanings to literature, and had already published verse



Charles Lamb,
English essayist

From an engraving
by Henry Mayer

when his first independent book, *A Tale of Rosamund Gray and Old Blind Margaret*, appeared in 1798. In 1801 he published a tragedy, *John Woodvil*.

With Mary he wrote *Tales from Shakespeare*, 1807, *Mrs. Leicester's School*, 1808, and *Poetry for Children*, 1809. To the same period belong his children's books, *The King and Queen of Hearts* (1806), and *The Adventures of Ulysses* (1808), and the *Specimens of English Dramatists Who Lived about the Time of Shakespeare* (1808). In 1820 *The London Magazine* was started, and to it Lamb contributed those *Essays* signed *Elia* which were to give him a high and abiding place in literature. In 1825 he retired from the East India House, and in 1833 published *The Last Essays of Elia*. He died Dec. 27, 1834. Consult *Bibliography of Charles and Mary Lamb*, J. C. Thomson, 1908. *Life of Charles Lamb*, E. V. Lucas, 5th ed. 1921.

LAMBALLE, MARIE THÉRÈSE, PRINCESSE DE (1749-92). French princess. Daughter of Louis Victor of Savoy-Carignano, she was born at Turin, Sept. 8, 1749. In 1767 she made an unhappy marriage with the prince de Lamballe (d. 1768). Living after his death with his father, the duko of Penthièvre, she later became intimate with Marie Antoinette.

In Aug., 1792, she was arrested and imprisoned in the Prison de la Force, where on Sept. 3 she was murdered in the massacres. *Memoirs* published as hers in 1826 are spurious.

LAMBERT, DANIEL (1770-1809). Born at Leicester, March 13, 1770, he succeeded his father as the keeper of the town gaol in 1791, and in 1793 weighed 32 stone.

In 1805 he resigned his post at the prison, and for the last four years of his life exhibited himself for profit. He weighed 52½ stone at the time of his death, July 21, 1809.

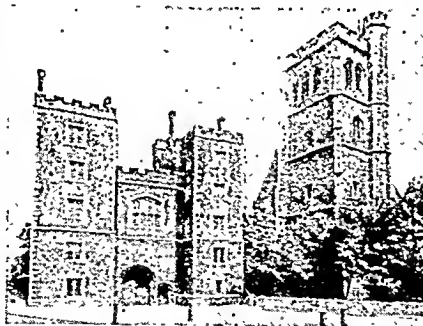
LAMBERT, JOHN (1619-94). English soldier. Born at Calton Hall, Yorkshire, in 1642 he joined the parliamentary army. He served at Marston Moor and became one of the chief officers of the new model army, holding commands under Cromwell at Dunbar and Worcester.

A member of the council of state, he helped to draw up the instrument of government and

was one of the major-generals. About 1656 a serious dispute with the protector led to his retirement, but in 1659 he was again prominent. He put an end to the Long Parliament, and for a moment he and Monk were the two most powerful men in the country. Imprisoned at the Restoration, he was a prisoner in Guernsey when he died, sometime in 1694.

LAMBETH. One of the boroughs of the co. of London. Between Southwark and Camberwell on the E., and Westminster and Wandsworth on the W., it includes the dists. of Kennington, Brixton, Herne Hill,ulse Hill, Vauxhall, and part of Norwood, also the S. approaches to Waterloo, Westminster, Lambeth, and Vauxhall bridges over the Thames. The Albert Embankment runs from Westminster Bridge to Vauxhall. The parish church of S. Mary's, adjacent to Lambeth Palace, was rebuilt, 1851, on the foundation of a 15th century structure, of which only the tower remains. Other notable buildings include the London County Hall, the town hall, 1908, at Brixton; S. Thomas's Hospital; Christ Church, Westminster Bridge Road; Waterloo rly. station; the Old Vic Theatre, eight public libraries, public baths, and the South-Western Fever Hospital. Within the boundary are Kennington Oval, Kennington Park, Camberwell Park or Myatt's Fields, Brockwell Park, Ruskin Park, and Norwood Cemetery. In 1929 work on a new bridge was begun. Pop. 302,960.

Lambeth ware is a type of glazed earthenware produced in Lambeth. In 1630 Dutch potters were turning out there a kind of delft, while later, English potters produced a kind of Palissy ware. Another potter produced glazed stoneware for chemical manufacturing, and this industry still flourishes. The Lambeth pottery was established by Doulton (q.v.).



Lambeth Palace. The main entrance, dating from 1490. On the right is Lambeth parish church

The Lambeth Conference, held decennially at Lambeth Palace, is a gathering of the bishops of the Anglican Church throughout the world. An important one took place in July-Aug., 1930.

LAMBETH PALACE. London residence since the 13th century of the archbishops of Canterbury. It is on the right bank of the Thames, between S. Thomas's Hospital and Lambeth Bridge, and is built partly of red brick and partly of grey stone. At the end of the outer court rises Chicheley's Water Tower, popularly called the Lollards' Tower, restored in 1873. On the right is the Great Hall, built by Juxon. Apart from the library of 30,000 books and MSS. which it has housed since 1834, its open timber roof is its most famous feature. Part of the extensive grounds was made a public recreation ground. Consult the *Story of Lambeth Palace*, Dorothy Gardiner, 1930.



John Lambert,
English soldier

LAMENNAIS, HUGUES FÉLICITÉ ROBERT DE (1782-1854). French philosopher. Born June 16, 1782, he published in 1808 an able study of the importance of the Church in society. He was ordained priest in 1816. His essay on *L'Indifférence en Matière de Religion*, 1817 (Eng. trans. 1898), was a vigorous defence of authority against liberty of opinion. He published his *Progrès de la Révolution* in 1829, and in 1830 founded his paper *L'Avenir*, which was condemned by Rome in 1832. Lamennais thereupon broke with the Church, and thenceforth was allied with democratic forces in politics, sitting in the Constituent Assembly as a radical from 1848-51. He died Feb. 27, 1854.

LAMENTATIONS, BOOK OF. O.T. writing belonging to a group known as the Five Megilloth (i.e. Rolls). In the English versions the book is called *The Lamentations of Jeremiah*. It contains five independent poems, four of which are alphabetic and written in a solemn metre consisting of three beats followed by two. The poems are lamentations over the destruction of Jerusalem by Nebuchadnezzar in 586 B.C., and are ascribed by an ancient tradition to Jeremiah.

LAMESLEY. Parish of Durham. It stands on the Team, 4 m. S. of Gateshead, with a station on the L.N.E. Rly. It is a mining centre, and near the village is Ravensworth Castle. Pop. 6,792.

LAMIA. (1) In Greek mythology, a fabulous monster which was supposed to devour children. (2) Name of an old Libyan queen who, to avenge the death of her own children slain by Hera, slew all other children she could lay hands upon. In later legend Lamia became a beautiful female who gained the affections of handsome young men, and then sucked their blood and ate their flesh.

LAMMAS DAY. Festival of the wheat harvest, observed in the Early English Church on Aug. 1. Lammas was one of the English quarter days, and is still a quarter day in Scotland (Aug. 1). Lammas lands belonged to the owners while in corn or grass, and were afterwards subject to common rights of pasturage. Lammas floods is a wet period occurring about the first week in August.

LÄMMERGEIER. Large bird of prey, belonging to the vulture group. It is found in S. Europe, W. and Central Asia, and in N.E. Africa, and lives always among the mountains. The plumage is black on the upper parts and orange below, with a whitish head and white markings on the wings. The wings are over 9 ft. in expanse. Unlike the true vultures, the head is completely feathered; and the curious tuft of bristles at the base of the beak gives the bird its popular name of the bearded vulture. It feeds mainly upon carrion.

LÄMMERMUIR OR LÄMMERMOOR. Range of hills in Berwickshire and Haddingtonshire. They extend in an E.N.E. direction to St. Abb's Head. Lammer Law (1,733 ft.) is the culminating summit. Ravenswood, the Wolf's Crag of Sir Walter Scott's *Bride of Lammermoor*, is situated on a spur towards the sea.

LA MOTTE, ANTOINE HOUDART DE (1672-1731). French man of letters. Born in Paris, Jan. 17, 1672, he early began to write for the theatre, but without any great success. In 1719 he published a volume of witty *Fables*, Eng. trans. 1721, and in 1723 made his chief stage success with *Inès de Castro*, which has been acclaimed as being nearly a great play. The most notable of his writings were his essays and letters. He died Dec. 26, 1731.

LA MOTTE OR LAMOTHE, JEAN DE VALOIS, COMTESSE DE (1756-91). French adventuress. Claiming descent from the blood-royal of France, she was a beggar when befriended by the Countess of Boulaivilliers, and thus came into touch with the court circle. She married

M. de La Motte, called count. She induced Cardinal De Rohan to purchase the famous diamond necklace on credit, on the pretence that it was coveted by the queen. Branded and imprisoned in 1786 for her part in this transaction, the comtesse de La Motte escaped to London, and was killed by falling from a window, Aug. 23, 1791.



Comtesse de La Motte, French adventuress

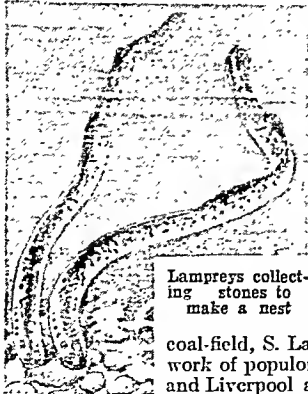
LAMP (Gr. lampein, to shine). Vessel for holding inflammable material intended to be burnt for the production of light or heat. By extension the term is applied to any device for providing artificial illumination. The invention of the pottery lamp, wherein animal oil, and afterwards vegetable oil, was burned at a wick confined in a nozzle, is attributable to the Mediterranean region. The original form, a shallow bowl with one end pinched in, gradually passed into the closed type, with central apertures for filling and end apertures for wicks. Apart from the introduction of wicks of spun cotton and other fibres, no improvement in technical efficiency was effected until after the Renaissance.

Towards 1800 the small round wicks were largely replaced by flat ones. These ran in a metal casing, and were adjusted by means of a toothed wheel which gripped the wick. Argand, in 1784, further improved the lamp by substituting a tubular wick, moving between metal cylinders. The inner cylinder allowed a draught of air to play upon the wick, thus increasing combustion. This burner, with various modifications and the addition of a glass chimney, remains the basis of nearly all oil lamps. See Arc Lamp; Electric Lighting; Gas.

LAMP BLACK. Nearly pure form of carbon, consisting of soot produced by the imperfect combustion of coal-tar, resin, oil, or gas. Commercially it is obtained by burning hydrocarbons in a special kind of furnace, the soot being deposited on a funnel or hood, from which it may be collected. In another method the smoke from the burning substances passes through a long brickwork flue into chambers, where it collects. Lamp black is extensively used in the manufacture of printers' and other inks. See Carbon; Ink.

LAMPETER. Borough and market town of Cardiganshire. It stands on the Teify, 27 m. from Carmarthen, and is served by the G.W. Rly. The chief buildings are the parish church of S. Peter, much restored, and S. David's College for training candidates for the ministry of the episcopal church, established 1822. Lampeter was founded by a Celtic missionary, S. Pedr, whence its name. Market day, Fri. Pop. 1,813.

LAMPREY (Petromyzon). Fresh-water animal belonging to the order Cyclostomata (round-mouthed). It differs from the fishes in having neither scales, paired fins, nor jaws, as well as in various points of internal anatomy. In appearance it is eel-like, but has a round sucking mouth with which it attaches itself to stones and other objects. Three species occur in Great Britain. One is marine (*P. marinus*) and attains a length of over 3 ft., while the other two (*P. fluviatilis* and *P. branchialis*) live in the rivers and are much smaller. The lamprey feeds upon small water creatures and upon dead bodies, sometimes attaching itself to



Lampreys collecting stones to make a nest

living fish and rasping holes through the skin. Its flesh was formerly esteemed for the table. It deposits its eggs in stone heaps. See Hag Fish.

LANARK. Burgh of Lanarkshire, also the county town. It stands above the right bank of the Clyde, 32 m. from Edinburgh and 31 m. from Glasgow, and is served by the L.M.S. Rly. The chief buildings are those erected for burgh and county purposes, e.g. hospitals, a library, and an orphanage. The industries include cotton spinning, hosiery making, and a trade in horses, cattle, sheep, and agricultural produce. Lanark is noted for its picturesque surroundings. Near are the Falls of Clyde and Cartland Craigs. Lee House, the old seat of the Lockharts, is referred to in *The Talisman*. Market day, Mon. Pop. 6,268.

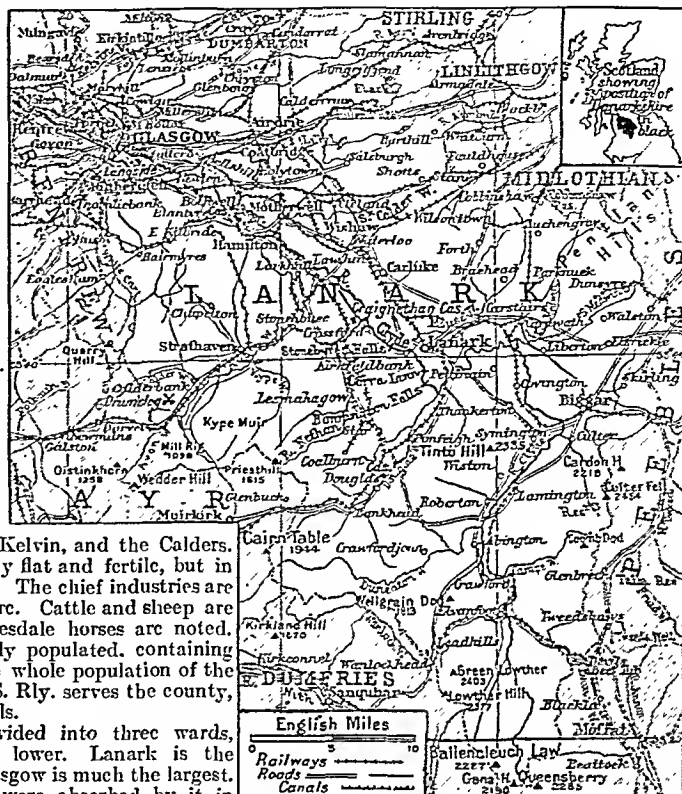
LANARKSHIRE. Inland county in the S.W. of Scotland, sometimes called Clydesdale. Its area is 879 sq. m. The chief river is the Clyde; others are its tributaries, Douglas, Aron, Nethan, Cart, Kelvin, and the Calder. The surface is mainly flat and fertile, but in the S. there are hills. The chief industries are mining and agriculture. Cattle and sheep are reared and the Clydesdale horses are noted. Lanarkshire is densely populated, containing about a third of the whole population of the country. The L.M.S. Rly. serves the county, which has also canals.

Lanarkshire is divided into three wards, upper, middle, and lower. Lanark is the county town, but Glasgow is much the largest. Partick and Govan were absorbed by it in 1912. Other towns are Rutherglen, Motherwell, Airdrie, Wishaw, Coatbridge, and Hamilton. Lanarkshire is associated with many events in Scottish history, herein being Langside, Bothwell Brig, and Drumclog, also the castles of Douglas, Craignethan, and Bothwell (q.v.). Pop. 1,539,307.

LANCASHIRE. County of England. Its area is 1,869 sq. m. With a long and irregular coastline on the Irish Sea, it is broken into two unequal parts by Morecambe Bay; the small northern part is known as Furness. In the E., where it borders Yorkshire, the surface is mountainous. In the N. the mountains of the Cumbrian group enter it, while lesser elevations of the Pennine Chain cover much of the centre. The level areas are in the south and along the coast. Pop. 4,927,484.

The most important rivers are the Mersey, Ribble, and Lune. The only lakes are Coniston and others of the Lake District. Off the coast is the island of Walney. There is much agriculture and some fertile land, especially in the S.W., but much of the county is an industrial area, while in the E. is some moorland. Standing on a great coal-field, S. Lancashire is covered with a network of populous towns, of which Manchester and Liverpool are the chief. Watering places line the coast; these include Southport, Blackpool, Morecambe, and Lytham St. Anne's. Lancaster is the county town.

The county's main industry is the cotton manufacture, but there are many others, especially those included in the engineering and machinery group. Lancashire is served by the two great trunk lines, the L.M.S. and L.N.E.R., and also by the Cheshire Lines Rly., and by several canals, especially the Manchester Ship Canal. Lancashire is a county palatine, and, as Duke of Lancaster, the king appoints its sheriff. It has a large number of



Lancashire. Map of the industrial Scottish county sometimes called Clydesdale

families of ancient lineage and many stately mansions, for instance, Knowsley. It is also known for the strong Roman Catholic element in its population. It contains the ruins of Furness Abbey, and there are many noted ecclesiastical buildings. See map p. 840.

LANCASHIRE FUSILIERS. Regiment of the British army. Raised in 1683, as the old 20th Foot, it first saw service in Ireland and Portugal. It helped to defend Gibraltar in 1726, and fought at Dettingen, Fontenoy, and Culloden. The Fusiliers fought in the Seven Years' War, in the Peninsular War, and in the Crimean War, and were at Lucknow during the Indian Mutiny. In 1899 they went to S. Africa.



In the Great War the 1st battalion won great renown in the landing on Beach W, Gallipoli, April 25, 1915, and in subsequent fighting there. The 3rd, 6th, 7th, and 9th batts. also fought in the peninsula. The 2nd was at Mons and other earlier battles of 1914, and in the second battle of Ypres, 1915. Other battalions also distinguished themselves on the Western Front, 1916-18, and in Egypt and Sinai in 1916. The 2-5th batt. bore a notable part in stemming the German offensive, Mar.-April, 1918, particularly at Bethune. The regimental depot is at Bury.

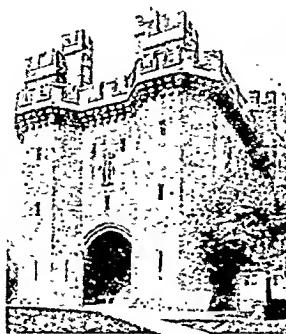
LANCASTER. Borough and market town of Lancashire, also the county town. It stands on the S. side of the river Lune, 4 m.

from the sea, 230 m. from London and 21 m. from Preston, and is served by the LMS Rly. This chief of the old buildings are S. Mary's Church, mainly Perpendicular, and the castle. The latter was built in the 11th century, and strengthened by John of Gaunt. Features are the four towers and the keep; it is now used as law courts. There is a town hall, given by Lord Ashton, an infirmary, and an observatory. The Storey Institute contains the art gallery, library, museum, and technical school. Lancaster has spinning mills and engineering works, and the chief industries are the making of linoleum and railway stock. Market day, Sat. Pop 40,212.

LANCASTER, DUCHY OF. Name given to the lands which for several centuries had belonged to the king as duke of Lancaster. Not surrendered with the rest of the crown lands by William IV, they still form a separate estate, of which the king receives the net income. They are mainly in the counties of Lancashire and Stafford, and are managed by a council presided over by the chancellor of the duchy, who is a member of the Government. Until 1930 its offices were at Lancaster Place, Strand, London, W.C. 2.

LANCASTER, HOUSE OF. Name given to the descendants of John of Gaunt, duke of Lancaster, the family that reigned in England

of this kind in England, and his daughter married John of Gaunt, who was also made duke of Lancaster. Gaunt's son Henry, then



Lancaster. Gateway of the castle dating from the 11th century

LANCASTER, JOHN OF GAUNT, DUKE OF (1340-99). English prince. The fourth son of Edward III, he was born in Mar., 1340, at Ghent, whence his name. In 1359 he married his cousin Blanche, daughter of Henry, duke of Lancaster, and so acquired, somewhat later, that rich duchy. He fought in France and in Spain, where he helped to restore Pedro to his throne of Castile, and married as his second wife Pedro's daughter, Constance. In England, John's vigorous personality made him prominent, and during the reign of Richard II he was a conspicuous and usually an unpopular figure. He died Feb. 3, 1399, and was buried in S. Paul's. He was the father of Henry IV. His third wife was Catherine Swynford, by whom he was the father of the Beauforts.

LANCASTER, JOSEPH (1778-1838). A British educationist. He took a large room in the Borough Road, London, in 1801, and established a school for poor children, which he conducted on the monitorial principle of setting the older scholars to teach the younger. Managed on undenominational lines, it developed in 1808 into the Royal Lancasterian Society, while in 1912 the name was changed to the British and Foreign School Society. Having emigrated, 1818, Lancaster died in New York, Oct. 24, 1838.

Lancaster Regiment, KING'S OWN ROYAL. Regiment of the British army now known as The King's Own (q.v.).

LANCASTER SOUND. Channel of British North America. It connects Baffin Bay with Barrow Strait, running E. and W. for about 300 m. It is within the Arctic Circle, and was discovered by Baffin in 1616.

LANCE. Spear used by mounted troops. The length of the lance in modern armies varies from 8 ft. 8 ins. to 11 ft. 9 ins., the German equipment being the longest. The weight of a lance is 4 to 4½ lb. Lancer regiments were hardly known until the Napoleonic Wars, and it was due to the effective use that Napoleon made of his lancers at Waterloo that the British army adopted the lance as one of its standard arms. Its use was abolished in 1928, although

for ceremonial purposes only it is still carried by the Lancer regiments.

LANCE CORPORAL. Lowest non-commissioned officer in the British infantry. Lance corporals on the establishment of a battalion wear a single chevron on each sleeve. Lance serjeants are corporals promoted to the rank of serjeant, and wear serjeant's stripes.

LANCELET OR AMPHIOXUS. Small marine creature, forming the class Cephalochorda. From one and a half to three inches in length, the lancelet, found in salt water near the coast, resembles a flat, silvery fish, pointed at both ends, and is remarkable as being the most primitive of the vertebrates. It has no skull or distinct brain, no jaws, heart, ears, eyes, or limbs, but it possesses the notochord characteristic of vertebrates. It is found widely distributed, and feeds on microscopic organisms.

LANCELOT. Character in the *Morte d'Arthur*, generally known as Sir Lancelot of the Lake. He was chief of the Knights of the Round Table. From his illicit love for Guinevere, Arthur's queen, resulted the last battle, in which the king fell. Lancelot then took the habit of a monk.

LANCERS. Regiments of cavalry in the British army. They are so called because their principal weapon was the lance. In 1930 there were four of these regiments, numbered 9th, 12th, 16th/5th, and 17th/21st. Two former regiments, the 5th and 21st, have been amalgamated with the 16th and 17th respectively. The 9th Lancers, dating from 1697, won fame in the Peninsular War, and in India in 1843. It was engaged in the Indian Mutiny, accompanied Lord Roberts to Kandahar, and took part in the S. African War. The 16th Lancers, dating from 1759, was the first lancer regiment to serve in India; and the first British corps to use the lance in action. The 17th Lancers was raised in 1759 as the 18th Light Dragoons and converted into Lancers in 1816. From this regiment's badge, a Death's Head, its popular designation Death or Glory Boys has been derived. In 1929 the 12th Lancers was converted into an armoured car regiment.

LANCERS. Square dance for eight people. It is in five figures, each consisting of several steps. It was invented in Paris in 1836 and introduced into London in 1850, where it soon became popular and was adopted at court ten years later.

LANCEWOOD (*Duguetia quitarensis*). Tree of the order Anonaceae, native of S. America. The wood, owing to its light, elastic character, is largely used for making the shafts of traps and other light vehicles.

LANCHESTER. Village of Durham. It is ½ m. from Durham, with a station on the L.N.E.R. All Saints, an old church, has some Norman work, and was made a collegiate church in 1283. The main occupation of the inhabitants is in the surrounding coal mines. On a hill above the village are remains of a Roman station, hence its name. Pop. 5,091.

LANCIANI, RODOLFO AMADEO (1846-1929). Italian archaeologist and senator. Born in Rome, Jan. 1, 1846, he became secretary of the archaeological commission in 1872. In 1878 he was made director of excavations, and professor of ancient topography in the university of Rome. His publications, numbering from 1871 about 450, include *Ancient Rome in the Light of Recent Discoveries*, 1888; and *The Destruction of Ancient Rome*, 1899. His *Forma Urbis Romae*, 1893-1902, a plan of ancient Rome, comprises 276 sq. ft. He was a member of the Communal Council and acted as Vice Syndic in the Great War, resigning in 1920. He was created K.C.V.O. in 1923. He died May 21, 1929.



Lancashire. Map of the chief industrial county of England. See article p. 833

from 1399 to 1461. In 1267 Henry III created his second son, Edmund, earl of Lancaster. Edmund's son was Thomas, earl of Lancaster, the baronial leader against Edward II, and then came his brother Henry. Henry's son, a second Henry, was made in 1351 duke of Lancaster, the second creation

LANCING. Village of Sussex, England. It stands on the coast 8 m. from Brighton and 2 m. from Worthing, with a station on the Southern Rly. There is a church here dating in part from Norman times, and S. Nicholas College, usually known as Lancing College, is the senior of the schools founded in 1848 by the Rev. N. Woodward. It is conducted on Anglican lines. Pop. 3,163.

LAND. Primarily the solid, dry part of the earth's surface, as opposed to the area covered with water. Its most frequent use, however, is for the soil on which men live and work, from which ultimately all the requirements of the human race are supplied. This divides itself into two main aspects. The amount and nature of the crops produced is the business of the agriculturist, and is discussed under the heading of agriculture and related subjects. The division of the produce of the soil is in the domain of the economist, and connected with it is the question of land ownership.

The crown lands of Great Britain and the lands belonging to the state in other European countries are in the main the remains of the vast estates possessed by the rulers, who were, according to the principles of feudalism, the ultimate owners of all the land in the country. In the U.S.A., Canada, and other newer countries the state assumed possession of all unoccupied land. Much of this has been granted out to settlers, but a good deal is still the property of the state.

THE LAND LAWS. In their inception the land laws of England are derived from the modified feudal system established after 1066. The basis of that system was the giving of land by the owner, called the lord, to a person, called the vassal or tenant, to be held by the vassal in consideration of his rendering certain fixed services to the lord.

Later the practice of entailing estates was introduced, and prevailed widely in Great Britain. By this a landed estate was settled by a man on the heirs of his body, and they could not dispose of it either by deed or by will. The lawyers, however, found a way, called fines and recoveries, of circumventing the law, and for long it was possible to break an entail in this way. Fines and recoveries were abolished in 1833, but entails could be broken after this by deed.

In 1922 and 1925 an important group of measures entirely altered the land laws. Copyhold, primogeniture, and other remains of feudal days were abolished. Land passes by will, or by the rules of intestacy just as any other kind of property. It can be settled on an individual, but only in the same way as other forms of property, not by way of entail.

REGISTRATION OF LAND. The usual method of transferring land is by deed, but to some extent this has been replaced by a system of registration, the state being the registrar. This method has been adopted in Australia, parts of Canada, and some other areas of the British Empire, as well as in some of the states of the U.S.A. Here land is transferred from seller to buyer in much the same way as are stocks and shares.

In England and Wales registration of land was introduced in 1875, but for a time it was only voluntary. In 1897 an Act gave the privy council power to make the registration compulsory in any district. The county of London was chosen for the experiment and offices were opened in Lincoln's Inn Fields. In 1925 registration was made compulsory in the county borough of Eastbourne. The registration of all deeds affecting land is compulsory in Yorkshire and Middlesex. In Yorkshire there are registries at Beverley, Wakefield, and Northallerton. The budget of 1930 proposed a valuation of land for taxation of rateable values.

LANDAU. Four-wheeled horse carriage. It has the top divided, so that it may be closed, half-closed, or open. It is still used in state processions, etc., and is a comfortable vehicle of graceful design. It probably takes its name from the town of Landau in Bavaria.

LAND COURT. Judicial body appointed to administer new and exceptional laws relating to the land. Such are primarily in districts where poverty and discontent with the existing system prevail, as in Ireland and parts of Scotland, where one was set up in 1911. Really, it is the abolished Crofters' Commission in an enlarged form, doing for the whole country what that body did only for the crofting districts. It fixes fair rents, where necessary, and decides questions of price when land is acquired compulsorily for small holdings and the like.

LAND CRAB (Gecarcinus). Crab whose breathing apparatus is so modified as to enable it to live on land. Land crabs are



Land Crab. Specimen of Gecarcinus ruficola, from St. Kitts, West Indies

common in many of the tropical regions and usually live near the sea, burrowing under stones and in the sand. At the breeding season in the spring they make their way in companies to the sea, where the eggs are laid. Their food consists mainly of vegetable matter and offal, and they often inflict great damage in sugar plantations.

LAND LEAGUE. Organization formed in Ireland in 1879. The avowed objects of its promoters were to secure the reduction of rent and the ownership of the land by the peasantry. It was also proposed to raise money for assisting the peasants and to help them with legal advice. The period of its greatest activity, 1879-81, was one of great unrest in rural Ireland, shooting, maiming, and other outrages being frequent. Michael Davitt was the real founder of the league, it was declared an illegal association in Oct., 1881, and gradually its activities decreased.

LANDLORD. General term for one who owns land or houses. The one who hires the land or house from the landlord is known as the tenant, and the relations between the two are regulated by the common law and a number of statutes.

The liability of the landlord and tenant to do repairs is a matter of agreement between them. But in the case of tenements let at not more than £20 in London, £13 in Liverpool, Manchester, or Birmingham, £10 in the rest of England, £8 in Scotland, and £4 in Ireland, the landlord impliedly warrants that the house is fit for habitation, and undertakes to keep it so. In the letting of a furnished house, also, there is an implied condition that the house is reasonably fit for human habitation. In all other cases, unless by express agreement, the landlord is not liable for any repairs, and the tenant must go on paying rent even if the house is burnt down.

The rights of the landlord to charge any rent he can get, to distrain for arrears of rent without summoning the defaulting tenant to the county court, and to recover possession of his property whenever he wishes, subject only to giving the legal notice, were considerably curtailed by the Rent Restriction Acts passed during and after the Great War. The landlords of agricultural land have certain obligations towards their tenants under the Agricultural Holdings Acts.

Tenants who pay property tax on the premises occupied by them can deduct this from the rent paid to the landlord. Any agreement made to the contrary is illegal.

LANDOR, ARTHUR HENRY SAVAGE (1865-1924). British explorer. Grandson of Walter Savage Landor, he was born at Florence. After travels in the East and in America, he explored in 1897 both sources of the Brahmaputra river, and was the first white man to explore central Mindanao Island, and was one of the first to enter the forbidden city of Lhasa. In 1902 he travelled overland from Russia to Calcutta, crossing Persia and Afghanistan, and in 1906 he crossed Africa, travelling 8,500 m. in 364 days. Four years later he crossed the S. American continent from Rio de Janeiro to Lima. His works include *In the Forbidden Land*, 1898. He died Dec 26, 1924.

LANDOR, WALTER SAVAGE (1775-1864). British author. Born at Warwick, Jan. 30, 1775, he was educated at Knowle, Rugby, and Trinity College, Oxford, where his temper got him into trouble with the authorities. Estranged from his family, he spent some time in Wales, where he met the Ioné and Ianthe of his early verse, and the Rose Aylmer whose untimely death at Calcutta in 1800 inspired the elegy that enshrines her name. He raised and accompanied a force to fight for Spanish independence in the Peninsular War, and on his return to England bought the estate of Llanthony Abbey. In 1811 appeared his *Count Julian*, a tragedy. From 1814 he lived in various places in France and Italy, settling in Florence in 1821. His *Imaginary Conversations* appeared, in 5 vols., 1824-29, and his *Citation and Examination of William Shakespeare*, 1834. He left Italy in 1835; published *The Pentameron* in 1837, settled at Bath, 1838-58, and published his collected works, 1846. In 1858 he returned to Florence, where he died, Sept. 17, 1864.

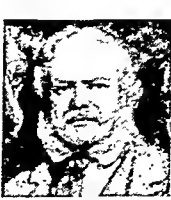


W. S. Landor
British author
After W. Fisher

LANDRECIES. Town of France, in the dept. of Nord. Situated on the canalised Sambre, near the S part of the Morinal forest, it is 11 m W. of Avesnes and 50 m. S.E. of Lille. Long a fortified town on the frontiers of the Netherlands, it figures in Stevenson's *Inland Voyage*. Pop. 2,334.

Landrecies was the scene of a sharp engagement between the British and Germans on Aug. 25, 1914, during the retreat from Mons. In this the Guards were attacked by some Germans, whom in the end they drove out.

LANDSEER, SIR EDWIN HENRY (1802-73). British animal painter. Born in Queen Anne Street East, London, March 7, 1802, son of



Sir Edwin Landseer,
British painter
Self-portrait

John Landseer the engraver, he studied under his father, and in 1816 entered the R.A. schools. His first pictures appeared at the R.A. in 1815. In 1822 his *Larder Invaded* gained him a premium of £150 from the British Institution. He was elected A.R.A. in 1826 and R.A. in 1831. He died Oct. 1, 1873. Landseer, who was the most popular artist of his time, is well represented at the National Gallery, London. He excelled in the portrayal of dogs and deer, his *Dignity and Impudence*, 1839, being well-known. Many of his best paintings showed scenes in the Scottish Highlands. The sculptured lions in Trafalgar Square, London, were amongst his last important works.

LAND'S END. Most westerly point of the island of Great Britain. It is in Cornwall, 9 m. S.W. of Penzance. The cliffs, of granite formation, are 60 ft. in height. To the W. are the Longships (q.v.), a dangerous cluster of rocks with a lighthouse.



Land's End, the most noted promontory in the British Isles

From Land's End to John o' Groats is regarded as the extreme length of Great Britain.

LANE-POOLE, STANLEY (b. 1854). British scholar. Born in London, Dec. 18, 1854, he entered the coins department of the British Museum in 1874. There he prepared the British Museum catalogues of Oriental and Indian coins, 1875-92, and between 1876-93 he completed his great-uncle E. W. Lane's Arabic lexicon. A visit to Egypt in 1883 resulted in *Social Life in Egypt and Studies in a Mosque*, 1883, and *Art of the Saracens*, 1886. He left the Museum in 1892, and was afterwards employed on archaeological research by the government of Egypt. He was professor of Arabic at Trinity College, Dublin, 1898-1904. In 1906 he brought out an edition of *The Thousand and One Nights*.

LANERCOST. Parish and village of Cumberland. It stands on the Irthing, 11 m. from Carlisle. Here was an Augustinian priory founded by Robert des Vaux about 1169. In 1928 Lady Cecilia Roberts, a daughter of the 9th earl of Carlisle, presented the ruins to the nation. The station is Brimpton, 2 m. away. The Chronicle of Lanercost is valuable for the affairs of the north of England in the time of Edward I and II.

LANFRANC (c. 1005-89). Archbishop of Canterbury. Born at Pavin, Italy, and educated as a jurist, he founded a college at Avranches. In 1042 he entered the Benedictine abbey of Bec, near Rouen, of which in 1045 he became prior. When Duke William founded the monastery of St. Stephen at Caen in 1066, Lanfranc was nominated its first abbot. He was made archbishop of Canterbury in 1070. As primate he is remembered for his efforts to purify English monasticism, his zeal for the enforcement of clerical celibacy, and his works of charity. After the fire of 1067 he rebuilt Canterbury Cathedral. He died May 24, 1089.

As a theologian, Lanfranc took a prominent part in the controversy with Berengar of Tours, 1050, on the question of transubstantiation (q.v.). He set forth his views in the treatise *De Corpore et Sanguine Domini*.

LANG, ALEXANDER MATHESON (b. 1879). British actor. Born at Montreal, May 15, 1879, he appeared at The Lyceum, London, in 1900, as Mountjoy, in *King Henry V*. He scored successes in Shakespearean and other parts, and from 1909-12 toured in America, Australia, S. Africa, and India. He reappeared in London at His Majesty's in 1913, and made his great success as Mr. Wu in the play of that name. In 1919 he produced *Othello*, playing the name part, and in 1920 created the leading part in *The Wandering Jew*. From 1922 he appeared in *Christopher Sly*, *Blood and Sand*, *Jew Süss* (1929), and other plays, and in films.

LANG, ANDREW (1844-1912). Scottish author and editor. Born at Sellirk, March 31, 1844, he became hon. fellow of Merton College, Oxford. One of the most versatile and graceful of writers, he was responsible for more than sixty books and a vast amount of literary journalism, appearing notably in *The Daily News*. Lang died July 20, 1912.

In poetry he was author of *Ballades and Verses Vain*, 1884; *Grass of Parnassus*, 1888; and *Ban and Arrière Ban*, 1894. His *History of Scotland* appeared in 1900-7; *Prince Charles Edward*, 1900; *The Mystery of Mary Stuart*, 1901; *John Knox and the Reformation*, 1905; and *Joan of Arc, The Maid of France*, 1908. He wrote *Letters to Dead Authors*, 1886. He edited *Longmans' Magazine* and many fairy books, and was an original member of the *Psychical Research Society*.

LANG, COSMO GORDON (b. 1864). British prelate. Born Oct. 31, 1864, he became a fellow of Magdalen College, Oxford, and was ordained. After three years (1890-93) as a curate in Leeds, he returned to Oxford, where he was dean of divinity at Magdalen and vicar of S. Mary the Virgin, 1894-96. From 1896-1901, Lang was vicar of Portsea. During 1901-8 he was bishop of Stepney and canon of S. Paul's. In 1908 he was made archbishop of York, and in 1928 he was chosen to succeed Dr. Davidson as archbishop of Canterbury.



Cosmo Gordon Lang, British Prelate Russell

LANGDALE. Name of two hills, or pikes, and two valleys in the Lake District in Westmorland, near Grasmere. Great Langdale is a valley 5 m. long, reaching from the Cumberland border to Elterwater; the Langdale beek flows through it. Little Langdale is 3½ m. long and meets Great Langdale at Elterwater. The pikes are at the head of Great Langdale: they are 2,400 and 2,320 ft. high, and are known as Harrison Stickle and Pike o' Stickle respectively. In 1929 Mr. G. M. Trevelyan presented 400 acres at the head of the Langdale Valley to the National Trust.

LANGHOLM. Burgh of Dumfriesshire Scotland. On the Esk, 16 m. N.E. of Annan, on the L.N.E.R., it has manufactures of tweed. Near are Langholm Lodge, a seat of the duke of Buccleuch, and Gilnockie Tower, the stronghold of Johnny Armstrong. Pop. 2,653.

LANGLAND, WILLIAM (c. 1330-1400). English poet. Born at Cleobury Mortimer, in Shropshire, he became a clerk or minor priest, but further progress in the Church was barred by his being married. As a young man he came to London, and earned a living chiefly by chanting dirges at funerals. The great gulf between rich and poor impressed him deeply, and his feelings found expression in his poem. *The Vision of Piers Plowman*.

LANGPORT. Market town of Somerset. It is on the Parret, 11 m. from Yeovil, on the G.W. Rly. Near All Saints is an old chapel called the "Hanging Chapel," because it stands on an archway over the road. Langport was the scene of an engagement during the Civil War, on July 10, 1645, in which, although numerically superior, the royalists under Goring were beaten. Market day, alternate Tues. Pop. 781.

LANGSIDE. Historic spot in Scotland, now included in the city of Glasgow. It has a station on the L.M.S. Rly. It was a village outside Glasgow when, May 13, 1568, the troops of Mary Queen of Scots, about 6,000 strong, were met by about 4,500 under the regent Murray and routed, Mary fleeing to England. A monument commemorates the battle. See *Glasgow*; *Mary Queen of Scots*.

LANG'S NEK OR LAING'S NEK. Pass through the Drakensberg Mts., Natal. Near the borders of the Orange Free State and the Transvaal, it is 5,399 ft. high. A rly. line goes through the pass by a tunnel, the Nek being on the direct route from Durban to Pretoria. During the war between the British and Boers in 1880-81, the Boers occupied the Nek, where

they were attacked by a small force, Jan. 28, 1881. The latter was driven back, and Majuba followed. There was fighting in the pass during the S. African War, especially in May and June, 1900.

LANGTON, STEPHEN (d. 1228). English prelate and statesman. He was of British birth, studied at Paris, and in 1206 was made a cardinal by Innocent III. Being soon afterwards elected archbishop of Canterbury, he was rejected by King John and took refuge in France until 1212. Under a threat of deposition, John at length gave way, and Langton, as primate, entered upon a contest against kingly tyranny and papal usurpation. In 1215 he had a large share in securing Magna Carta from John. In 1223 he procured the confirmation of Magna Carta, and in 1225 defended the English Church against fresh levies demanded by Rome. He died July 9, 1228, and was buried in Canterbury cathedral.

LANGTRY, LILLIE (1852-1929). British actress. Born in Jersey, Oct. 13, 1852, daughter of W. C. E. Le Breton, dean of the island, she made her début at The Haymarket in 1881 as Kate Harcastle in *She Stoops to Conquer*. Her great beauty and talent made her an immediate favourite. In 1874 she married Edward Langtry, who died in 1897, and in 1899 she became the wife of Sir Hugo de Bathe. She toured in the provinces and in the U.S.A. She died at Monte Carlo, Feb. 12, 1929.



Lillie Langtry, British actress Ellis & Watery

LANGUAGE (Lat. lingua, tongue). In the narrowest sense, the communication of ideas between man and man by means of articulate speech. The earliest sounds were probably merely reflex, involuntary, and independent of the will, produced under the impulse of the emotions. The next stage is that of emotional imitation. In the case of different individuals similarly constituted, similar impressions of the senses would produce similar involuntary sounds. If any movement or sound created an impression, e.g. of pleasure or pain, the sound uttered as the result of such impression was of the nature of an interjection. There is no doubt that, at least in the earliest stages of a language, imitation ("bow-wow") and exclamation ("pooh-pooh") played a considerable part.

The communication of ideas followed the communications of emotions. But the development of the process of imitation of the uttered sounds must have been slow. At the time of the beginnings of language there existed no standard authority, such as regulates the sounds heard around him by the child of modern times. Language must at first have consisted of a medley of articulate utterances of most varied character, in which uniformity and their usage in common only became possible when certain sounds were employed by different individuals on their own initiative, uninfluenced by imitation. But the most decided step in the progress of language was the establishment of relations between two words for two things, and the combination of several words in a single sentence. Then only did it become possible for man to transcend the limits of the senses and to investigate matters which were beyond his ken. See *Phonetic Philology*; consult *The Romance of Language*, A. Chaplin, 1920.

LANGUEDOC. One of the provinces into which France was divided before the Revolution. It covered the south-central part of the country, from the Pyrenees almost to the Loire; E. it was bordered by the Rhône. The people there pronounced the word for yes, oc, not oil, as they did elsewhere: their

speech, therefore, became the langue d'oïl and their land Languedoc. Languedoc was a prosperous and populous part of the Roman Empire, afterwards passing to the Franks. Its chief town was Toulouse. Since the Revolution, Languedoc has been divided into the departments of Haute Garonne, Ariège, Hérault, Aude, Gard, Lozère, Pyrénées-Orientales, and one or two others. See France.

LANKESTER, SIR EDWIN RAY (1847-1929). British scientist. Born May 15, 1847, the son of a doctor, he began his teaching career as a lecturer at Exeter College, Oxford. From 1874-90 he was professor of zoology at University College, London, and from 1891-98 Linaere professor of comparative anatomy at Oxford. In 1898 he was appointed director of the Natural History departments at South Kensington, and there he remained until 1907, when he was knighted. He died Aug. 15, 1929.

As a zoologist and follower of Darwin and Huxley, Lankester was in the first rank. He founded the Marine Biological Association, and his writings include *Degeneration*, 1880; *The Advancement of Science*, 1889; *The Kingdom of Man*, 1907; *Diversions of a Naturalist*, 1915; *Half-hours with the Microscope*, 1918; *Secrets of the Earth and Sea*, 1920; *Great and Small Things*, 1923. He also contributed to the press *Science from an Easy Chair*, published in book form, 1910 and 1912.

LANNER (Falco feldeggii or F. lanarius). Species of small falcon, found around the Mediterranean. Its plumage is brown on the upper parts, with barred back and blackish head and a reddish neck. The adult male measures about 17 ins. in length. See Falcon.

LANOLIN. Purified fat of sheep's wool that has been freed from water. A white or yellowish-white substance insoluble in water, its chief constituents are cholesterol and the esters of stearic, palmitic, oleic, and other acids. It is more readily absorbed than most fats when rubbed into the skin, and is partly antiseptic, hence its use as the basis of a large number of face creams and ointments.

LANREZAC, CHARLES LOUIS MARIE (1852-1925). French soldier. Born at La Pointe à Pitre, Guadeloupe, July 30, 1852, he entered the French army in 1870. After fighting through the Franco-Prussian War, 1870-71, he was on active service in Tunisia, 1886-92. Colonel in 1901, he was brigadier-general in 1906, governor of Reims in 1909, and general of division in 1911. At the outbreak of the Great War he was in command of the 5th Army, which was driven back from the Sambre, necessitating the retreat from Mons, Aug.-Sept., 1914. In Oct., 1914, Lanrezac was relieved of his command, being appointed inspector of military schools, and in 1917 was inspector general. He died Jan. 17, 1925.

LANSBURY, GEORGE (b. 1859). British socialist leader. Born Feb. 21, 1859, he earned a living in various ways for some years, and in 1884 went out to Australia. Returning to England in 1885, Lansbury soon became an active politician. In 1891 he was elected poor law guardian for Bow and Bromley, and in 1903 to the Poplar borough council. He was elected also to the L.C.C., and from 1910 to 1912 was M.P. for Bow and Bromley. From 1914-22 he was



George Lansbury,
British politician
Russell

editor of *The Daily Herald*. A member of the commission on the poor laws, he was again M.P. for Bow and Bromley from 1922. In June, 1929, he was appointed first commissioner of works in the Labour government.

LANDSDOWN. Hill in Somerset, just outside Bath. It is known for the battle with Germany. He died June 3, 1927. His portrait, by Lord Newton, appeared in 1929. In Nov., 1917, he advocated peace outside Bath. It is known for the battle with Germany. He died June 3, 1927. His portrait, by Lord Newton, appeared in 1929. In Nov., 1917, he advocated peace outside Bath. It is known for the battle with Germany. He died June 3, 1927. His portrait, by Lord Newton, appeared in 1929.

LANDSDOWNE, MARQUESS OF. British title borne by the family of Fitzmaurice since 1784. Thomas Fitzmaurice, who died in 1280, was created baron of Kerry. A long succession of barons followed, and in 1722 the 21st baron was made earl of Kerry. The first earl's younger son, John, inherited the estates of his uncle, Henry Petty, earl of Shelburne, and was himself made earl of Shelburne in 1753. His son, the 2nd earl, in 1784 was created marquess of Lansdowne, and the 3rd marquess inherited the earldom of Kerry.

The third marquess (1780-1863) was an M.P. from 1802 until he succeeded his half-brother in the title in 1809. One of the leaders of the Whigs, he was home secretary in 1827. From 1830 to 1841, except for a few months in 1835, he was lord president of the council, a post he filled again 1846-52. He was in the cabinets of Lord Aberdeen and Lord Palmerston from 1852 almost until his death, but without office. Lansdowne, who refused both the office of prime minister and a dukedom, died at Bowood, Jan. 31, 1863.

The family seat is Bowood, Wiltshire. The London residence was known as Lansdowne House. In Berkeley Square, the mansion was built in 1766 from designs by the brothers Adam. (See *illus.* p. 403.)

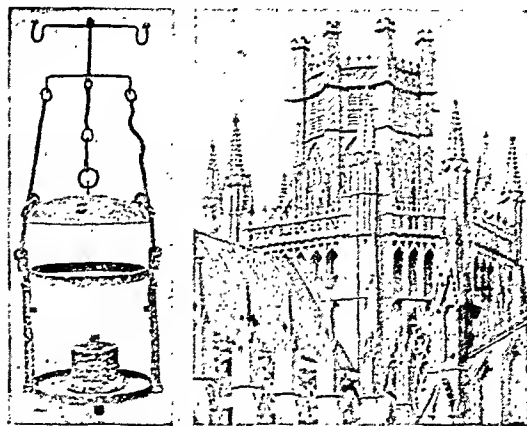


Lord Lansdowne,
British statesman
Elliott & Fry

The sculpture gallery was added in 1778, and the library, built by G. Dance, jun., R.A., in 1790. In 1929 it was sold. The marquess's eldest son is known as earl of Kerry.

LANDSDOWNE, HENRY CHARLES KEITH FITZMAURICE, 5TH MARQUESS OF (1845-1927). British statesman. Born Jan. 14, 1845, the elder son of the 4th marquess, he soon became prominent in the House of Lords. Adhering to the Whig traditions of his family, he joined the Liberal ministry as a lord of the treasury in 1869, and in 1872-74 was under-secretary at the war office. In 1883 he went to Canada as governor-general, and after five years there was transferred to India, where he was viceroy until 1893.

By this time the marquess had joined the Liberal Unionists, and he became secretary for war in Lord Salisbury's ministry in 1895. From 1900-05 he was secretary for foreign affairs. On Lord Salisbury's resignation he assumed the Unionist leadership in the House of Lords. In 1915, when a Coalition government was formed, he joined it as a minister without



Lantern. Left, Roman bronze lantern. Right, octagonal lantern, or openwork stone structure, on the tower of Ely Cathedral.

LANTERN. Name given to a case to contain a light. It usually consists of a metal framework containing windows of glass, mica, horn, or some other transparent material. The light may come from a candle, oil, etc. In engineering, any lantern-shaped construction is often called a lantern, e.g. a lantern pinion or trundle wheel.



Lantern Fly. Specimen of *Fulgura nobilis*, a species found in Borneo

In architecture lantern means an openwork structure of timber or stone, circular or polygonal in shape, erected on the summit of a tower or dome, or the roof of a dwelling-house. Occasionally the term is used of a tower that is open-work wholly or in front.

LANTERN FLY (Fulgoroidea). Family of homopterous insects, found in Great Britain and in many other parts of the world. They are often brilliant in colour, and the curious forms assumed by the heads of some of the tropical species are supposed to resemble lanterns. They are sap-suckers, and do great damage to crops.

LANTHANUM. Rare earth metal, discovered by Mosander in 1839. Chemically it is an element, symbol La; atomic weight, 138.9; atomic number, 57; specific gravity, 6.16; melting point, 810° C. In colour and lustre it resembles iron, and is readily attacked by moist air, while boiling water decomposes it. It is found in lanthanite, a form of the mineral cerite, and also in orthite, monazite, and some other minerals. Lanthanum nitrate is used for stamping a mark or name on incandescent mantles, the mark coming out brown.

LAO. Siamese name for a people of Tai stock in Indo-China. They number about 2,000,000 in Siam, with smaller offshoots in other parts of French Indo-China. Lax Buddhists, they occupy huts, erected on piles, which enclose the domestic animals and weaving looms.

LAOCOON (Gr. Laokoön). In Greek mythology, the Trojan priest who warned his countrymen of the wooden horse, the Greek stratagem which proved so disastrous to Troy. After his warning two serpents sent by Poseidon



Laocoön. Famous sculpture found in 1503, now in the Vatican Museum, Rome

came up from the sea while Laocoon was sacrificing and crushed the priest and his two sons to death. This incident is depicted in the famous piece of statuary discovered in Rome in 1506 and now in the Vatican Museum. Rome Pron. Lay-oeko-on.

LAODAMIA (Gr. Laodameia). In Greek mythology, wife of Proteus. When her husband had been killed at Troy, she asked the gods if he might return from Hades to converse with her for three hours. When Proteus went back to Hades, Laodamia died and went with him.

LAOMEDON. In Greek mythology, king of Troy. The gods Poseidon and Apollo, having offended Zeus, were condemned to give their services to Laomedon. When the period ended the two gods claimed from Laomedon the reward he had promised. Laomedon refused, and in revenge Poseidon sent a sea-monster to ravage the neighbourhood of Troy, to which a maiden had to be sacrificed from time to time.

Hesione, the king's daughter, was saved by Hercules, who killed the monster, but a second time the king proved faithless, refused the promised reward, and Hercules, in his wrath, led an expedition against Troy and killed Laomedon and all his sons, except Priam, who became king. Pron. La-ommed-on.

LAON. Town of France. It lies 87 m. by rly. N.E. of Paris. The cathedral of Notre Dame is a fine example of Gothic architecture, with a splendid W. façade and impressive towers; it dates chiefly from the 12th-14th centuries. The palais de justice was formerly the episcopal palace, built in the 13th century. The town was taken by German troops on Aug. 30, 1914, and it remained in German hands until its recapture by the French, Oct. 13, 1918, after a series of battles, Aug.-Oct. Pop. 16,159.

LAO-TSE (6th cent. B.C.). Chinese philosopher, a contemporary and opponent of Confucius. He was librarian to a prince of the Chu dynasty, and at an advanced age retired to a hermitage. Here he wrote Tao-teh-king (the canon of reason and virtue), one of the Chinese sacred books. His doctrine may be described as a mystical pantheism.

LA PAZ. Largest town and commercial capital of Bolivia, S. America. It stands on a dry plateau over 12,000 ft. high, and is connected by rail with Arica and Antofagasta in Chile, and also with Buenos Aires. It is the seat of a university. Pop. 142,000.

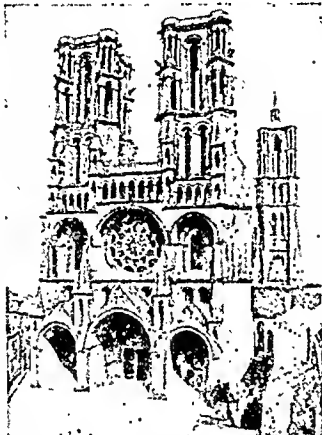
La Paz is also the name of the capital of Lower California, Mexico, and of a port of the Argentine Republic, on the river

Paraná, 87 m. N.E. of Panamá city.

LA PEROUSE, JEAN FRANÇOIS DE GALAUP, COMTE DE (1741-88). French sailor. Born Aug. 22, 1741, he entered the navy and served against the British. In 1785 he went with two ships on a voyage round the world. He had made some valuable discoveries, when he

was wrecked early in 1788 on a coral reef north of the New Hebrides. His name is borne by some islands in this region and his journals were published in 1797.

LAPIS LAZULI OR **LAZURITE**. Mineral valued for decorative and ornamental purposes. Consisting of sodium and aluminium orthosilicate and sodium sulphide, it usually possesses a fine blue colour, and is found in compact masses in granite and crystalline limestone. Lapis lazuli, the sapphire of the ancients, has been used as a decorative stone from the earliest times. Powdered, it was esteemed in ancient times in medicine as a dressing for ulcerations. It is the base of the pigment ultramarine. See Ultramarine.



Laon, France. Façade of the cathedral of Notre Dame, built 12th-14th cent.

LAPLACE, PIERRE SIMON, MARQUIS DE (1749-1827). French astronomer. Born at Beaumont-en-Auge, March 28, 1749, he became professor of mathematics at the Ecole Militaire. His remarkable mathematical ability was early shown by the publication, 1766-69, of his researches on the integral calculus, followed by papers on the theory of probability. In 1794 he became professor of analysis at the Ecole Normale. In 1796 he published his *Exposition du système du monde*, and in 1799 his *Mécanique Céleste*, these being his two most celebrated works. Made a count by Napoleon, 1804, and a marquis by Louis XVIII, he died at Arcueil, March 5, 1827.

Laplace was the greatest astronomer France has produced. His famous nebular hypothesis, his mathematical researches into the inequalities of the motions of Jupiter and Saturn, of the motions of the moon and the tides, and into the equilibrium of the solar system have given him enduring fame.

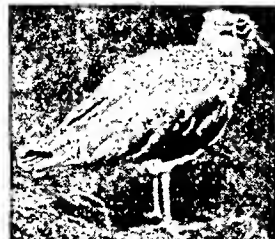
LAPLAND. Homeland of the Lapps, an undefined district in the N.W. of Europe. It extends W. from the White Sea to the Atlantic Coast in the N. of Scandinavia, and includes parts of Finland, Sweden, Norway, and Soviet Russia. The Lapps are of Finno-Ugric stock and speak Lappish. They are a short, ungainly, brown-haired, flat-faced, yellowish-white, round-headed people, some being reindeer-nomads, others living in coast and riverside fishing and cattle-breeding settlements. They number in all some 30,000.

LA PLATA, RIO DE, OR **RIVER PLATE** (Sp Silver river). Estuary of S. America. Between Uruguay on the N. and Argentina on the S., it is formed by the union of the Uruguay and Paraná rivers. It is 200 m. long and 140 m. wide at its mouth. The N. shore is steep, the S. low, with sandbanks. With affluents, it drains an area estimated at 1,500,000 sq. m.; and its muddy stream is noticeable over 50 m. out at sea. The estuary is continually silting

up, involving constant dredging, while its shoals and currents render its navigation dangerous.

LA PLATA. City of the Argentine. It is 35 m. by rly S.E. of Buenos Aires and 5 m. by rly. and canal from Ensenada, its port on the Río de la Plata. Founded in 1882, it has many squares and parks, a cathedral, university, and observatory. Pop. 169,678.

LAPWING. Common British bird, *Vanelius cristatus*, one of the plovers. It is often known as the peewit from its call-note. The back and crest are dark green, the throat black, and the cheeks and underparts white. The bird is found especially in marshy districts, where it feeds mainly upon snails, insects, and worms. See Plover.



Lapwing or Green Plover, a common bird of the English countryside

LARBERT. Colliery and iron working centre of Stirlingshire, Scotland. On the Carron, 2½ m. from Falkirk and 8 m. from Stirling, it has stations on the L.M.S. and L.N.E.R. The dist. around was formerly called Torwood Forest. Pop. 12,389.

LARCENY (Lat. *latrocinium*, robbery). Term used in English law to describe one kind of theft. To "steal, take and carry away" the goods of another, with intent to deprive the owner of his property in them, is larceny.

There are several forms: (1) Simple larceny or common theft; (2) larceny in a dwelling-house; (3) larceny as a bailee—where a person entrusted with the property of another appropriates it for himself; (4) larceny from the person, which if accompanied by violence is called robbery, and is punishable by corporal punishment. Larceny is a felony. The punishment varies from a maximum of three years' penal servitude for simple larceny to 14 years for larceny in a dwelling-house. See Theft.

LARCH (*Larix europaea*). Lofty pyramidal tree of the order Coniferae, a native of Europe, where its home is chiefly in the central Alps. Its branches spread with a downward sweep on all sides and give it a graceful symmetry. The needle-like leaves are disposed in bundles, and are completely shed on the approach of winter. Its growth is very rapid, and it attains a height of 100 ft., with a very straight, tapering trunk, clothed with longitudinally furrowed brown bark. The timber is used for pit props, poles, and railway purposes.



Larch. Cones and foliage

LARES (old form, *lases*). In Roman mythology, originally divinities who watched over agricultural pursuits. They were worshipped at the cross roads, where an annual festival was held in their honour. Each household also had a private lar or household god (afterwards two), whose image was kept on the hearth or in the lararium, a kind of chapel set apart for the purpose. They were also tutelary deities of travellers, of streets and districts, and of entire towns and cities.

LARGO. Parish of Fifeshire. It is on Largo Bay, 3 m. N.E. of Leven, on the L.N.E.R. Alexander Selkirk, to whom there is a statue, was a native. The chief industry is fishing. Near is Largo Law. Pop. 3,215.



La Paz, Bolivia. Plaza del 16 Julio, showing the Legislative Palace



Lapland. Family of Lapps outside their cavellike home near Tromsø

LARGS. Burgh and watering place of Ayrshire, Scotland. It stands on Largs Bay, an opening of the Firth of Clyde, 11 m. from Greenock and 43 from Glasgow, on the L.M.S. Railway. An aisle of the old parish church still stands and has been turned into a mausoleum. The town is famous for the battle fought in 1203 between the Scots and the Norwegians, Haakon of Norway being defeated by Alexander III. Pop. 9,450.

LARK (Alaudidae). Name given to a large family of small birds, including about a hundred species, most of which occur in the E. Hemisphere. Seven species are included among the birds of Great Britain, but only two breed here. The skylark (q.v.) is the best known, and is found throughout the country. The wood lark is widely distributed but is very local. It closely resembles the skylark, but is smaller in size. Characteristic features are the long, straight claw on the hind toe and the long, pointed wings.

LARKHALL. Colliery centre of Lanarkshire. It is on the Avon near its junction with the Clyde, 3 m. from Hamilton, on the L.M.S. Rly. Besides mining, there are manufactures of bricks and tiles. Pop. 14,974.

LARKSPUR. Genus of annual and perennial herbs of the order Ranunculaceae, also known as delphinium. The field larkspur (*D. ajacis*) is an annual, with the leaves divided into many thread-like segments, and with erect sprays of blue, pink, or white flowers. See Delphinium.

LARMOR, Sir JOSEPH (b. 1857). British scientist. Born at Magheragall, co. Antrim, July 11, 1857, he was educated at Belfast and St. John's College, Cambridge. In 1880 he was made professor of natural philosophy in Queen's College, Galway, but in 1885 he returned to Cambridge as lecturer. In 1903 he was chosen Lucasian professor of mathematics at Cambridge, and was secretary of the Royal Society, 1901-12. In 1909 he was knighted, and from 1911 to 1922 was Unionist M.P. for the university. He wrote *Aether and Matter*, 1900, and memoirs on physics, etc., re-published, 1927-29.

LARNE. Seaport and watering place of co. Antrim, Northern Ireland. It is 24 m. from Belfast, with a station on the Northern Counties Committee Rly., and stands at the entrance to Lough Larne. There is a good harbour, from which there is a regular service to Stranraer in Scotland 39 m. away, and other ports. It was a flourishing port before the rise of Belfast, reviving when it was made a steamship terminus. Pop. 8,100.

LA ROCHEFOUCAULD, FRANÇOIS, DUC DE (1613-80). French author. Born in Paris, Sept. 15, 1613, of one of the oldest French noble families, he became a leading figure in the salons of the capital. In 1665 he published anonymously *Reflexions ou Sentences et Maximes Morales*, now best known as *Maxims*. The book has been widely translated, and gained for the author the distinction of being the originator of studies in morals. He died March 17, 1680, leaving some of the best *Memoirs of the 17th century*.

LAROUSSE, PIERRE ATHANASE (1817-75). French lexicographer. Born at Toucy, Yonne, he began by writing text-books of grammar for schools, and then established a notable journal, *L'École Normale*. His name is chiefly associated with the *Grand Dictionnaire Universel du XIXe Siècle*, 15 vols. (1866-76), supplements, 1877 and 1887. His earlier *Nouveau Dictionnaire* had reached its 30th edition by the time of his death; he also published *Fleurs Latines*, 1874, a key to Latin quotations. The *Nouveau Larousse illustré*, ed. C. Augé, appeared in 1898-1907, and is kept up to date by the monthly publication, *Larousse Mensuel illustré*.

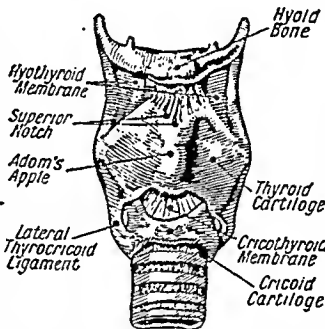
LARVA. Term applied to the young of any animal which, after leaving the egg, differs in essential characters, and generally in appearance, from the adult. In many cases the larva is adapted to an aquatic life, while the adult lives upon land. In the case of the cockroach and grasshopper, etc., the larvae differ little externally from the adult, except in size and the absence of wings. The change from the larval to the adult stage may be through a resting stage, or by gradual change. See Chrysalis; Insect.

LARYNGITIS. Inflammation of the mucous membrane of the larynx. Acute and chronic forms are recognized. In acute laryngitis there is a dry cough, the voice becomes husky, and the throat painful. The patient should not use his voice. Dover's powder may be given if the irritation and cough prevent sleeping, and an ice bag or cold compress applied externally. Chronic laryngitis may follow repeated acute attacks, excessive smoking, or constant over-use of the voice. The larynx should be sprayed with a solution of chlorate of potash or tannic acid.

Spasmodic laryngitis, or laryngismus stridulus, is a nervous condition occurring in young children, and often associated with rickets. Dashing cold water on the face sometimes relieves the paroxysm. Treatment should be directed towards relieving the underlying rickety condition. See Throat.

LARYNX. Expanded upper part of the air passage which serves for the production of the voice. It is a cartilaginous box-like structure, situated in the front and upper part of the neck. Below, the larynx passes into the trachea or windpipe, and above into the pharynx. The cartilages composing the larynx are the thyroid, which is the largest and forms the "Adam's apple"; the cricoid cartilage, shaped like a signet ring; and smaller cartilages. The epiglottis projects upwards behind the root of the tongue.

Inside the larynx are the vocal cords. The false vocal cords are two prominent folds of mucous membrane on the sides of the larynx. The true vocal cords are composed of elastic tissue covered by mucous membrane, and are situated immediately below the false vocal cords. In speaking, a current of air is directed upwards from the lungs through the larynx, and a musical note is produced by vibrations of the true vocal cords, the movements of the cords altering their tension and so determining the pitch and character of the note. The articulate character of the sound when



Larynx from the front, showing the cartilaginous structures which form its framework. The vocal cords lie behind the Adam's apple.



Las Palmas, Canary Islands, from the west, showing the massive pile of the 16th century cathedral.

words are uttered is imparted to the note by the movements of the tongue and lips. In the act of coughing or sneezing the vocal cords are closed.

A surgical instrument for examining the larynx and trachea or wind-pipe is termed a laryngoscope. See Throat; Voice.

LA SALLE, RENÉ ROBERT CAVELIER, SIEUR DE (1643-87) French explorer. Born at Rouen, Nov. 22, 1643, he went to Canada as a young man, and in 1669 embarked on a voyage of discovery up the St. Lawrence and charted the northern lakes. Travelling thence, he explored the Ohio river as far as its junction with the Missouri. In 1682 he travelled down the Mississippi as far as the Gulf, thus being the first to follow that river as far as the sea. He proclaimed the river and all adjacent lands as territory of France, and later was appointed governor of the territory from Michigan to the Gulf of Mexico. Mistaking Matagorda Bay, on again landing in America, for the mouth of the Mississippi, he spent two years in fruitless attempts to find this opening. He was leading his party to Canada, when his party murdered him, Mar. 20, 1687.

LASCAR. Name usually denoting an Oriental seaman on a British ocean-going ship. At the International Seamen's Conference in Genoa on July 5, 1920, the Indian government delegate stated that the name covered deck hands only, excluding firemen and stewards. They are largely recruited from the Mahomedan boat-population of Kathiawar. The name in early British-Indian history was applied also to camp followers.

Lascelles, Viscount. Title borne by the eldest son of the earl of Harewood. See Harewood, Earl of.

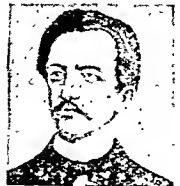
LASKER, EMANUEL (b. 1868). Chess player. Born at Berlinchen, Germany, Dec. 24, 1868, he made a special study of mathematics and contributed mathematical articles to various scientific journals and societies. He won the chess championships of England in 1892, America, 1893, and the world, 1894. He abandoned the title of world's chess champion to Capablanca in June, 1920, but the latter induced Lasker to meet him in Havana in 1921. The match ended with Lasker's defeat.

LAS PALMAS. Seaport of the Canary Islands. On the N.E. coast of Grand Canary, it is an important port of call with a wireless station and coaling depot. The most notable building is the cathedral. Pop. 69,086.

LASSALLE, FERDINAND (1825-64). German socialist. Born at Breslau, April 11, 1825, of a wealthy Jewish family, he devoted himself to democratic agitation, which in 1848 resulted in his imprisonment. His system of Acquired Rights, published in 1861, outlines his ideas on the organization of society. In 1863 he was asked by the workers to formulate an effective scheme of reform. His answer was the famous open letter, which has been called the "barter of German socialism." The result



Lascar stoker



Ferdinand Lassalle, German socialist

was the foundation, in May, 1863, of the General Working Men's Association. Marx was associated with Lassalle in the formation of this association. Lassalle died Aug. 31, 1864.

LASSO (Span lazo, snare). Cord or thong with a slip-noose for capturing animals. Of plaited untanned hide, 30 ft. to 100 ft long, it is used throughout Latin America for catching horses and cattle. On the N. American prairies it is a hempen rope. The coiled lasso is thrown from horseback, being cast so that the noose fastens round either the leg or the head of the quarry. Tunguses and other Siberian tribes use short lassos for bringing in reindeer.

LASSWADE. Burgh of Midlothian, Scotland. It stands on the N. Esk, 6 m. from Edinburgh, on the L.N.E.R. Here Sir Walter Scott resided for several years. Pop. 913.

LASZLO DE LOMBO, PHILIP ALEXIUS (b. 1869). Portrait painter. Born at Budapest, of Hungarian parentage, he studied in Munich and at Julian's in Paris. His best known work includes portraits of King Edward VII and Queen Alexandra, prince Hohenlohe, Lord Roberts, and President Roosevelt. He settled in England and was naturalised on July 28, 1914.

LATAKIA. Seaport of Syria, in the state of the Alaouites (Alawis). The ancient Laodicea ad Mare, it lies about 70 m. N. of Tripoli, and has a considerable trade in oil, olives, sponges, and tobacco, grown on the neighbouring hills. The tobacco which comes from here is called latakia. Pop. 20,000.

LATEEN SAIL (Fr. latine, latin). Large triangular sail now used only by vessels in the Mediterranean and certain Asiatic waters. It has a very long yard and a short mast. See Felucca.

LA TÈNE. Celtic settlement near Marin, Switzerland. It is near Lake Neuchâtel and was exposed when the water level of the lake was lowered.

Originally classed with lake dwellings, it is now shown to have been a land settlement, whose situation on the trade highway between the Rhine and the Rhône valley led to its becoming a customs station and fortified camp. The remains include iron objects, chiefly weapons, and personal ornaments of bronze, silver, and other materials. The characteristic types of fibula, bead, and other ornaments are found in Gaul, Britain, Scandinavia, Bosnia, and Scythia. Hence this station gives its name to the second period of iron-age culture, following that of Hallstatt, and extending from 400 B.C. to the Christian era. See Archaeology. Iron Age.

LATERAN. Palace of the popes at Rome before the transfer of the papacy to Avignon. By the time of the return to Rome it had fallen into such disrepair that the papal headquarters were removed to the Vatican. It owes its name to the ancient Roman family of the Laterani. The actual palace was erected in 1586, and was partly used by Gregory XVI as a museum of sculpture. The chapel of the Santa Seala is traditionally identified with the house of Pontius Pilate. Contiguous is the church of S. John Lateran and its baptistery, the oldest in Rome. The Lateran Treaty, signed Feb. 11, 1929, granted the Pope sovereign jurisdiction over territory known as Vatican City. See Vatican.

The church of S. John Lateran was a favourite place of assembly for ecclesiastical councils. Of eleven synods held here, five classed as ecumenical councils are specifically known as the Lateran councils.

LATERITE. Reddish to yellowish brown deposit of clay or earth occurring in wide areas in the tropics especially India, Brazil, and the Sudan. It is formed by the decomposition of certain rocks, and consists largely of iron oxides. The deposit may run to 40 ft. in thickness, and is worked for building purposes, chiefly in the making of cements, mortar, and tiles.

LATHE. Mechanical appliance for the holding and rotating of wood, metal, ivory, or other materials for the purpose of cutting, scraping, polishing, etc. The earliest form of lathe consists of two supports for the object to be turned. The latter is revolved rapidly by a cord wound round it and pulled against a spring, the object constantly altering its direction of rotation. The substitution of a crank attached to a flywheel, converting the reciprocating motion of a treadle to rotary motion, proved a great advance. In most modern lathes the flywheel is mechanically driven. A chisel or other cutting tool removes the wood as the object is turned in the lathe, and for repetition

Lasso. It is first whirled above the head and then cast

work the cutting tool follows a pattern, so cutting out an exact facsimile. Metal-working lathes vary in size from a small inchline used by jewellers to huge machines for shaping guns weighing some 200 tons or more.

Lathe (A.S. loeth, district). Division of Kent. There are five lathes, each containing three or more hundreds. See Kent.

LATHOM. Village of Lancashire, 3 m. from Ormskirk. Here is Lathom House, the former seat of the Stanleys and the Wilbrahams. It is known for the defence made by Charlotte, countess of Derby, against the parliamentarians in 1644. The present house dates from the 18th century. With Burscough, Lathom forms an urban district. There are two stations on the L.M.S. Rly. at Burscough Pop., urban district, 7,633.

The title of earl of Lathom has been borne since 1880 by the family of Bootle-Wilbraham. The third earl, Edward William (b. 1895), has written, under the name of Edward Wilbraham, several plays produced in London.

LATIMER, HUGH (c. 1485-1555). English bishop and martyr. Born at Thuraston, near Leicester, the son of a yeoman, he embraced Lutheranism, and became one of the most popular preachers of the Reformation period. He was appointed rector of West Kingston, Wilts, in 1531, and was elevated in 1535 to the see of Worcester, having won favour at court by supporting the dissolution of Henry VIII's marriage with Catharine of Aragon. He resigned his bishopric in 1539 and was imprisoned for non-compliance with the Six Articles. After the accession of Mary he was found guilty of heresy and burned with Ridley at Oxford, Oct. 16, 1555. His sermons, simple, forcible, and colloquial, were edited by the Rev. G. E. Corrie, 1844-45.

LATIN. One of the dialects belonging to the Indo-European group of languages originally spoken by the Latin inhabitants of the plain of Latium in central Italy. As the Romans gradually made themselves masters of the peninsula this dialect established itself as the predominant literary and spoken language throughout Italy.

LATIN LITERATURE. Regarded as separate from the copious Latin writings of the Middle Ages and the Renaissance, this extended over seven centuries from 240 B.C. It may be considered in three divisions.

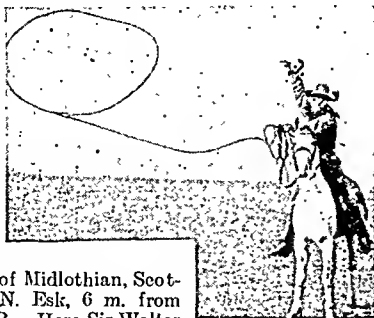
I. In poetry the pioneers were Andronicus, Naevius, and Ennius. Andronicus inaugurated a style of play after the Menandrian Greek comedy of manners. Naevius began the play drawn from Roman history. Ennius, by importing the hexameter for his *Annales* on the growth of Rome, made a momentous contribution. His style in epic and drama profoundly influenced Virgil. The only two comic authors from whom plays have descended are Plautus and Terence. Satire received its true Roman colour from Lucilius. Prose developed slowly to meet the needs of law, oratory, and history. The first outstanding figure was Porcius Cato, the Censor.

II. The next epoch saw the loftiest achievements of Roman genius. Its first generation had two great poets, Lucretius and Catullus. At the same time Latin prose was used with absolute mastery by M. Tullius Cicero in the speeches which proved him one of the

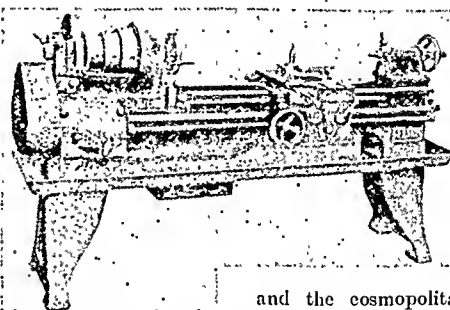
greatest orators of antiquity. Through his philosophical treatises Cicero bequeathed an heirloom in vocabulary for Christian Fathers and the medieval schoolmen. M. Terentius Varro wrote on history, antiquities, agriculture, and language. The chief historians of the day were C. Julius Caesar, Sallust, Nepos. Virgil drew from Greek and Roman predecessors for his pastoral Eclogues, his Georgics on rural work, and his great epic, the Aeneid. The Odes of Horace had in part an imperial ring, but were often occasional verses of fancy and moralising, love, and wine. The elegiac poets of the time were Tibullus, Propertius, and Ovid. The star of Augustan prose was Livy, with his history.

III. The key to the "Silver Age," heralding the Decline, lies in the rhetorical education, whose exercises fostered ingenious argument, epigrammatic point, and far-fetched conceits. Such artifices, added to Virgilian influence, go far to account for the style of the epics of the first century, Lucan's *Pharsalia*, Valerius Flaccus's *Argonautica*, Silius Italicus's *Punica*, and Statius's *Thebaid* and unfinished *Achilleid*. Satire was continued in Menippean form by the Satyricon of Petronius, and in hexameters by Persius and by Juvenal. Phaedrus, a freedman, had under Tiberius struck a new satiric vein in Fables, and Martial before A.D. 100 gave the epigram its distinctive sting. The younger Seneca introduced in his philosophical treatises and epistles a glittering type of short pointed sentence, eminently quotable. Against this Senecan prose Quintilian protested by precept and example in an educational masterpiece, *The Institutes of Oratory*. Pliny the Younger wrote *Letters*.

Tacitus was the greatest prose writer of his era; he developed a unique prose, condensed, epigrammatic, and caustic. Later, Suetonius handled learning and history on biographic lines; Florus epitomised history; and Aulus Gellius wrote his literary miscellany, *Noctes*



Lasso. It is first whirled above the head and then cast

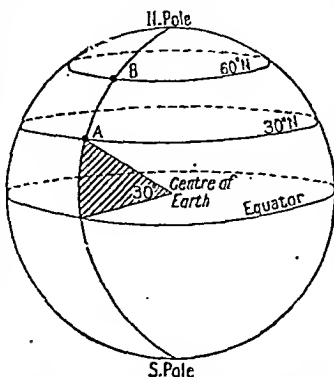


Lathe. Gap lathe, which is used for turning metal
Courtesy of the Sison Engineering Co., Coventry

Attieac In the second century some of the most vital writing came to be that of Christian apologists like Tertullian, Minucius Felix, Cyprian, Arnobius, Lactantius. The Vulgate or Bible translation by Jerome indelibly affected medieval Latin. The best known work of the rhetorician Apuleius is his tale of adventure entitled *Metamorphoses*, or *Golden Ass*.

LATITUDE AND LONGITUDE. Latitude is the angular distance of a point on the earth's surface N. or S. of the equator. All places with the same angular distance lie on the same parallel of latitude, a small circle on the earth's surface parallel to the equator. A difference in lat. of 1° equals, on the average, 69½ m.

Longitude is the number of degrees from the zero or prime meridian, measured E. or W. along any parallel of latitude. The prime meridian is usually taken as passing through Greenwich. E. and W. longitudes meet at the meridian 180°. The rotation of the earth from W. to E. gives to places which are E. of Greenwich an earlier noon than to places W.



Latitude. Diagram showing how the lat. of A, 30° N., is the angular distance, measured at the earth's centre, N. of the equator. B is lat. 60° N., 30° farther N. than A.

LATITUDINARIANS (Lat. *latus*, broad). Name sometimes applied to the more extreme members of the Broad school of thought in the Church of England; and especially to certain prominent liberal theologians in the 17th and 18th centuries.

LATIUM ("flat" land). Central district of ancient Italy. Before the growth of the power of Rome, its boundaries were N. the Tiber, S. the river Numicus, W. the Tyrrhenian Sea, and E. the Alban Mts. By the time of Augustus the district included the country from the Tiber to the Liris (Garigliano). Rome was within the territory of Latium. Alba Longa was the chief city. See Alba Longa; Campagna; Rome.

LA TRAPPE. Monastery of France. It lies in hilly country in the dept. of Orne, 26 m. N.E. of Alençon. The house was founded as a Cistercian monastery in 1140, and under the abbacy of Armand de Rancé (1626-1700) gave its name to the Trappist order.

LATTEN. Mixture of copper and zinc, closely resembling brass, and rolled into thin sheets. It was used from the 13th century onwards for monumental brasses, church vessels, and domestic utensils. It was also cast into effigies, gates, and tomb-screens, as in Henry VII's chapel at Westminster. The word now denotes normal brass mixtures for church purposes.

LATTER DAY SAINTS. Abbreviated form of The Church of Jesus Christ of Latter Day Saints, the title which was officially adopted in 1834 by the sect commonly called Mormons (q.v.).

LATTICE LEAF (*Aponogeton fenestralis*). Perennial aquatic herb of the order Naiadaceae, a native of Madagascar. It grows in fresh-water rivers, and has a tuberous root filled with farinaceous matter, used for food. Except at the early stage of development, the leaves, 1 ft. to 1½ ft. long, consist of a mere network of vessels enclosed in a thin layer of cellular tissue, with innumerable open circular and oblong spaces. The long flower-stem forks, near its extremity, into two branches which support the numerous small greenish-white flowers.

LATVIA. Republic of N Europe, formerly part of the Russian Empire. The land of the Letts is bounded N by Estonia, W. by the Gulf of Riga and the Baltic, S. by Lithuania, and E. by Russia. It comprises the districts of Vidzeme (Livonia), Kurzeme (Courland), Zemgale, and Latgale. The country is mainly flat and low-lying, with many forests. The chief of the numerous rivers is the Dvina (Daugava). The summers are hot and short, the winters long and cold. The area is about 25,000 sq m and the population nearly 2,000,000.

The main occupation is agriculture. Dairy farming is important. The exports include timber, flax, and butter. The country is well served with rlys. radiating from Riga. The capital and chief port is Riga, other important towns including Libau (Liepāja), Dvinsk (Daugavpils), Mitau (Jelgava), Rossitten (Rezēkne), and Windau (Ventspils).

In the early days of the Russian Revolution, 1917, Livonia was split into N. Livonia, inhabited by Estonians, and S. Livonia, inhabited by Letts. Later N. Livonia became part of the new state of Estonia, and S. Livonia part of the new state of Latvia, or Lettland, which also comprised Courland and Latgale. In 1917 a demand had been expressed for the formation of a united autonomous Latvia, and on Nov. 18, 1918, Latvia was proclaimed a republic. It was admitted to the League of Nations in 1921.

In 1922 a constitution came into existence. Under it the country is governed by a president and a parliament of 100 members, who are elected by all adults for three years, on the principle of proportional representation. The parliament chooses the president, who serves for three years, and the council of ministers is responsible to it. At the election of 1925 the social democrats proved the strongest party. In 1927 Gustav Zemgals was elected president. The state has a small army and a few ships for coast defence. The national debt is about £3,300,000. The chief exports are timber and flax. The unit of currency is the lat, equal to the franc. See Libau; Riga.

LAUD, WILLIAM (1573-1645). English prelate. Born at Reading, Oct. 7, 1573, he was educated at Oxford and became a fellow of S. John's College in 1593. He was ordained in 1600, and in 1611 was chosen president of S. John's. He was archdeacon of Huntingdon, 1615; dean of Gloucester, 1616; bishop of St. Davids, 1621-26; dean of the chapel royal, 1626; bishop of Bath



William Laud, English prelate After Van Dyck

and Wells, 1626-28; and bishop of London, 1628-33. He was responsible for the Declaration prefixed in 1628 to the Thirty-Nine Articles, and stood out generally for strict clerical discipline. Appointed archbishop of Canterbury in 1633, he was a member of the courts of Star Chamber and of High Commission. In Scotland Laud supported the restored episcopacy, and endeavoured, with disastrous results, to introduce a new prayer book containing the Scottish Communion Office. Laud was impeached of high treason and sent to the Tower, March 1, 1641. On Jan. 10, 1645, he was executed on Tower Hill, London.

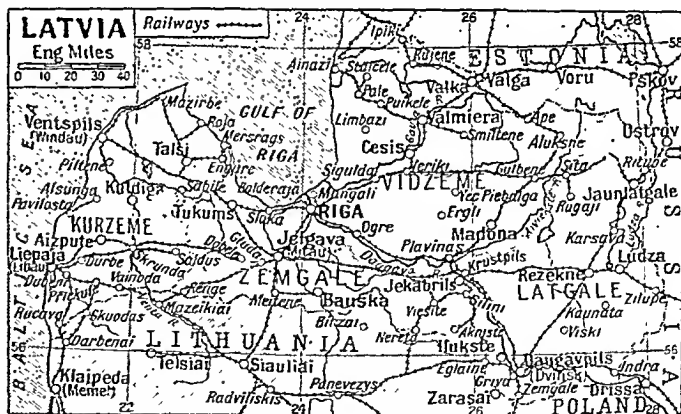
LAUDANUM OR **TINCTURE OF OPIUM.** Fluid extract of opium containing 1 p.e. of anhydrous morphine. Laudanum is made by macerating the powdered drug in alcohol and filtering. It is used for the relief of pain, but should be given with caution. See Morphine.

LAUDER. Burgh of Berwickshire. It is on the Lauder, 33 m. from Edinburgh, on the L.N.E. Rly. Here, in 1482, Archibald Douglas, earl of Angus, seized the earl of Mar and other favourites of James III and hanged them on the bridge. For this deed he won his nickname of Bell-the-Cat. Pop. 759.

LAUDER, SIR HARRY MACLENNAN (b. 1870). Scottish comedian. Born at Portobello, Aug. 4, 1870, he made his London debut at Gatti's in 1900, and a series of engagements at the leading London music halls, where he sang Scottish songs written and composed by himself, placed him at the forefront of his profession. He was knighted in 1920. He published *A Minstrel in France*, 1918; and *Roamin' in the Gloamin'*, 1928.



Sir Harry Lauder, Scottish comedian



Latvia. Map of the republic formed in 1918 from portions of the Russian empire

LAUDERDALE, EARL OF. Scottish title borne since 1624 by the family of Maitland. James (d. 1839), the 8th earl, was a prominent politician for about fifty years. In 1924 Frederick Colin (b. 1868) became the 14th earl. The earl is hereditary royal standard-bearer for Scotland. His eldest son is known as Viscount Maitland, and the family seat is Thirlstant Castle, Berwickshire.

John Maitland, duke of Lauderdale (1616-82), was a son of the 1st earl of Lauderdale. He accompanied Charles II to Scotland in 1650, and into England, where the duke was taken prisoner at Worcester. After the restoration he was made secretary of state for Scotland. Created duke of Lauderdale in 1672, he died in Aug., 1682, when his dukedom became extinct.

LAUGHING GAS OR **NITROUS OXIDE.** Compound used in medicine to produce anaesthesia for short operations, e.g. tooth

extraction. The gas at first produces a stage of excitement, the condition sometimes being manifested by uncontrollable laughter. Unconsciousness supervenes in about 30 seconds and lasts for from 30 to 50 seconds, the patient feeling quite normal two or three minutes later.

LAUGHING JACKASS OR **SETTLER'S CROCK** (Dacelo). Popular name for a group of large kingfishers found in Australasia and New Guinea. They are so called from their curious gurgling cry, uttered at regular times about dusk and dawn. They are usually brown, black, and white in colour with sometimes a tinge of bluish green.



Laughing jackass, an Australian kingfisher

LAUNCESTON.

Borough and market town of Cornwall. It stands on the Kensey, near its junction with the Tamar, 48 m. from Exeter and 213 from London, on the G.W. and Southern Rlys. The 16th century church of S. Mary Magdalene has some fine carving. At the entrance to a hotel is a

Norman gateway preserved from an Augustinian priory. The keep of the castle remains. Launceston was one of the two county towns until 1837. Across the Kensey is the hamlet of Newport, which is within the borough. Market day Sat. Pop. 3,975

LAUNCESTON. City in Tasmania. It stands on the Tamar, 40 miles from Port Dalrymple. The capital of the N. part of the state, it has an active seaborne trade with the chief Australian ports, and by rail with Hobart. It has smelting works in connexion with the Mount Bischoff tin mines. Pop. 28,400

LAUNDRY (old Fr. *lavanderie*, Lat. *lavandus*, to be washed). Term for a place where washing or laundering clothes is carried on; also, the articles sent there to be laundered.

Laundries in Great Britain come under the various Public Health Acts in respect of clothing, bed-linen, etc., used by persons suffering from infectious diseases. A customer who sends infected linen to a laundry without taking proper precautions is liable to a fine. The sanitary conditions and the regulation of employment of labour are defined by the Factory and Workshop Act, 1907. Among other provisions it is laid down that if mechanical power is used, a fan or other efficient means for regulating the temperature of ironing rooms and carrying away the steam of wash-houses must be employed.

LAUREL (Lat. *laurus*, bay-tree). Loosely applied popular name for many unrelated evergreen shrubs and trees. The garden laurel is more correctly known as cherry laurel (*Prunus laurocerasus*). The true laurel of the ancients is the bay tree (q.v.) (*Laurus nobilis*). *Prunus lusitana* is distinguished as Portugal laurel. Other laurels are Alexandrian laurel (*Danao raemosa*) and spurge laurel (*Daphne laureola*). American laurels are the several species of *Kalmia*. Japan laurel is *Aucuba japonica*; and *Rhododendron maximum* is known in the United States as the great laurel. The sweet bay or beaver tree (q.v.) of N. America is known also as the laurel magnolia.

LAURENTIAN ROCKS. Name given to highly metamorphosed rocks found in the Laurentian Mountains, Canada. A sub-division of the Archaean system, they consist of an immense series of crystalline rocks, gneiss, quartzite, limestone, etc., more than 30,000 ft. in thickness. See Geology.

Laurie, Annie (1682-1764). Heroine of the famous Scottish song of this name. Daughter of Sir Robert Laurie, of Maxwellton House, Dumfriesshire, she married in 1717 Alexander Ferguson of Craigdarroch. The song was written by her rejected suitor, William Douglas. The words were first printed in 1824, they were remodelled in 1835 by Lady John Scott (1810-1900), who added the third verse and also composed the music.

Laurier, Sir Wilfrid (1841-1919). Canadian statesman. Born at St. Lin, Quebec, Nov. 20, 1841, he was called to the bar in 1864. His political career began in 1871, when he was sent by his native district to the Quebec legislature. He sat there for three years, and in 1874 was returned to the Parliament at Ottawa. From 1878 until his death he represented Quebec East. He was soon the recognized leader of the Quebec Liberals, and when Edward Blake left the country Laurier was chosen chief of the whole party.



Sir Wilfrid Laurier, Canadian statesman

In 1896 the Liberals gained a majority at the general election, and Laurier became premier. In that capacity he revised the tariff giving preference to Great Britain; inaugurated the plan for a national trans-continental railway; and was responsible for measures designed to benefit the working classes. He remained in power until 1911, when the Conservatives secured a large majority. Laurier went into opposition, and remained the leader of his party until his death, Feb. 17, 1919.

LAUSANNE. City of Switzerland. Near the N. shore of the Lago di Genova, 38 m. by rly. N.E. of Geneva, it is divided into two parts by the Flon Valley, spanned by a fine bridge.



Lausanne. Gothic Cathedral of Notre Dame, restored 1873-1906

The fine Gothic cathedral of Notre Dame was founded in the 10th century, rebuilt in the 13th, sacked in 1536, and restored 1873-1906. The 15th century castle of the bishops and later of the Bernese bailiffs is occupied by cantonal offices. Lausanne is a great educational centre, and is the residence of numerous foreigners. The university was founded as an academy in 1537. At Lausanne Gibbon lived and wrote much of the *Decline and Fall*, and J. P. Kemble was buried here. The treaty which settled the status of Turkey was signed here, July 24, 1923. Pop. 77,000. See Turkey.

LAVA. Molten rock discharged or poured out from volcanoes, fissures, etc. Its composition varies considerably. Lavas are divided into two main classes, acid and basic, according to the proportion of silica. The latter are more fluid than the former and spread out farther from the source of origin. See Volcano.

LAVALLIÈRE, LOUISE FRANÇOISE, DUCHESSE DE (1644-1710). Mistress of Louis XIV.

Born of good family at Tours, Aug. 6, 1644, she came to court with her mother and sisters in 1661, and soon attracted the attention of Louis, having great mental gifts as well as beauty. Their intimacy developed into a liaison which lasted for some six years, during which she bore four children to the king; she was created duchess in 1667. In June, 1674, she joined the Carmelites, and died a member of that order, June 6, 1710.

LAVAL - MONTMORENCY, FRANÇOIS XAVIER DE (1623-1708). French prelate. Born at Laval, April 30, 1623, he entered the church, and in 1653 was made archdeacon of Evreux. In 1659 the pope sent him to Canada with the rank of bishop, and in 1674, after a period in France, he returned as bishop of Quebec. His position there was one of great influence. In 1683 he resigned his bishopric to give his entire time to educational work there. He died May 6, 1708.

Today the name Laval University is given to two educational establishments in Canada, one at Quebec and the other at Montreal. The one at Quebec was established in 1852, being an outcome of the seminary founded there by Laval-Montmorency. It is modelled on the lines of the university of Paris. Laval University at Montreal originated as a branch of the one at Quebec in 1878. In 1919 it became independent.

LAVATER, JOHANN KASPAR (1741-1801). Swiss physiognomist. Born at Zürich, Nov. 15, 1741, his claim to fame rests on his *Physiognomische Fragmente*, 1775-78, a treatise on physiognomy which was translated into English. Lavater was also a poet and wrote on mysticism. He died Jan. 2, 1801.

LAVENDER (*Lavandula vera*). Shrub of the order Labiales, a native of S. Europe. It has a thick, ragged-barked stem, 2 ft. high, branching above into a broad bushy head. Its downy, grey-green slender leaves have their edges rolled under. The mauve flowers are produced in long, erect spikes, which are gathered as soon as the flowers are fully expanded, when they retain their pleasant fragrance after drying. These yield by distillation about one p.c. of the essential oil which is the basis of lavender water. Oil of spike is another product, used by artists and in varnish making.



Lavender. Leaves and flower spikes of the fragrant shrub

LAVENDER COTTON (*Santolina chamaecyparissus*). Shrub of the natural order Compositae. A native of the Mediterranean region, its small, narrow, alternate leaves, with rows of short, blunt teeth, give off an agreeable odour. Its yellow flower-heads are solitary, and the whole plant is clothed with cottony down.

LAVENHAM. Town of Suffolk. It is 10 m. from Bury St. Edmunds, on the L.N.E. Rly. The church of SS. Peter and Paul is one of the largest and finest in the county. There is also a guildhall of the 16th century and some Tudor houses. Pop. 1,620.

LAVER (*Porphyra laciniata*). Seaweed of the order Porphyraceae. Common on rocks at half-tide mark, it has very thin, broad fronds of tints varying from rose to purple. It is eaten with oil and lemon-juice after careful stewing, but the taste for it has to be acquired, and the repugnance to its appearance when cooked overcome. Green laver is the product of *Ulva latissima*, which is a similar plant but of bright green colour.

Laver. Fronds of the edible seaweed

LAVERSTOKE. Village of Hampshire. It stands on the Test, 2 m. from Whitehureh. Here are the paper mills owned by the Portals at which the paper for Bank of England notes has been made for over 200 years. Pop. 600.

LAVERY, SIR JOHN (h. 1856). British painter. Born in Belfast, he studied at the Glasgow art school and in Paris. Largely influenced by Whistler and Velasquez, he painted classical subject pictures in a style of his own, a few landscapes, and many women's portraits. In 1888 he was commissioned to execute the official picture of The Queen's Visit to the Glasgow exhibition. He was elected A.R.A. in 1912, and R.A. in 1921. He was knighted in 1918.

Examples of his work are in the National Portrait Gallery, London, in the Corporation galleries at Glasgow, and Liverpool, and in foreign galleries.

LAVOISIER, ANTOINE LAURENT (1743-94) French chemist. Born in Paris, Aug. 26, 1743, he won a prize for the best method of lighting Paris. He was made a member of the Academy of Sciences, 1768, and in 1776 director of powder works. In 1794, owing to his position as fermier-général, he perished by the guillotine, May 8, 1794.

Lavoisier laid the very foundations of modern chemistry by his recognition, and experiments to prove, that matter is indestructible. His researches and methods gave an immense impetus to quantitative methods in chemistry, and the system of nomenclature which he proposed is still in use.

LA VOISIN or **MONVOISIN, CATHERINE** (d. 1680). French adventuress. The wife of a bankrupt tradesman, she took up palmistry and witchcraft, acquiring a reputation among the court ladies for her love potions and other less harmless drugs. When the wholesale poison plots of 1679-81 came to light in Paris, implicating many of the ladies of the land, it was found that La Voisin had supplied the potions, and she was executed on Feb. 20, 1680.

LAW. The sum of the rules by which the actions of men living in society are governed. Or it may be defined as a body of rules set by one or more persons, who have power to impose them, to another person or persons whose duty it is to obey. From this conception must be distinguished a figurative and non-juristie use of the term arising out of the world of physical phenomena. We find the word law employed to express the idea of order, or cause and effect, or the apparently immutable sequence of events in nature.

The historical method of inquiry into the evolution of positive law is the only one which can lead to satisfactory results. Among primitive and semi-cultured peoples almost all law is based on custom. It is patriarchal, tribal, and sacerdotal. All studies in comparative law tend to prove this. The hereditary traditions from common ancestors and the tribal habits of life are persistently followed by the members of the community, while the terror of the gods acting on naturally superstitious minds forms a powerful sanction and secures their permanence.

Another feature of early customary law is its formalism. The customs are by no means loose and ill-defined. One might expect, perhaps, the opposite, but strict observance of the recognized forms was insisted on; they

had the sanction of superstitious reverence. Formal words and gestures were of the essence of most transactions.

But in a progressive community settled customs do not long suffice for the wants of the people, and the next step seems to have been everywhere resort to legislation, i.e. the making of direct ordinances or decrees by the ruler or, later, by the people themselves, which are put in writing and become obligatory on the whole community. Such legislation, however, is at first small in bulk. The enactments are brief and in imperative words, mostly of a penal character. See Jurisprudence.

LAW, ANDREW BONAR (1858-1923). British politician. Born in New Brunswick, Sept. 16, 1858, he started in business in Glasgow. Having acquired a competency, he turned his attention to politics, and in 1900 entered the House of Commons as Unionist M.P. for the Blackfriars Division of Glasgow. He soon made a reputation as a speaker, and in 1902 was appointed parliamentary secretary to the board of trade. He left office with his party in 1905, and in 1906 lost his seat at Glasgow. He sat in turn for Dulwich, Bootle, and a Glasgow division.

In 1911 he succeeded A. J. Balfour as leader of the Unionist party. When a coalition ministry became essential in May, 1915, he took the post of colonial secretary, which he held until Dec., 1916, when he threw in his lot with Lloyd George, becoming leader of the House and chancellor of the exchequer. He was also a member of the war cabinet. At the election of 1918, Law and George appeared as the leaders of the coalition, which was returned to power. Law was one of the British representatives at the peace conference in Paris, in 1919. In March, 1921, his resignation was suddenly announced, due to a complete breakdown in health. Having recovered, he succeeded Lloyd George as prime minister, Oct. 23, 1922, but, owing to ill-health, resigned on May 19, 1923. He died Oct. 30, 1923.

In 1928 Ashridge Park (q.v.) was presented to the party as a memorial to Bonar Law.

LAW, JOHN (1671-1729). Scottish financier. Born April 21, 1671, in Edinburgh, he went to London in 1688, and then to France. He found a friend in the duke of Orleans, who when regent allowed Law and his brother William (1675-1752) to start a bank, known at first as the Banque Générale and then as the Banque Royale. In 1717 Law established a company with the privilege of exclusive trade with the Mississippi; in 1720 he adopted Roman Catholicism and was made controller-general of French finances. But in that year the combined bank and company failed owing to paper issues far beyond the necessary security. Law was driven from France and his estates were confiscated. He died in Venice, March 21, 1729.

LAW, WILLIAM (1686-1761). English non-juring divine and mystic. Born at King's Cliffe, Northamptonshire, he was ordained in 1711, and refusing to take the oath of allegiance to the house of Hanover, remained a non-juror (q.v.) until his death. He was attached, 1727-39, to the household of Mr. Gibbon, father of the historian, and retired in 1740 to King's Cliffe, where he died, April 9, 1761. Law's most celebrated work is A Serious Call to a Devout and Holy Life, 1728, often reprinted.

LAW AGENT. Scottish term for a person who has the right to transact legal business for others, i.e. a solicitor. They are defined under the Law Agents (Scotland) Act, 1863. See Solicitor.

LAW COURTS. English name for the central courts of justice which form a feature of all great cities. Examples are the Royal Courts of Justice in London, the Palais de Justice in Paris, and the Palais de Justice in Brussels. The London building is the headquarters of the administration of justice in England. On the N. side of the Strand, the site covers about 5½ acres. The architecture is composite, Gothic predominating. The main building was opened by Queen Victoria, Dec. 4, 1882, and the business of the supreme court was transferred here Jan. 12, 1883. The main entrance is in the Strand. See illus. below.

LAWES, SIR JOHN BENNET (1814-1900). British agriculturist. Born at Rothamsted, Dec. 28, 1814, he began, on the estate which he inherited in 1822, the experiments which, with Sir J. H. Gilbert, he carried on, with great advantage to agriculture generally, for over 50 years. In 1899 he completed his work by founding the Lawes Agricultural Trust to manage the experimental station at Rothamsted. In 1882 he was created a baronet. He died Aug. 31, 1900.

LAW LORD. Name given in the United Kingdom to those members of the House of Lords who act as lords of appeal. The ordinary lords are six in number, and are lawyers who



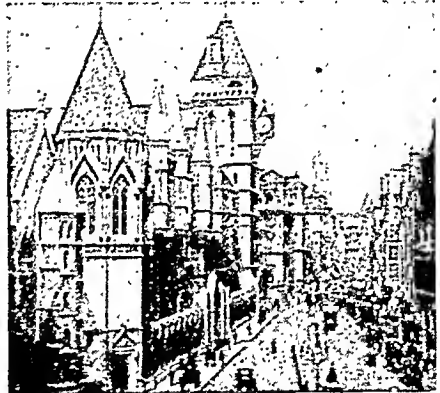
Sir John Lavery, British painter Hoppe



A. L. Lavoisier, French chemist After David



A. Bonar Law, British politician Elliott & Fry



Law Courts, London, looking east towards Temple Bar Memorial and Fleet Street. See above



John Law, Scottish financier

have held some high legal office, either as judge or law officer of the crown. Each is made a life peer on his appointment. See Appeal, Court of.

LAWN TENNIS. Game played with a ball and rackets by two or four persons on a lawn or other smooth surface.

The first championship was played at Wimbledon in 1877, and in 1888 a Lawn Tennis Association was formed, representative of the leading clubs in the United Kingdom. The success of the championship at Wimbledon led to the institution of numerous competitions throughout the country, and in 1900 came the foundation of the international competition popularly known as the Davis Cup.

Where, and when, grass is either unprocureable or unsuitable, various substitutes, such as sand, gravel, cement, and asphalt, have been used. A very successful surface has been furnished comparatively recently by a red composition, which is now in extensive use.

There is no legal restriction on the weight or size of the rackets; for a man the ordinary weight is 14 oz., length about 27 inches. The balls—hollow india-rubber covered with white flannel—must be between 2½ and 2¾ in. in diameter, and between 2 and 2½ oz. in weight. The court is 78 ft. long, divided in the middle by the net, 3 ft. high at the centre and 3 ft. 6 in.

at the post. The width of the court is 27 ft. for the single game; 21 ft. from the net on each side are the service lines, which are out into two by the half-court lines. For the double game the court is 36 ft. wide, and service side lines, 4 ft. 6 in. from the side lines, run from the net to the service lines. The server serves from the right and left courts alternately into the diagonally opposite half of the opposite service court. A service which touches the net is called a let.

Any breach of the service law is a fault, and two faults lose the server the point. The player receiving the service may not volley it, but has the whole of the opposite court into which he may return it. The ball is then in play, and any player hitting it into the net or out of court loses the stroke. On the line counts in, for either service or return. The game is called by strokes, love, fifteen, thirty, and forty. Forty all is called deuce, and the next stroke vantage; if the vantage player wins the next stroke, he wins the game; if not, the score goes back to deuce again. At the end of the game the service passes to the opponent. The first to reach six games wins the set, unless the score is five games all, when vantage games are played.

In 1920, 1921, and 1930 W. T. Tilden (U.S.A.) was champion at Wimbledon, while he held the American title from 1920 to 1925. In 1919 Mlle. Suzanne Lenglen (q.v.) won the women's championship from Mrs. Lambert Chambers and kept it until 1924, when it passed to Miss McKane. After a triumphant return in 1925, Mlle. Lenglen turned professional in 1926, in which year the title was again won by Miss McKane (later Mrs. Godfree), the runner-up being Señorita de Alvarez. Other French players of distinction have been Mlle. Vlasto, Jean Borotra (Wimbledon champion 1924 and 1926), René Lacoste (Wimbledon 1925 and 1928, France and America 1927) and Henri Cochet (France 1926, Wimbledon 1927 and 1929). In 1927, 1928, 1929, and 1930 the women's championship at Wimbledon was won by Helen Wills (Mrs. Wills-Moody), the U.S.A. champion.

The Wightman Cup, for which women's teams compete, was, in 1929, been won four times by the United States and three times by Great Britain. See Davis Cup; consult also On and Off the Court, by A. F. Wilding, 1914; Lawn Tennis, W. T. Tilden, 1920.

LAWRENCE, SAINT AND MARTYR. Probably born in Spain, he was educated in Rome. Ordained deacon about 257, he was put to death probably in 258. The story is that, as treasurer of the church in Rome, he was ordered to produce the valuables in his charge, whereupon he showed the official a number of beggars, and for this was roasted on a gridiron. His day is Aug. 10.

LAWRENCE, JOHN LAIRD MAIR LAWRENCE, 1st Baron (1811-79). British administrator. Born at Richmond, Yorks, March 4, 1811, and educated at Foyle College, Londonderry, and Haileybury, he entered the Indian civil service in 1829 and won a high reputation in Delhi. During the Mutiny, as lieutenant-governor of the Punjab, he raised an army of 50,000 Sikhs, and was instrumental in capturing Delhi. For his services he was made a baronet in 1858 and pensioned. In 1864 he returned to

India as governor-general, a post he retained for five years, being made a peer on his retirement. He died June 27, 1879, and was buried in Westminster Abbey.

LAWRENCE, DAVID HERBERT (1885-1930). British novelist and poet. Born at Eastwood, Notts, Sept. 11, 1885, he made a success with a realistic novel, *Sons and Lovers*, and followed it with *The Trespasser*, *The Prussian Officer*, *The Rainbow* (which was suppressed), and *Lady Chatterley's Lover* (privately printed abroad). He wrote three dramas, *Widowing of Mrs. Holroyd*, *Touch and Go*, and *David*; several volumes of verse; and a number of essays, including *Mornings in Mexico*. He died March 3, 1930.

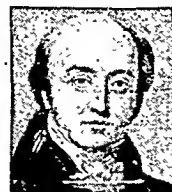


D. H. Lawrence, British writer

LAWRENCE, SIR HENRY MONTGOMERY (1806-1857). British soldier and administrator. Born in Ceylon, June 28, 1806, the brother of Lord Lawrence, he joined the Bengal artillery in 1823. He saw service in the Burmese War, 1824-26, the Afghan War, 1838, and the first, 1845, and second, 1848-49, Sikh Wars. After defeating Lucknow with 1,000 Europeans and 800 natives for four months against 7,000 rebels, he was struck by a shell on July 2, 1857, and died within two days. He ranks as one of the noblest characters in Anglo-Indian history.

LAWRENCE, SIR HERBERT ALEXANDER (b. 1861). British soldier. Born Aug. 8, 1861, a younger son of the 1st Lord Lawrence, he was gazetted to the 17th Lancers. After serving in the S. African War, he left the service for a business career, but on the outbreak of the Great War rejoined. He went to Egypt and Gallipoli, and later served on the West front, becoming in Jan., 1918, chief of the staff to Sir Douglas Haig, a post he retained until the end of the war. Knighted in 1917, Sir Herbert in 1919 left the army again. He then became a partner in a banking firm.

LAWRENCE, SUSAN (h. 1871). British politician. She was educated at Newnham College, Cambridge, and then took up social work in London. She became a member of the London school board and of the borough council of Poplar, which she represented on the London County Council, 1912-28; she was deputy chairman in 1926. In 1923 she was elected as Labour M.P. for East Ham North, and she was again returned in 1924 and 1929. In 1929 Miss Lawrence was made parliamentary secretary to the ministry of health. From 1912-21 she was organizer of the national federation of women workers, and in 1928 was chosen deputy chairman of the labour party.



Sir T. Lawrence, British painter After G. Landseer

LAWRENCE, SIR THOMAS (1769-1830). He was born May 4, 1769; children of the landlord of the White Lion, at Bristol. At 12 he had a studio at Bath; at 18 he entered the R.A.

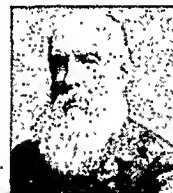
schools, being elected R.A. in 1794 and P.R.A. in 1820. He died in London, Jan. 7, 1830, and was buried in S. Paul's. Lawrence's portraits of children have a place of their own in British art, and his fashionable women are always splendidly vivacious. A great array of his portraits of kings, queens, and statesmen is to be seen at Windsor Castle, in the National Gallery, the National Portrait Gallery, and other collections. See illus. pp. 347, 352, 353, 364, 429, 490, 535, 551, 590, 647, etc.

LAWRENCE, THOMAS EDWARD (b. 1888). British soldier and administrator. He was born in Carnarvonshire, and educated at Jesus College, Oxford, where he specialised in Oriental languages. He spent some years in Arabia, Syria, and Mesopotamia, mastering the Arab dialects and studying ancient monuments. He organized the Arab revolt against the Turks in 1916-18 and was later adviser on Arab affairs to the Colonial Office. Of his *The Seven Pillars of Wisdom* an abridged edition was published in 1927 as *Revolt in the Desert*.



T. E. Lawrence, British soldier

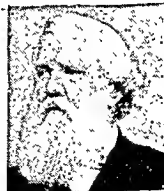
LAWSON, SIR WILFRID (1829-1906). British politician. The son of a baronet, Sir Wilfrid Lawson of Brayton Hall, Carlisle, he was born there Sept. 4, 1829. Privately educated, he entered Parliament in 1859 as M.P. for Carlisle (which he represented till 1865, and in 1868-85), and in 1867 succeeded to his father's title and estates. From 1886-1900 he was M.P. for Cockermonth, in 1903 for Camborne, and in 1906 for Cockermonth again. He died July 1, 1906. Despite his advanced radicalism his genial humour made him a general favourite.



Sir Wilfrid Lawson, British politician

LAYAMON (c. A.D. 1200). English poet. A priest of Arelcy in Worcestershire, he was author of *Brut*. This, the first English poem after the Norman Conquest, makes Brut or Brutus, grandson of Aeneas the Trojan, the progenitor of the British race, and traces the history of Britain down to the 7th century.

LAYARD, SIR AUSTEN HENRY (1817-94). British diplomatist and Assyriologist. Born in Paris, Mar. 5, 1817, he studied law in London, 1833. Many of the results of his exploration of Nimrud and Kuyunjik (described in his *Nineveh and Its Remains*, 1848-49) and Babylon (described in his *Nineveh and Babylon*, 1853) are in the British Museum. He was minister at Madrid, 1869; and ambassador to Constantinople, 1877. Retiring in 1880, he died in London, July 5, 1894.



Sir A. H. Layard, British Assyriologist

LAYERING. Method of increasing stocks of plants, shrubs, and trees. The process is usually carried out when the subject is in full vigour. It consists of making an acute angular cut with a knife across a knot or joint in a prostrate branch. The semi-severed branch is then forced down at right angles into soil suitable for its culture, mixed with silver sand, and kept in position by a hairpin-shaped peg. The returning sap, unable to return to its roots, forms fresh roots, which are thrown out into the soil, and thus a new plant is formed. This can be detached from the parent in about two months after the operation. See illus. p. 851.

LAY READER. In the Church of England, one who, holding a bishop's licence, assists in the work of a diocese. Lay readers include diocesan readers, parochial readers, and evangelists. The movement dates from 1866.

LAZARIST FATHERS OR **VINCENTIANS.** Congregation of the Priests of the Mission, a Roman Catholic order founded by S. Vincent de Paul. Its name is derived from the Collège de S. Lazare opened in Paris, 1632. The order is devoted to mission work and to education for the priesthood.

LAZARUS (Heb. Eleazar). Name of two characters in the N.T. The Lazarus of John 11 was a native of Bethany, a village 2 m. from Jerusalem, now called El Azariyeh, the place of Lazarus. He lived with his two sisters, Mary and Martha. Jesus, who was often a guest of the family, raised Lazarus from the dead. The other Lazarus is named in the parable of the callous rich man (Lat. Dives) and the beggar who lay at his gate full of sores (Luke 16, 19-31).

LAZULITE. Aluminium phosphate and iron and magnesium hydroxide. Called azurite or blue spar from its clear blue colour, it is similar to lapis lazuli (q.v.). It is found in Sweden, Switzerland, and Brazil.

Leaching. Variant name for the chemical and metallurgical process known also as lixiviation (q.v.).

LEACOCK, STEPHEN BUTLER (b. 1869). Canadian author and educationist. Born at Swanmoor, Hants, Dec. 30, 1869, he became head of the department of political economy at McGill University, Montreal. Author of biographies of notable Canadians, and several works on political economy, he won wide popularity as a writer of humorous short stories, including *Literary Lapses*, 1910; *Nonsense Novels*, 1911; *Sunshine Sketches of a Little Town*, 1912; *Behind the Beyond*, 1913; *Arcadian Adventures With the Idle Rich*, 1914; *Moonbeams from the Larger Lunacy*, 1915; *Winsome Winnie*, 1920; *Winnowed Wisdom*, 1926; *Short Circuits*, 1928.

LEAD. Important industrial metal, known and worked from very early times. Its chemical symbol is Pb (Lat. plumbum); atomic weight 207.2; atomic number 82; specific gravity 11.4; melting point 327° C. It is very soft, and can be scratched with the finger-nail; very malleable, tough and flexible, its tensile strength is the lowest of the common metals. Heated to redness in air it oxidises readily, forming litharge. At a bright red heat it boils and gives off fumes of oxide; at a still higher temperature it burns with a livid flame. Lead is the end product of the degradation of certain radioactive substances (e.g. uranium and thorium), and the forms of lead thus produced are isotopes of the common element, with different atomic weights.

Lead is found in the crust of the earth in various forms; rarely native in thin laminae or globules. Its chief source is the mineral galena (q.v.), its sulphide, widely distributed throughout the world. This ore normally carries about 86.5 p.c. of lead, generally with silver, antimony, arsenic, copper, and zinc, and often gold. In 1929 the world's output of lead was 1,931,796 tons. Of this total the U.S.A. contributed 602,233; Mexico 274,418; Australia 194,048 tons, and other countries the balance.

The most important compounds of lead are litharge (q.v.) and minium (q.v.). They are

used in glass manufacture, for pigments, glazing pottery, and for jointing purposes in engineering. The metal itself is manufactured in sheets, pipes, wire and shot, and enters into the composition of type metal, pewter, and Britannia.

LEAD POISONING. Chronic poisoning occurs among those who handle lead or its compounds or who are exposed to fumes from smelting, particularly plumbers, painters, type-setters, gas-fitters, glaziers, and potters.

When the condition arises in a workshop, it must be notified to the Home Office.

LEADENHALL MARKET. London's poultry market. It is on the S. side of Leadenhall Street. The estate was acquired by the city corporation in 1411, and the existing buildings were erected in 1881.

Leadenhall Street connects Cornhill with Aldgate, and was largely rebuilt in the 19th century. Here, among other notable buildings, are the magnificent premises of Lloyd's, opened in 1928, standing on the site of the old East India House.

LEADER, BENJAMIN WILLIAMS (1831-1923) British painter. Born at Worcester, March 12, 1831, he studied at the Worcester art school and the R.A. schools. He first exhibited at the R.A. in 1854, became A.R.A. in 1883, and R.A. in 1898. His landscapes have been freely engraved. Among them are *Tintern Abbey in Moonlight*, *The Weald of Surrey*, and *In the Evening It Shall Be Light*. He died Mar. 22, 1923.

LEADHILLS. Village of Lanarkshire, Scotland, 18 m. from Lanark, on a branch of the L.M.S. Ry. It is 1,300 ft. above sea level, and is noted for its lead mines. Allan Ramsay, the pastoral poet, was born here. Pop. 850.

LEAF. Thin green lateral expansion of the cellular tissue of the stems of plants, traversed by midrib and "veins," which are extensions of the fibro-vascular bundles. The middle layers of this tissue, mesophyll, have air spaces between the cells; the outer layers are more compact and form the epidermis, covered externally by a cuticle impervious to the passage of water. Both cuticle and epidermis are pierced by minute openings (stomata) to the air spaces, permitting transpiration and the admission of carbonic acid from the atmosphere. The leaf is the laboratory of the plant, the mineral salts and water absorbed by the roots being brought to it through the fibro-vascular bundles, and, with the carbon admitted by the stomata, assimilated by the green cells under the influence of sunlight. The plan of the leaf is to expose the maximum of cell-structure to air and light. The expanded portion of the leaf is the blade

or lamina; the stalk is the petiole, and near the attachment of the latter to the stem there are often a pair of blade-like expansions known as stipules.

LEAF INSECT (Phyllium). Popular name for a large family of orthopteran (straight-winged) insects. The body is large and flat, and the wing covers of the female are leaf-like in shape and colour. The legs are frequently so modified as to resemble small leaves, fragments of moss, or sticks.

LEAFIELD. Village near Oxford. A high-power wireless station was completed here in August, 1921, for long-distance communication with ships, and for broadcasting British official news messages.

LEAGUE (Gaulish leuga). Measure of length. By the Romans it was taken as the equivalent of 1,500 passus of 5 ft., or rather over 1½ English m. In Norman times its length was increased to about three modern English miles. As a nautical measure it is equivalent to the twentieth of a degree.

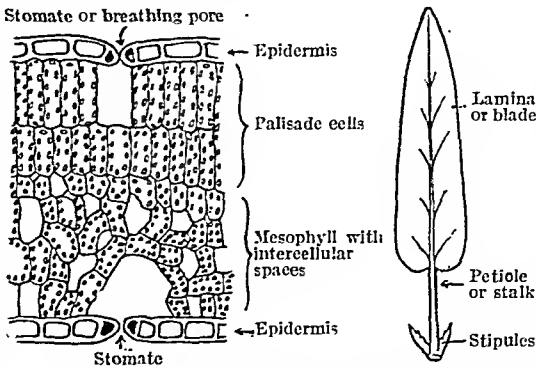
LEAGUE OF MERCY. Association founded in 1898 to assist the hospitals by collecting for King Edward's Hospital Fund.

King Edward instituted in 1899 the Order of Mercy as a reward for personal service on its behalf, or in the relief of suffering, poverty or distress. It carries no title or precedence.

LEAGUE OF NATIONS, THE. An international organization to promote co-operation and peace between nations. Inspired largely by President Woodrow Wilson, its constitution (the covenant), framed at the Peace Conference at Paris in 1919 was embodied in the treaty of Versailles, with which it came into force, Jan. 10, 1920, and in the later treaties with Germany's allies, Austria, Bulgaria, and Hungary. At the first meeting of the assembly 42 states were represented. The league has now 54 members, including all the great states except the U.S.A. and Russia. The British Dominions, India, and the Irish Free State are separately represented. Germany was admitted in 1926.

The organs of the league are the assembly, the council, and the permanent secretariat, which comprises various technical bodies acting as expert advisers. Closely connected with it are the Permanent Court of International Justice which sits at The Hague and the International Labour Office, which has its centre at Geneva. In the assembly each member-state has three representatives, but only one vote. It meets annually in September. Of the council, which meets four times a year, Great Britain, France, Italy, Germany, and Japan are permanent members, representatives of smaller states being annually elected as temporary members. With certain specified exceptions, all decisions in both assembly and council must be unanimous.

The covenant is embodied in 26 articles. Members guarantee each other against external aggression. War or any threat of war is declared of concern for the whole league; and each member has the right to call the league's attention to any matter which threatens to disturb the world's peace. Disputes between members must be submitted to the council, or to the permanent court of international justice or a court of arbitration. A member may not resort to war



Leaf. Left, sectional diagram, greatly magnified, through the blade of a leaf. Right, chief parts of a simple leaf



Layering applied to Carnations. 1. Rooted layer ready for planting. Piece of stem at A is cut off. B indicates depth at which to plant. 2. Pegging down layer. A illustrates peg wrongly inserted; B, a correctly placed peg. 3. How stem is split at A or B. Right, side view after cutting. See art. p. 850

until three months after the league, or the court, has given its award. A state which goes to war in violation of its covenant is considered at war with all the other members.

All international engagements have to be registered for publication with the secretariat. Under a mandatory system certain undeveloped peoples in territories taken during the Great War are regarded as a sacred trust of civilization and placed under mandatory powers who must submit an annual report to a permanent commission of the league. The headquarters are at Geneva, where, in Sept., 1929, the foundation-stone of new offices was laid in Ariana Park, to house the secretariat and the library. The estimated cost of the new building is £1,000,000. A new building for the International Labour office has been erected near Parc Mon Repos.

The expenses of the league (about £1,080,000 in 1928-9) are distributed, according to a graduated scale, among its members; Britain's share being about £108,000 in the year named.

The league has done invaluable work in preventing wars; in post-war reconstruction; in the repatriation of refugees; in the repression of slavery and the trade in pernicious drugs; and in the promotion of better trade relations and public health. It has also stimulated voluntary societies, such as the League of Nations Union. See Geneva; Hague, The; consult also Ten Years' Life of the League of Nations; compiled by J. Epstein, 1930.

LEAMINGTON. Mun. borough and inland watering place of Warwickshire, in full, Royal Leamington Spa. It stands on the Leam, 2 m. from Warwick on the G.W. and L.M.S. Rlys. There are two pump rooms with baths and gardens, an art gallery, school of art, theatres, and several educational establishments. The early name was Leamington Priors, but in 1838, after a visit by Queen Victoria, it was named Royal Leamington Spa. The springs are mentioned by Camden and Dugdale. Pop. 28,946.

LEANDER. In Greek legend, the lover of Hero. To visit her he used to swim the Hellespont every evening. See Hero.

The Leander Club is premier English rowing club, with headquarters at Putney. It was founded about 1818.

LEAP YEAR. A year the date of which is divisible by four without remainder. It consists, roughly, of 366 days. It occurs every four years, except that the last year of a century is not a leap year unless its number is divisible by 400. A solar year contains 365 days, 5 hours, and 48 minutes. Taking this as 365½ days, a day was added by Julius Caesar every four years to absorb the additional 24 hours. See Calendar.

LEAR, EDWARD (1812-88). British author. Born in London, May 12, 1812, of a family of Danish descent, he began his working life as a zoological draughtsman, but from 1836 devoted himself to landscape painting. He issued many books of travel illustrated by himself, but his fame rests chiefly on his rather dismal Book of Nonsense, 1846, which he undertook in the first instance to amuse the children of the earl of Derby. Other books in the same vein are More Nonsense Rhymes, 1871, and Laughable Lyrics, 1876. Lear died at San Remo, Jan. 30, 1888.

LEASE (Lat. *laxare*, to let go). Term in English law. It means the letting of land or some interest in it for a certain period. The person who grants the lease is called the lessor, and the person to whom it is granted the lessee. A lease does not become complete until the lessee has entered into possession. If the term of a lease is three years or more it must be in writing, and by deed under the Real Property Act of 1845; but in equity, if a

lease is made in writing, and not by deed, it will be construed as an agreement for a lease. A mining lease is a grant of the right to work minerals, for consideration.

In England land held on a lease is called leasehold. The general period of a lease is 99 years. At the end of the period the land, with any buildings erected thereon, reverts to the grantor of the lease or his successors. Leasehold property is regarded as personal estate.

LEATHER. An imputrescible substance prepared from hide or skin by tanning. It is used for footwear, bags, leggings, breeches, gloves, harness, furniture, and in the manufacture of cricket balls, footballs, and many other articles. In England the centre of the tanning industry is Bermondsey, and of the leather manufacture Leeds. Large quantities of hides and skins come from abroad.

The term hide is used in reference to heavy goods, e.g. the covering of the cow, ox, or horse, the coverings of the smaller animals being referred to as skins. Leather is also made from the skins of marine animals, such as seals, while even fish skins are turned to good account. With hides, when the cleansing process is complete, the hair or wool has next to be removed, a process technically known as depilation. When the hide or skin is free from hair, etc., and the flesh side cleaned by fleshing, it is known by the name of pelt. Tanning, or conversion into leather, can be accomplished in a number of ways. The chief of these are vegetable (or bark) tanning, chrome tanning, alum tanning, and oil tanning or chamoising.

In vegetable tanning the hides are suspended in an infusion of tannin obtained from barks, etc. As tanning proceeds the hides are transferred to stronger liquors, until the process is complete. Chrome tanning has developed enormously since about 1890. Here, instead of vegetable substances, chromium compounds form the active tanning agent. Chrome leather resists the action of boiling water, a test not withstood by the ordinary vegetable tanned leather.

Finishing processes include fat-liquoring, dyeing, embossing, etc. When the skins have been chromed they are steeped or drummed in a warm dye solution of the desired colour, and then given a dressing of a soap and oil emulsion called a fat-liquor to nourish the leather and give it a soft feel and substance. The finishing process itself consists in applying to the grain side a coating of season or finish, which is composed of such materials as casein, Irish moss, or albumin.

LEATHERSELLERS' COMPANY. London city livery company. Its first charter was granted in 1444. It has contributed largely to educational and philanthropic work and maintains a technical college at 176, Tower Bridge Road, London, S.E.1. The site of its first hall is covered by Copthall Avenue. The existing structure, St. Helen's Place, E.C.3, was built in 1878 from designs by G. A. Wilson. The company has estates at London Wall, Bishopsgate, and Lewisham.

LEATHERHEAD. Town and urban dist. of Surrey. On the river Mole, it is 18 m. from London on the S.R. The industries include tanning and brewing and the making of bricks and tiles. Near are Box Hill and other beauty spots of the North Downs. There are some picturesque old houses, and an old church dedicated to SS. Mary and Nicholas, S. John's school for the sons of clergymen, and the Royal School for the Indigent Blind. Pop. 5,821.

LEATHERWOOD (*Dicra palustris*). Shrub of the order Thymelaeaceae. A native of N. America, it is much branched and tree-like, but

only 4 to 6 ft. high, and has lance-shaped, alternate leaves. The light yellow, funnel-shaped flowers are in clusters of three or four, and precede the leaves. The Indians use strips of the bark for thongs.



Leatherwood. Spray of the North American shrub

LEAVEN (Lat. *levare*, to raise). Substance that causes fermentation, or modification. Fermented dough added to fresh flour and baked results in leavened bread.

Among the Israelites the use of leavened bread was forbidden in connexion with divine worship (Ex. 12 & 13; Lev. 2), except in the case of the two loaves for the priests (Lev. 23). See Bread.

LEBANON (Arabic, Libnan; Semitic, lāhan, to be white). Mountain range in Syria. Deriving its name from its white calcareous rocks, it rises over 10,000 ft. and extends, at an average distance of 20 m. from the Mediterranean, for about 95 m. N.E. to S.W. It is separated from the parallel E. chain of Anti-Lebanon by the valley of the Buk'a'a, the ancient Coele-Syria, part of the Great Rift, through which the river el-Asi (Orontes) flows N., and the Litany S. The mountains, pierced by deep gorges, are arid except near perennial streams, and little is left of the famous cedar forests (see illus. p. 379).

LEBANON, THE, OR GREAT LEBANON. Republic of Syria. Consisting of the former Turkish provs. of Lebanon and Beirut, it was proclaimed a state Sept. 1, 1920, under a proclamation of General Gouraud, French high commissioner in Syria, and reorganized into a republic. In May, 1926, the National Assembly elected Charles Debbas, an Arab, first president. The flag is the French tricolour, with a cedar of Lebanon on the white band. The capital is Beirut (q.v.). Other ports are Tripoli, Junieh, Tyre, and Sidon. The products include silk, olive oil, wheat, wine, nuts, lignite, coal, and iron. The inhabitants include Maronites, Orthodox Greeks, Druses, and Mahomedans.

The state extends along the Mediterranean littoral from Palestine to Nahr-el-Kebir, being bounded E. by the Buk'a'a, in which flow the Orontes and the Litany. The Syrian trunk rly. and branch lines afford the chief communications. Its area is 4,300 sq. m. Pop. 580,000. See Syria.

LEBLANC, NICHOLAS (1742-1806). French chemist. Born at Issoudun, Indre, he studied medicine and chemistry. Attracted by the offer of a prize by the French Academy for a method of making soda from salt, he investigated the problem, and in 1791 started the first artificial soda factory. During the Revolution his factory was confiscated, but when it was returned to him in 1799 he was too poor to restart work, and on Jan. 16, 1806, he committed suicide. The process he invented brought great fortunes to many, but since 1884 it has been largely superseded by the Solvay process. See Soda.

LE BRUN, CHARLES (1619-90). French painter. He was born in Paris, Feb. 24, 1619, studied under his father, a sculptor, Vonet, and Poussin. Having been introduced to Louis XIV, he designed or painted many of the royal decorations at Versailles. He founded the Royal Academy of the Fine Arts in 1648, and the French School at Rome, and was first director of the Gobelins factory. He died in Paris, Feb. 12, 1690.



Leather-sellers' Company arms

LEBRUN, MARIE LOUISE ELIZABETH VIGÉE (1755-1842). French painter. She was born in Paris, April 16, 1755, and studied under Davesne, Briard, and Joseph Vernet. In 1776 she married Jean Baptiste Lebrun, painter and picture dealer. Her talent soon made her a fashionable portrait painter. In 1779 she painted her first portrait of Marie Antoinette, and in 1782 was admitted to the Academy. The Revolution drove her abroad, but in 1815 she was back in Paris, where she established a salon. She died in Paris, Mar. 30, 1842.



E. Vigée Lebrun. French painter. Self-portrait. Uffizi Gallery, Florence

LE CATEAU OR CATEAU CAMBRÉSIS. Town of France. It stands on the Selle in the department of the Nord, 15 m. from Cambrai. Formerly part of Flanders, it became French in 1678, and here a treaty was signed between France and Spain in 1559. During the whole of the Great War the town was occupied by the Germans, and it gave its name to two battles.

BATTLES OF LE CATEAU. The first battle of Le Cateau was fought between the British and the Germans, Aug. 26, 1914. The British 2nd corps, consisting of the 3rd and 5th divisions of 30,000 men, on its retreat from Mons reached Le Cateau late on Aug. 25, after three days of continuous fighting. It took up a position from Le Cateau to Caudry, with the 4th division (16,000 men) on its left flank from Caudry to near Esmes.

Early on Aug. 26 the German artillery attacked, and having 600 guns to the British 246, gradually silenced the British batteries. About 3.30 p.m. a general retirement was ordered. The British artillery lost 225 men and 38 guns. The total British loss was about 8,000 out of less than 50,000 men engaged. The German loss was probably equal. After the battle the British retirement at all points was practically unmolested.

The second battle took place Oct. 6-12, 1918. Preparations for a general advance by the British 1st, 3rd, and 4th armies were not completed till Oct. 8, when the 3rd and 4th armies attacked, the former at 4.30 a.m., and the latter at 5.10, on a front between Cambrai and Sequehart, while the French 1st army to the south also advanced. By daybreak on the 9th Cambrai was in British hands. By Oct. 12 the battle had resulted in the capture of 12,000 prisoners and 250 guns, with a wide tract of important ground.

LECITHIN. Wax-like substance extracted from egg-yolk and various animal substances. Chemically it is a mono-amino-phosphatide, and it appears to be essential in protoplasm, and especially cellular membranes. It is used in medicine in neurasthenia and various nervous diseases.

LECKY, WILLIAM EDWARD HARTPOLE (1838-1903). British historian. Born in co. Dublin, March 26, 1838, he was educated at Cheltenham College and Trinity College, Dublin.



W. E. H. Lecky. British historian

He studied divinity, but turning his mind to historical research, established his reputation with his *History of the Rise and Influence of Rationalism in Europe*, 1865, and *History of European Morals*, 1869. His great *History of England during the Eighteenth Century* appeared in eight large volumes, 1878-90. He also wrote *Democracy and Liberty*, 1896; *The Map of Life*, 1899; and the posthumous *Historical and Political Essays*, 1908. He was

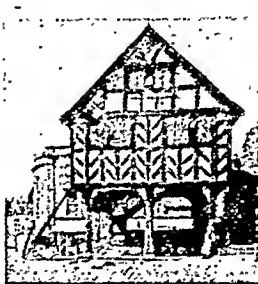
Unionist M.P. for Duhlin University 1895-1903 and died Oct. 22, 1903.

LECOUVREUR, ADRIENNE (1692-1730). French actress. Born near Châlons, April 5, 1692, she first appeared at the Comédie Française in 1717 as Electre in Crébillon's tragedy of that name and as Angélique in Molière's comedy *George Dandin*, and at once became celebrated for her powers as a tragic actress. In 1721 she became the mistress of Maurice de Saxe. She died March 20, 1730.

LECTERN. Reading desk or stand in a church from which the Epistle and Gospel are read. Of bronze or wood, it is generally in the form of an eagle with outstretched wings.

LEDA. In Greek mythology, wife of Tyndareus, king of Sparta. Zeus fell in love with her beauty, and visited her in the form of a swan; as a result Leda brought forth two eggs, from one of which sprang Castor and Pollux, and from the other Helen. See Castor and Pollux.

LEDBURY. Urban dist. and market town of Herefordshire. It is 13 m. E. by S. of Hereford on the G.W.R.



Ledbury, Herefordshire. The timbered Market House, 1633

There are tanning and malting industries, and extensive orchards and hop gardens. The church has a detached tower and a beautiful baptistery. Market day, Tues. Pop. 3,152.

LEDUM. Genus of small evergreen shrubs comprising three species. They belong to the tribe Rhododendroidae of the order Ericaceae, and are found in Europe and N. America. Possessing narcotic properties, the leaves of *L. latifolium* and *L. palustre* have been used medically. *L. latifolium* is sometimes known as Labrador tea.

LEDWIDGE, FRANCIS (1891-1917). Irish poet. Born June 19, 1891, at Slane, co. Meath, he began writing poems while a road-mender. When the Great War broke out he joined, Oct., 1914, the 5th batt. Royal Inniskilling Fusiliers, and served in Gallipoli, Salonica, Serbia, and on the western front, where he was killed in action, July 31, 1917. A poet of rare gifts, especially in his impressions of the countryside in which he had been brought up, his successive volumes were *Songs of the Fields*, 1916; *Songs of Peace*, 1917; *Last Songs*, 1918; and *Complete Poems*, 1919.

LEE OR LEA. River of England. Rising near Houghton Regis, in the S. part of Bedfordshire, it flows S.W. through Hertfordshire and then between Middlesex and Essex to the Thames near Blackwall. The total length of navigable waterway is 50 m. Its chief tributary is the Stort. There is good fishing in the upper part. Some of the water of the New River is taken from the Lee. It is controlled by the Lee Conservancy Board, whose offices are at Surrey House, Victoria Embankment, London, W.C.1.

Other rivers of this name include a Kentish tributary of the Thames and a little stream in Angus (Scotland). The Irish Lee is in co. Cork.



Lectern in Exeter Cathedral

It rises in Gougane Barra Lough, is 45 m. long, and empties itself into Cork harbour.

LEE. District of London. In the met. hor. of Lewisham, it is 8 m. from Charing Cross, with a station on the Southern Rly. The almshouses founded by Christopher Boone in 1683 were pulled down in 1877, but the chapel was left, and near to it are the almshouses of the Merchant Taylors' Company. The manor house, once the residence of the earl of Northbrook, is public property. S. Margaret's is a fine modern church.

LEE, ARTHUR HAMILTON LEE, 1ST VISCOUNT (h. 1868). British politician. Born Nov. 8, 1868, at Bridport, he was educated at Cheltenham College. He passed through the R.M.A., Woolwich, into the artillery, 1888, and remained on the active list until 1900. From 1890-97 he was professor of strategy and tactics at the R.M.C. Kingston, Canada, and in 1898 British attaché with the U.S. army in the Spanish-American war. M.P. for Fareham, 1900-18, he was civil lord of the admiralty, 1903-5, and first lord, 1921-22; director-general of food production, 1917-18; and minister of agriculture, 1919-21. Created a baron in 1918 as Lord Lee of Fareham, he was made a viscount in 1922 and received the G.C.B. in 1929. In 1921 he gave Chequers (q.v.), his Buckinghamshire home, to the nation.

LEE, NATHANIEL (1653-92). English poet and dramatist. Said to have been a son of Dr. Lee, sometime rector of Hatfield, Herts.

he was educated at Westminster School and Trinity College Cambridge. With Dryden he collaborated in two blank verse tragedies, *Oedipus*, 1679, and *The Duke of Guise*, 1682. Of his own plays the most popular was *The Rival Queens*, 1677. The others include *Nero*, 1675; *Gloriana*, 1676; *Sophonisba*, 1676, for which Purcell wrote incidental music; *Theodosius*, 1680; *Lucius Junius Brutus*, 1681; and *Constantine the Great*, 1684.



Nathaniel Lee, English poet

LEE, ROBERT EDWARD (1807-70). American soldier. Born Jan. 19, 1807, of an old Virginian family, he entered the military academy at West Point in 1825, and passed out with distinction. When the civil war began in 1861 he was in command of the first U.S. cavalry regiment, and was at once offered a high Federal command; but feeling his first duty was to Virginia, he joined the Confederates in command of the Virginian levy. Throughout 1861 he acted as assistant to President Davis. In 1862 he became commander-in-chief of the army of N. Virginia, and in three months entirely reversed the situation. His greatest victory was Chancellorsville, but the waning resources of the South placed him at a disadvantage.



Robert E. Lee, American soldier

Always hampered by presidential control, Lee was not given the general command of the Confederate forces till Feb. 18, 1865. The change came too late. His health was affected and his worn-out troops were reduced by many desertions. He surrendered to Grant at Appomattox Court House on April 9, with 26,000 men, this event marking the end of the war. In Aug., 1865, he was appointed president of Washington College, Lexington, which position he held until his death, Oct. 12, 1870. He was buried in the college grounds. In the words of Captain Chamberlayne, he was "a great soldier, wise in command, patient in preparation, swift in decision,

terrible in onset, tenacious of hold, sullen in retreat." See American Civil War.

LEE, SIR SIDNEY (1859-1926). British author. Born in London, Dec. 5, 1859, he was educated at the City of London School and Balliol College, Oxford. He joined, in 1883, the editorial staff of *The Dictionary of National Biography*; in 1890 he became joint editor with Sir Leslie Stephen, and in 1891 sole editor. The first of many editions of his *Life of Shakespeare* appeared in 1898. In addition to his *Lives of Queen Victoria* and *Edward VII* he wrote much on Elizabethan topics and lectured at Oxford and Cambridge and Boston, U.S.A. In 1913 he was made professor of English language and literature at the E. London College. Knighted in 1911, he died March 3, 1926.

LEECH. Name applied to an order (Hirudinea) of annelid worms. They possess sucking disks and live upon the blood of other animals. They are inhabitants of sea, fresh water, and marshy land. About twenty species are found in Great Britain, including the horse leech (q.v.), and, less commonly, the smaller medicinal leech. The latter (*Hirudo officinalis*) is common in Germany and Russia and it is the best known. Its mouth possesses three tooth-like serrated plates, curved so as to form semicircular saws, which enable the leech to make its typical three-gash wound. The animal sucks the blood of its victim till completely gorged, when it drops off and slowly digests its meal. Leeches are oviparous and hermaphroditic, and vary considerably in size. The colours are black, brown, or grey.

LEECH, JOHN (1817-64). British caricaturist. Born in London, Aug. 29, 1817, he was educated at the Charterhouse, and became a medical student, but spent most of his time sketching. His first Punch drawing was published in Aug., 1841. Altogether, he contributed about 3,000 drawings to that periodical, his connexion with which lasted till his death, in London, Oct. 29, 1864. Leech illustrated Dickens's Christmas Carol and a number of other books and periodicals. His original pencil work is always delicate and sensitive and instinctively well composed.

LEEDS. City and co. bor. of Yorkshire (W.R.). It stands on the Aire, 185 m. from London, and is served by the L.M.S. and L.N.E. Rlys., and the Leeds and Liverpool Canal and the Aire and Calder Navigation. Nearly 60 sq. m. in area, with a pop. of 458,000, it is a great centre of the woollen industry and the wholesale clothing and leather trades. There are extensive engineering, printing, and rope works, and thread, linen, glass, earthenware, and other factories, and breweries. The corporation owns the gas, water, and electricity supplies and a splendid system of markets. Electric tramways serve the city and suburbs

and connect it with Bradford, Wakefield, and other places. The civic buildings include the town hall, opened in 1858, municipal buildings, public library and art gallery, royal exchange, corn exchange, mechanics' institute philosophical hall, and a fine infirmary. There is a grammar school.

S. Peter's, the parish church, is famous for its clergy and influence. S. John's is a 17th century building with a notable Renaissance screen. The Roman Catholics have a cathedral, and there are many Nonconformist churches. Of public parks the chief are Roundhay Park and Woodhouse Moor. Within the city is Kirkstall (q.v.), with its ruined abbey. Temple Newsam (q.v.) was acquired by the corporation in 1922. The city sends six members to Parliament, and its head is the lord mayor.

LEEDS WARE. Pottery, made at Leeds by the firm of Hartley, Greens & Co. It was black from 1760-75, when cream ware was introduced. This is uniform in colour, with a rich glaze, thin and light, the ornament refined, and the colouring limited to printed designs and a few enamels of subdued tone. The "frog mugs" are celebrated.

UNIVERSITY OF LEEDS. This university was established in 1904, its nucleus being the Yorkshire College, founded in 1884. It took over the college buildings, but others have since been added. In 1928 the foundation stone of a fine new block was laid.

LEEDS. Village of Kent. It is 4 m. from Maidstone. The restored church of S. Nicholas is mainly Early English. Battle Hall is a 14th century building. Leeds Castle, a fine example of a medieval fortress, is on a small island on a branch of the Medway, and has a tower, a gateway, and a drawbridge.

LEEDS, DUKE OF. British title borne by the family of Osborne since 1694. It is taken from Leeds near Maidstone. Sir Edward Osborne (d. 1591), when an apprentice, saved his master's daughter from drowning, married her, and became lord mayor of London. His wealth passed to a grandson, Sir Edward Osborne, who had es-



Leeds. City Hall and municipal buildings, opened in 1858. Above, parish church of S. Peter, rebuilt 1839-41

Danby and earl of Danby before he was made marquess of Carmarthen, in 1689, and then a duke. In 1674 he became lord high treasurer and the chief adviser of Charles II, but in 1678 he was impeached for irregu-

larities. Having passed five years in prison, he signed the invitation to William of Orange in 1688, and was made president of the council. In 1695 he was again impeached, and he died July 26, 1712.

LEEDS AND LIVERPOOL CANAL. Artificial waterway of England. Opened in 1816, branches connect it with the Mersey and Liverpool Docks and with the North Sea. The length of the main cut is 127 m.; with branches, its total length is 143 m.

LEE-ENFIELD. Name of the standard rifle of the British army and navy since 1903. It is a development of the Lee-Enfield rifle of 1888. It has a bolt action and a magazine holding ten cartridges. A steel spring feeds the cartridges upwards from the magazine, and the withdrawal of the bolt throws out the empty case. A trained soldier can fire twenty aimed shots per minute. There are two sets of sights, that for normal use being graduated up to 2,000 yds., while the long range sight is graduated from 1,600 to 2,800 yds., the extreme range being about 3,700 yds. Weight, 8 lb. 14½ oz.; length 3 ft. 8½ ins.; length of barrel 25½ ins.; calibre 0.303 ins. See Rifle.

LEEK (*Allium porrum*) Hardy bulbous perennial plant of the order Liliaceae. Closely related to the onion, this vegetable is cooked and prepared in a similar manner. It is worn as an emblem by Welshmen on S. David's Day, March 1. Some regard the daffodil as the true Welsh leek.

LEEK. Market town and urban dist. of Staffordshire. It stands on the Churnet, with a station on the L.M.S. Rly., 13 m. from Macclesfield. A branch canal connects it with the Trent and Mersey Canal. The church of Edward the Confessor is a fine Decorated edifice. In the churchyard is a cross of somewhat unusual type, possibly Danish. There is an old grammar school. The chief industries are the manufacture of silks (introduced in the 17th century), ribbons, and similar goods. Near the town are the ruins of the 13th century Cistercian abbey of Dieulacresse, and Rudyard, with its lake. To the N.E. is the range of hills known as the Roches. Market day, Wed. Pop. 17,213.

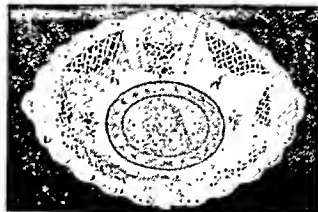
Lee-on-the-Solent. Village and watering place of Hampshire. It is 18 m. from Eastleigh, with a station on the S.R.

LEET. Word of uncertain origin, meaning a court or assembly. In this sense it was used in England in the Middle Ages. In Scotland a leet is a selected list of candidates for an office. See Court.

LEEUWARDEN. Town of the Netherlands. The capital of Friesland, it is 33 m. from Groningen, with which it is connected by rly. and canal. The chief church is S. Jacob's. There is a palace in which the stadtholders of Friesland lived; a fine building, now housing the provincial library, was formerly the law courts. The Frisian Society has its headquarters here, and there are several libraries. The chief public garden was laid out by one of the princes of Orange in 1648. There is a trade in agricultural produce,



Thomas Osborne, 1st Duke of Leeds. After Van de Vaert



Leeds Ware. Plate with pierced pattern and painted portrait



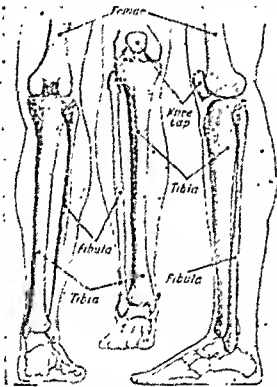
Leek, leaves and root

fruit, and fish, and the town manufactures glass, linen, and gold and silver ware. Its cattle market is important. Pop. 47,700.

LEEWARD ISLANDS. Group of the Lesser Antilles between the Atlantic and the Caribbean Sea, forming Froude's "Bow of Ulysses." They form a British possession and have an area of 715 sq. m. and a pop. of 140,000. They include Antigua (with Barbuda and Redonda), St. Kitts (with Nevis and Anguilla), Dominica, Montserrat, and part of the Virgin Islands (with Sombbrero). They form five presidencies administered by a governor assisted by executive and legislative councils. The capital is St. John, Antigua. The chief products are sugar, cotton, limes, cocoa, fruits, vegetables, and livestock.

LE FANU, JOSEPH SHREIDAN (1814-73). Irish novelist and journalist. Born in Dublin, Aug. 28, 1814, and educated privately and at Trinity College, Dublin, he was called to the Bar in 1839, but took up journalism. In addition to the series of Irish stories called *The Purcell Papers*, he wrote the popular ballad *Shamus O'Brien*, 1837, and the novels *Uncle Silas*, 1864; *Haunted Lives*, 1868; *The Wyvern Mystery*, 1869; *Willing to Die*, 1870; and *In a Glass Darkly*, 1872. He died in Dublin, Feb. 7, 1873.

LEG. In human anatomy, that part of the lower limb between knee and foot. The upper extremity of the leg enters into the knee-joint, and the lower into the ankle-joint. The leg bones—the tibia and fibula—receive the insertions of the muscles of the thigh in their upper parts, and give attachment to the muscles which move the foot. The main arteries of the leg are the anterior tibial, the posterior tibial, and the peroneal. See *Anatomy*; *Fibula*; *Knee Joint*.



Leg. Relative positions of the bones seen from three aspects

members of his council, deputed to represent him at councils, or sent as plenipotentiaries on missions of first importance. Legates de latere (or missi) act under special commission in matters of smaller importance. Legates are generally known as nuncios.

LEGATION (Lat. legare, to depute). Originally, a person or persons acting in an ambassadorial capacity for the pope. The term came to be used for those sent as envoys by secular rulers. To-day it is a collective term for the members of a mission sent to a foreign country and for their official residence. If the minister has the rank of ambassador this building is called the embassy.

LEGHORN (Ital. Livorno). Seaport of Italy. The capital of the prov. of Leghorn, it is 12 m. by rly. S.S.W. of Pisa. An important trading port, first mentioned in 891 and developed by the Medici princes, it has a cathedral, many handsome churches, and a synagogue. Among notable buildings are the exchange, theatre, naval academy, public library, museum, and lazaretto. Shipbuilding, glass-making, metal founding, and the manufacture of silk and woollen goods, straw hats, paper, and soap are among the chief industries. The sulphur springs and fine sea bathing facilities attract many visitors. Pop. 115,000.

LEGHORN FOWL. Hardy breed of domestic poultry which originated in Italy. The chief varieties are the brown and the white; others which may be considered fancy or show birds are the black, buff, pile, duckwing, and cuckoo strains. They are good layers, small eaters, and require no undue attention.



Leghorn Fowl, a hardy bird which is an excellent layer

LEGION (Lat. legere, to collect). Chief unit of the Roman army. The original number of 3,000 infantry was increased in the time of Servius Tullius to 3,000 heavy and 1,200 light-armed troops, and from the time of Marius consisted of 6,000. The legion was divided into 30 maniples or companies, each under the command of two centurions. The legionary soldier was equipped with a helmet, shield, cuirass, sword, dagger, and a missile weapon. Under the Empire the standing army consisted of from 25 to 30 legions. Legion is now used colloquially for a large number. See *British Legion*; *Foreign Legion*.

LEGION OF HONOUR. French order of merit instituted by Napoleon I, May 19, 1802. It consists of five classes, grand cross, grand officer, commander, officer, and chevalier or knight. The president of the republic is the grand master, under whom there is a grand chancellor and a council. The badge is a five-branched cross with a medallion bearing a symbolic figure of the republic and round it the legend, *République Française*, 1870. This is crowned by a laurel wreath, and the ribbon is of red watered silk. Military members are entitled to pensions. In 1930 the Irish Free State instituted a Legion of Honour.



Legion of Honour. Badge of the order

LEGATE (Lat. legatus, one legally deputed). A papal ambassador. Legates a latere are confidential persons at the pope's side,

the husband was the father of the child. See *Illegitimacy*.

LEGITIMISTS (Lat. lex, a law). Name given to those who believe that all authority has a divine sanction, and that the sovereign power in a state does not exist merely by the will of the people or the consent of the governed. In Great Britain the legitimists (known as Jacobites) believe that the house of Stuart could not lawfully forfeit or be deprived of its divinely sanctioned authority. In France the royalists and in Spain the Carlists are called legitimists. See *Bourbon*; *Carlists*; *Jacobites*.

LEGROS, ALPHONSE (1837-1911). French painter and etcher. Born at Dijon, May 8, 1837, he worked in Paris under Cambon, the scene-painter, and then studied at the Beaux Arts. Coming to England in 1863, he was professor of etching at South Kensington and then Slade professor in London University, 1876-92. He rendered memorable service to art in England, especially in regard to etching. He died at Watford, Dec. 8, 1911.



Gottfried Leibniz, German philosopher and mathematician

LEIBNIZ, GOTTFRIED WILHELM (1646-1716). German philosopher and mathematician. Born at Leipzig, July 1, 1646, a professor's son, he studied law. He visited Paris and London, meeting Boyle and Newton. Chiefly distinguished in mathematics and philosophy, he invented a calculating machine, and in 1677 devised a consistent system of the calculus which gave rise to a controversy regarding the priority of Newton's method of fluxions. In 1700 he persuaded King Frederick I to found the Berlin Academy. He died Nov. 14, 1716.

In philosophy Leibniz assumes that substance exists of monads, each with an individuality. God is the original monad, and every soul is a monad. The actions and reactions of these monads are the result of pre-established harmony. "Sufficient reason" is the chief idea of the system.

LEICESTER. City, co. bor., also co. town of Leicestershire. It stands on the Soar, 25 m. from Nottingham, and is served by the L.M.S. and L.N.E. Rlys., and the Grand Union and Navigation canals. A centre of the hosiery trade since the introduction of the stocking loom towards the close of the 17th century, it manufactures boots and shoes, cotton and elastic web goods, machinery and bricks, and has textile dyeing works. Of its churches S. Nicholas dates from Saxon times, S. Mary's and All Saints from Norman times. S. Martin's, now the cathedral, and S. Margaret's are Early English and Perpendicular. There is a 15th-16th century timber and plaster guild hall. Trinity Hospital was endowed by Henry earl of Lancaster. Of the once famous castle there remain the great hall, now used as assize courts, and the gateways. There are a few ruins of the abbey of S. Mary, in which Wolsey died.



Leicester. S. Martin's Cathedral and the Guildhall, built 15th-16th cent. Dixon Scott

Modern buildings include the municipal buildings, De Montfort Hall, market house, corn exchange, public library, art gallery, and museum. Educational establishments include the Wyggeston, technical, and art schools. A university college was founded in 1921. In 1928 Bradgate Park was presented to the city. It covers 900 acres and in it are the ruins of the house in which Lady Jane Grey was born. In 1928 the mayor was given the title of lord mayor. The city sends three members to Parliament. Pop. 234,143.

LEICESTER, EARL OF. English title borne to-day by the family of Coke. The Beaumonts, a Norman family, were the first earls. In 1206 the earldom was given to Simon de Montfort. Edmund, earl of Lancaster, a son of Henry III, obtained the earldom in 1265, and in 1564 Elizabeth made Robert Dudley earl of Leicester. The title was held by the Sidneys from 1618-1743. Thomas Coke Lord Lovel, was earl 1744-59, and George Townshend and his son from 1784 to 1855. Since 1837 the title has been held by the Cokes. The estates are in Norfolk, where is the family seat, Holkham Hall (q.v.). The earl's eldest son is called Viscount Coke (pron. Cook).

LEICESTER, ROBERT DUDLEY, EARL OF (c. 1532-88). English courtier. Fifth son of John Dudley, duke of Northumberland, he was knighted by Edward VI. In 1550 he married Amy Robsart (q.v.). A favourite and suitor of Elizabeth, he was created earl of Leicester, 1564. In 1573 he secretly married Lady Sheffield, and in 1578 bigamously married Lettice Knollys, countess of Essex (d. 1634). In 1585 he commanded the expedition to the Low Countries in which his nephew, Sir Philip Sidney (q.v.), met his death. Governor of the United Provinces in 1586, he died suddenly at Cornbury, Oxfordshire, Sept. 4, 1588.



Robert Dudley,
Earl of Leicester

was the son of Robert Wenman, who took the name of Coke as the heir to his uncle, Thomas Coke, earl of Leicester. Born May 4, 1752, he inherited, in 1776, the estates in Norfolk, which in the previous year had come to his father, and was M.P. for the county, except for a few years, from 1776-1833. In 1837 he was made earl of Leicester of Holkham, and he died June 30, 1842, being succeeded by his son, Thomas William. Coke won lasting fame as an agriculturist.

LEICESTERSHIRE. Midland co. of England. Its area is 823 sq. m. The most elevated area is Charnwood Forest (Bardon Hill over 900 ft.). In the N.E. are the Wolds. The chief river is the Soar. Leicester is the co. town; Loughborough is the only other bor., but there are a number of populous market towns and urban districts, e.g. Hinckley, Melton Mowbray, Market Harborough, and Shepshed. The main industry, outside hosiery and mining, is farming. Cattle and sheep are reared, and wheat, oats, and other cereals grown. Before the Conquest Leicestershire was part of Mercia. Since 1918 it has sent four members to Parliament, the divisions being Bosworth, Harborough, Loughborough, and Melton. The county is a famous hunting district, being one of the shires. Pop. 494,522. See map below.

LITERARY ASSOCIATIONS. At Leicester Ahoy Cardinal Wolsey died. At Leicester was born Thomas Cooper, the Chartist poet. Francis Beaumont was born at Gracedieu. Bradgate is associated with Lady Jane Grey. At Market Bosworth Grammar School Samuel Johnson taught for a time. Ashby-de-la-Zouch is the scene of the tournament in Ivanhoe. At Lutterworth Wycliffe was rector.

LEICESTERSHIRE REGIMENT. Regiment of the British army, formerly the 17th Foot. It was raised in 1688, and for its services in India in 1804 was granted the badge of the Royal Tiger and the word "Hindoo-stan," hence its nickname, The Tigers.

The regiment had three regular and special reserve battalions, two territorial, and six service battalions in the Great War. The depot is at Leicester.

LEICESTER SQUARE. London area between Charing Cross Road and Piccadilly Circus. Built 1635-71, it was named after Robert Sidney, earl of Leicester, whose mansion, Leicester House, stood on the N. side till 1790. George II when prince of Wales held a petty court here. Noted residents include Hogarth, John Hunter, the surgeon, and Sir Joshua Reynolds. The central garden was laid out and presented to the nation by Baron Albert Grant in 1874. The principal buildings are the Royal Dental Hospital and the Alhambra and Empire cinemas. The Empire, once famous as the home of ballet, was rebuilt in 1927.

One of the chief centres of theatrical land in the metropolis, it has a tube rly. station.

LEIDEN OR LEYDEN. Town of the Netherlands in the prov. of S. Holland. It lies on the Oude Rijn, 9 m. N.E. of The Hague, with which, and with Haarlem, there is rly and tramway communication. Leiden has cloth



Leiden. The Oude Rijn, with the Weigh House and Butter Market, and the Stadhuis before fire of 1929

and yarn manufactures, printing works, and markets for agricultural produce. Notable churches are those of S. Peter and S. Pancras. There are a municipal museum and a museum of antiquities, founded 1818. The university, founded by William of Orange in 1575, was famous as a medical school. In the Middle Ages Leiden was a centre of the cloth trade, and is noted also for its defence against the Spaniards in 1573-74. Pop. 70,000.

LEIGH. Mun. bor. and market town of Lancashire. It is 7 m. from Wigan on the L.M.S. Rly. There are silk and cotton industries, iron foundries, heweries, and coal mines. The borough sends one member to Parliament. Market days, Fri. and Sat. Pop. 45,532.

There are villages of this name in Kent (2½ m. from Tonbridge) and Worcestershire (4 m. from Worcester), Devon, and Surrey.



Leicestershire
Regimental badge

LEIGH-ON-SEA. Watering place of Essex. It is 33 m. from London and 3 m. from Southend, on the L.M.S. Rly., and has fishing and oyster raising industries. Pop. 7,883. See Southend.

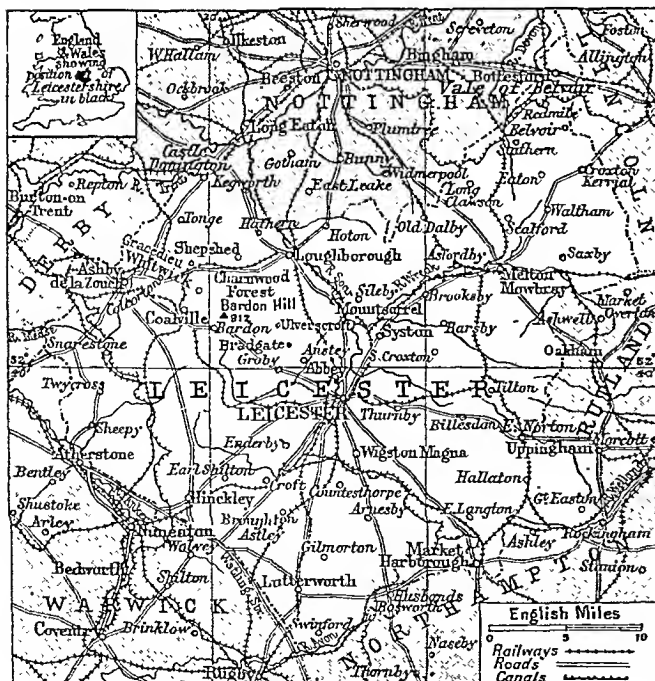
LEIGHTON, FREDERIC LEIGHTON, BARON (1830-96). British painter and sculptor. Born in Scarborough, the son of a physician, Dec. 3, 1830, he was educated in Rome, Frankfurt, Florence, Brussels, and Paris. He regarded Steinle, under whom he studied for three years at Frankfurt, as his principal master. His Cimabue's Procession, exhibited at the Academy in 1855, created a sensation. In 1858 he settled in London. He became A.R.A. in 1864, R.A. in 1869, and P.R.A. 1878, when he was knighted. Made a baronet in 1896, he was created Lord Leighton of Stretton the day before his death, on Jan. 25, 1896. He was buried in S. Paul's.

Leighton was a prolific worker and exhibited at the R.A. a fine series of canvases, most of them connected with classical story. In the representation of drapery and in rhythm of line he had hardly an equal; and he was a born sculptor. He had the Greek love for beauty of line and form.

LEIGHTON HOUSE. London residence from 1866-96 of Frederic, Lord Leighton. It is No. 12, Holland Park Road, Kensington, was designed by G. Aitchison, and was given to the nation by his sisters. Oriental in character, its chief feature is the Arab Hall. The house, to which is attached an old-world garden, contains examples of Leighton's own work, and is controlled by the Kensington bor. council, who added two new galleries in 1928.



Lord Leighton,
British painter
Elliott & Fry



Leicestershire. Map of this midland county, famous as a hunting shire

LEICESTER, THOMAS WILLIAM COKE, EARL OF (1752-1842). British nobleman and agriculturist, known as Coke of Norfolk. He

LEIGHTON, ROBERT (1611-84). Scottish divine. Educated at Edinburgh and Douai, he became in 1653 principal of the university of Edinburgh and professor of divinity. Consecrated bishop of Dunblane in 1661, and archbishop of Glasgow eight years later, he resigned in 1674, retiring to Horsted Keynes, in Sussex. He died Jan. 25, 1684. A man of saintly life, he strove to reconcile the religious factions of his country. His works, which were not published till after his death, include a Commentary of S. Peter and sermons. They exerted a great influence on Coleridge.

LEIGHTON BUZZARD. Urban dist. and market town of Bedfordshire. It stands on the Ouzel, 7 m. from Dunstable, on the L.M.S. Rly., and has a trade in corn, timber, etc. The Early English Church of All Saints was restored in the 19th cent. There is an old endowed school. The fine market cross was restored in 1852. The town takes its name from the family of Beaudesert or Bosart. Market day, Tues. Pop. 6,795.

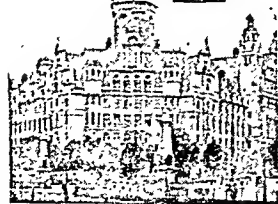
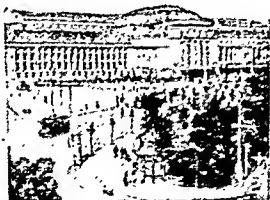
LEINSTER. Province of the Irish Free State. It contains the counties of Carlow, Dublin, Kildare, Kilkenny, King's (now Offaly), Longford, Louth, Meath, Queen's (now Laoighise or Leix), Westmeath, Wexford, and Wicklow. It has a long coastline on the Irish Sea, while the Shannon divides it from Connaught. Its area is 7,624 sq. m., and its pop. (1926) 1,149,000. Leinster (the land of the broad pointed spears) had its own kings until the time of Henry II. See Ireland:

The title of duke of Leinster was given to the family of Fitzgerald in 1766. The duke's seat is Carton near Maynooth, and his eldest son is called the earl of Kildare.

The Leinster Regiment, also known as the Royal Canadians, was a regiment of the British army until it was disbanded in 1922.

LEIPZIG. City of Saxony. It stands on the Elster 74 m. from Dresden and has an excellent service of state railways, with a central station said to be the largest in Europe.

The chief buildings include the magnificent law courts (finished in 1895), town hall, university (founded in 1409, reorganized in 1830, and one of the most celebrated in Germany), several museums, many colleges and schools, and an observatory. The old Rathaus (now a museum) dates from the 16th century, and the old Gewandhaus (or cloth hall), now containing the municipal library, from about the same time. The churches include S. Nicholas's, S. Thomas's, rebuilt in the 19th century, S. Paul's, the university church, S. John's, and S. Peter's. The old part of the city is devoted to business purposes. Of the squares, the largest is the



Leipzig. 1. Town Hall, built on the site of the citadel. 2. Railway station, the largest in Europe

Augustusplatz. Chief of the public parks are the Rosenthal and the Johanna. There are a zoological garden, a palm garden, and a race-course. The conservatoire of music has long

possessed an international reputation.

Leipzig is famous for its fairs and as a centre of the bookselling and publishing

industry. It has a large trade in furs, glass, and leather. Printing, typefounding, and bookbinding are prominent industries, while among the manufactures are paper, machinery, textiles, musical and scientific instruments, chemicals, and leather. Pop. (1925) 680,000.

LEIPZIG FAIR. This is one of the great fairs of the world. The chief gathering, the Easter fair, which lasts about three weeks and is often called the book fair, though many other articles such as furs are dealt in, was founded about 1170. Important from the 16th to the 18th centuries, the fair decayed during the Napoleonic wars, but revived in the 19th century and still attracted, up to the Great War, some 30,000 traders from all parts of the civilized world, including many Asiatics. A fair was held in 1930.

LEIPZIG, BATTLE OF. Fought between Napoleon and the allies, Oct. 16-18, 1813, and known as the battle of the nations. After the retreat from Moscow, Napoleon had raised a new but much inferior army. He had decided to defend the line of the Elbe, but had to fall back on Leipzig, menaced by Schwarzenberg from the S., Blücher from the N.E., and Bernadotte from the N. In the ensuing battle, in which the Napoleonic forces of about 180,000 men were opposed by 300,000, both sides suffered severely, the estimated losses being: French, 40,000 killed and wounded, 30,000 prisoners, 65 guns, and many standards; allies, 54,000 killed and wounded.

LEISTON-CUM-SIZEWELL. Urban dist. of Suffolk. It is 4 m. from Saxmundham, on the L.N.E. Rly. Near are the ruins of a 12th century house of Praemonstratensian canons. Sizewell, on the coast, gives its name to Sizewell Bank and Gap. Pop. 4,632.

LEITH. Port of Edinburgh, since 1920 part of the city. On the S. shore of the Firth of Forth, 2 m. N. of Edinburgh proper, with which it is connected by Leith Walk, it is served by the L.M.S. and L.N.E. Rlys., and is divided into two parts, North and South, by the Water of Leith. The church of S. Mary is a 15th century building much restored. Secular buildings include the town hall and Trinity House. Leith Links is an open space.

One of the chief ports of Scotland, Leith has both wet and dry docks in its extensive harbour, and from here ships go to many other ports. Other industries include shipbuilding, distilling, and the making of rope, paints and colours. Leith is a centre of the wholesale provision trade and of the fishing industry. The harbour of Leith was granted by Robert the Bruce in 1329 to the citizens of Edinburgh, and it was soon a thriving port. In 1833 it was made a burgh independent of Edinburgh, but in 1920 it was again included in the city of Edinburgh. See Edinburgh.

LEITH HILL. An eminence in Surrey, 965 ft. high. On the summit is a tower built in 1766 by Richard Hull and restored in 1863. In 1923 the tower and the surrounding five acres of land were bought for the nation.

LEITRIM. County of the Irish Free State. In the prov. of Connaught, it has a coastline of about 3 m. on Donegal Bay. Its area is 613 sq. m., and it is divided into two parts by Lough Allen. The Shannon forms its S.W. boundary. There are hills in the north and east, where the scenery is very beautiful, and a number of loughs. Cattle, pigs, and poultry are reared, and oats and potatoes grown. The G.S. Rlys. serve the county. Carrick-on-Shannon is the county town. Other places are Manor Hamilton, Ballinamore, and Mohill. Leitrim was known as Brenny O'Rourke, the O'Rourkes being the chief family. Pop. 55,907.

Earl of Leitrim is an Irish title borne since 1795 by the family of Clements. The family seat is Mulroy, co. Donegal.

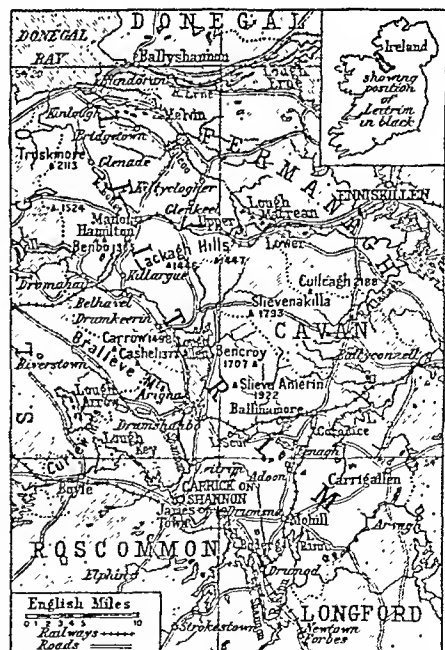
LEIX OR LAOIGHISE. County of the Irish Free State, before 1922 known as Queen's county. In the province of Leinster, its area



Leix. Map of the county of the Irish Free State which was formerly known as Queen's county

is 664 sq. m. The surface is generally flat or undulating. In the N.W. are the Slieve Bloom Mts., and in the interior is much bogland. The chief rivers are the Barrow and Nore. Agriculture is the main occupation, and a little coal is mined. The Gt. Southern Rlys. and the Grand Canal serve the county. Maryborough is the county town; other places are Mountmellick, Portlaoighise, Abbey-leix, and Stradally. The district, which in 1556 was made a county and named after the queen of England, was before that time covered by the districts of Leix and Ossory. Pop. 51,540.

LELAND, CHARLES GODFREY (1824-1903). American author. Born in Philadelphia, Aug. 15, 1824, he studied at Princeton, Heidelberg, Munich, and Paris. When living in Paris, Leland took part at the barricades



Leitrim, Ireland. Map of the Connaught county showing the loughs and principal mountain heights

with the Paris students in the revolution of 1848. Returning to America, he was called to the bar, afterwards beginning his study of gipsy life and language and devoting himself to literature. He lived in London from 1869 to 1880. In 1871 he published Hans Breitmann's

Party, and other Ballads, which achieved enormous popularity, and caused the author to be known as Hans Breitmann. Besides translating Heine and humorous German songs, he published books of verse, travel sketches, and gipsy studies, and wrote on art and folklore. He died at Florence, March 20, 1903.

LELAND, JOHN (o. 1506-52). English antiquary. Born in London, he was appointed king's antiquary by Henry VIII in 1533, and spent six years in searching abbeys, colleges, and other likely places for antiquarian records. He became insane through overwork, and died April 18, 1552, leaving a mass of MSS. which were used by later antiquaries. His chief works are *Commentarii de Scriptoribus Britannicis*, *Collectanea*, and *The Itinerary*, a valuable record of an antiquarian tour through England and Wales.

LELY, SIR PETER (1618-80). Portrait painter. Born probably at Soest, near Utrecht, Sept. 14, 1618, after studying art in Holland, Lely made his home in England in 1641, and there remained throughout his life, in favour both at the court of Charles I and during the Commonwealth. Charles II knighted him and made him court painter. He died Nov. 30, 1680.



Sir Peter Lely.
Portrait painter
Self-portrait

Lely painted most of the English notables of his time. His best work is perhaps his gallery of court beauties, now at Hampton Court. See illus. pp. 391, 420, 459, 532, 691, etc.

Leman, LAKE. Alternative name for the lake of Geneva (q.v.).

LEMAN, GÉRARD MATHIEU JOSEPH GEORGES (1851-1920). Belgian soldier. Born Jan. 8, 1851, he entered the army as a lieutenant of engineers, March 29, 1872.

At the end of 1880 he was made a professor in the Belgian military school, became director of studies Dec. 20, 1899, and its commandant in 1905. When the Great War broke out he was a lieutenant-general, in charge of the fortress of Liège, the defence of which he directed against the Germans. On its capture he was taken prisoner, Aug. 15, 1914. He was repatriated in Jan., 1918, and died Oct. 17, 1920.



General Leman,
Belgian soldier
Henri Manuel

LEMARE, EDWIN HENRY (b. 1866). British organist. Born at Ventnor, Sept. 9, 1866, in 1886 he became organist of Sheffield parish church, and in 1892 moved to London, where as organist of Holy Trinity, Sloane Street, and then of St Margaret's, Westminster, his recitals attracted much attention. He was organist at the Carnegie Hall, Pittsburgh, 1902-5; city organist of San Francisco, 1915-21; of Portland, Maine, 1922-23, and of Chattanooga, Tennessee, 1924. He published over 130 original organ and choral works.

LEMBERG or **Lwow**. Town of Poland, formerly capital of the Austrian crownland of Galicia. On the Peltew, a tributary of the Bug, it is an important rly. centre, with lines radiating to many of the great cities of Central Europe, and is the seat of a university. There are manufactures of machinery, bricks and candles. Among important buildings are the Armenian cathedral, the Roman Catholic cathedral, and the cathedral of the Greek Church. Lemberg was the centre of heavy fighting in 1914-15 in the Great War. It passed to Poland in 1923. Pop. 219,388. See Poland.

LEMMING. Genns of small rodents found in N. Europe, Asia, and America. The European lemming (*Myodes lemmus*) is about



Lemming. The small rodent with remarkable migratory habits

5 ins. long and yellowish brown in colour. It is extremely common in Norway, living in huddles and feeding on grass and moss. It has a remarkable habit of migrating from time to time without apparent reason. In countless hordes they make their way across country, eating their way through the fields of corn and devastating the country. Although at other times they display the utmost aversion to water or damp ground, during this migratory movement they swim rivers and lakes, and march on steadily in spite of every obstacle and danger till they reach the sea, into which they plunge and swim till drowned.

LEMNOS or **LMNOS**. Greek island of the Aegean Sea. It lies S.W. of Imbros, about 45 m. W. of the S. entrance to the Dardanelles. Lemnos produces grain, fruits, and tobacco. Lemnian earth, used as an antidote for poison and the plague by the ancients, was valued highly by Turks and Greeks until quite recent years. The chief town is Kastro, the ancient Myrina. The island was taken from Venice by the Turks in 1478, and was used by the British during the Great War. Its area is 180 sq. m. Pop. 27,000. See Aegean Sea; Dardanelles; Gallipoli; Mudros.

LEMON (Arabic, limoun). Small evergreen tree of the order Rutaceae. It is a native of the E. Indies, with oblong leaves and fragrant white flowers, and is still found in the wild state in N. India. The fruit is really a large, oval berry, with a nipple-like extension at the end opposite to the footstalk, the pulp and seeds enclosed in a thin, yellow rind. This skin contains numerous cells filled with the essential oil of lemon, which is obtained for use in medicine, perfumery, and confectionery by puncturing and pressure of the fresh rind. In addition to this product, and the use of the fresh fruit for making lemonade, lemons yield citric acid (q.v.), which is present in the juice.

LEMON, MARK (1809-70). British journalist and dramatist. Born in London.

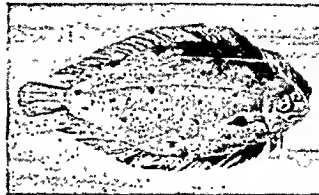


Lemberg. View showing, left, the Valaque church; centre, domed Greek cathedral; right, the city hall

Nov. 30, 1809, he founded and for a time edited *The Field*; he also edited *The London*

Journal, *The Family Herald*, and *Once a Week*. With Henry Mayhew he helped to found *Punch*, of which he was editor, 1843-70. He began to write for the stage in 1835, and was author of some 60 plays, the most notable being *Hearts are Trumps*, 1849. Successful as an amateur actor, his versatility was further displayed by several novels, including *Falkner Lyle*, 1866; fairy tales, essays, and *Mark Lemon's Jest Book*. He died May 23, 1870.

LEMON GRASS (*Andropogon schoenanthus*). Grass of the order Gramineae, native of S. Asia. Its leaves, when bruised, emit a refreshing fragrance. In India they are roasted and used medicinally. By distillation a strong yellow essential oil, emitting a lemon-like odour, is obtained. It is used in perfumery as oil of verbenia.



Lemon sole. Specimen of the flatfish found off the coasts of Britain

LEMON SOLE (*Pleuronectes microcephalus*). Species of dab, belonging to the flatfish family. Common around the N. coasts of Europe and forming an important food fish, it is also known as the smear dab, its English name being a corruption of the French *limande* (dah). The true sole (*Solea vulgaris*) belongs to a different genus and is superior in flavour and quality of flesh. Lemon soles are brownish yellow in colour on the upper side, with numerous small spots, and feed on small crustaceans. They are captured by trawling.

LEMUR (Lat. ghost). Large family of the Primates. While closely allied to the monkeys and apes, it differs from them in many important respects. The head is fox-like, and there is a total absence of the semi-human facial aspect of the monkeys. The fur is thick, and the bushy, brush-like tail is never prehensile. The slit-like nostrils are at the tip of the muzzle, and resemble those of the dog. Lemurs are most numerous in Madagascar, where alone the typical forms are found. Other genera occur in Africa, India, and the Malay Archipelago. With few exceptions lemurs live in the trees. They feed upon fruit, leaves, insects, eggs, and small birds, and are strictly nocturnal in habit. See Aye-aye; Flying Lemur; Galago, etc.

LE NAIN. Family of French painters, Antoine (o 1588-1648), Louis (1593-1648), and Mathieu (1607-77). These brothers were all born at Laon, where they received their early art instruction. They went to Paris c. 1629, and in 1630 Antoine was received as master painter of the guild, and Louis and Mathieu as "companion" painters. They were all admitted to the Academy in 1648, but Antoine and Louis died a few months later. The brothers' usual subjects were domestic genre and portraits. They excelled especially in pictures of cabinet size.

L'ENCLOS, NINON (ANNE) DE (1616-1706). French courtesan. Born in Paris, May 15, 1616, daughter of a landowner of Touraine, she became the intimate of a succession of distinguished men, who were attracted more, perhaps, by her wit than by her beauty. Among those said to have been her lovers were St. Evremond, Condé, Sévigné, and Larochehoucauld, and she certainly had great influence in Parisian society. She died Oct. 17, 1706. Pron. Longolo.



Suzanne Lenglen,
French lawn tennis
player

LENGLEN, SUZANNE (b. 1899). French lawn tennis player. She first became prominent as a player on the Riviera in 1913, and

won the French championship at St. Cloud in 1914. She won the Ladies' Singles grass championship of the world at Wimbledon in 1919-23 and again in 1925. In 1926 she turned professional, and later appeared in exhibition matches in America, England, and other countries. Her first novel was published in 1925. *See* Lawn Tennis.

LENIN (1870-1924). Name assumed by the Russian Bolshevik leader, Vladimir Ilyich Uhanoff. The son of an hereditary noble who



Lenin, Russian Bolshevik leader

was a state councillor, he was born at Simbirsk, April 10, 1870. In 1891 he studied law at the university of St. Petersburg, and four years later was exiled to Siberia as a pronounced Revolutionary. Released in 1900, he became prominent as a Socialist leader of an extreme type at various congresses, and for the next sixteen years he visited many countries, spreading his propaganda. In 1917, some weeks after the fall of the tsardom, the German government permitted Lenin and other extremists to travel through Germany in a sealed carriage and enter Russia, where he put himself at the head of the Bolsheviks, in opposition to Krensky. But the disturbances he engineered were suppressed, and for a short time Lenin disappeared.

On Nov. 8 Lenin suddenly reappeared in Petrograd, deposed the government, and established himself as president of the "council of the people's commissioners." One of his first steps was to negotiate for peace with Germany. In 1918 he transferred the seat of his government from Petrograd to Moscow. Meanwhile, Russia went to pieces, the central portion alone remaining to him, and in this he kept himself in power by a system of terrorism. During 1919-20 Lenin and Trotsky were able to defeat all attempts to overthrow their power by Kolchak, Denikin, and Wrangel, and Lenin was in power until his death, Jan. 21, 1924. *See* Bolshevism; Russia; consult also *Memories of Lenin*, N. Krupskaya, 1930.

LENINGRAD. Former capital of the Russian Empire, now the capital of the province of Leningrad. At the mouth of the Neva, with three channels emptying into the Gulf of Finland, and the meeting place of important railway lines and river and canal

now given up to the use of the people. The churches include two cathedrals, Kazan, modelled on S. Peter's, Rome, and S. Isaac's. The Hermitage contained one of the finest art collections in Europe, and the Admiralty buildings form a large pile. There is a university and an exchange. The fortress of S. Peter and S. Paul is on the right bank of the Neva. Pop. (1926) 1,614,008.

LENNGREN, ANNA MARIA (1754-1817). Swedish poet. Born at Upsala. June 18, 1754, in 1780 she married Carl Peter Lenngren, and their home became a resort of the eminent people of the day. She wrote anonymously, and for many years her poems were attributed to Leopold and Kellgren—the prominent poets of the day. In 1797 she was honoured by the Swedish Academy. She died March 8, 1817. Among her best works are her satires *My Poor Dear Husband*, *Love and Folly*, etc.

LENNOX. District of Scotland. It consists of Dumbartonshire and part of Stirlingshire, with smaller portions of Renfrewshire and Perthshire. The Lennox Hills extend almost from Dumbarton to Stirling in a N.E. direction and include the Kilpatrick Hills, Campsie Fells, Fintry Hills, etc.

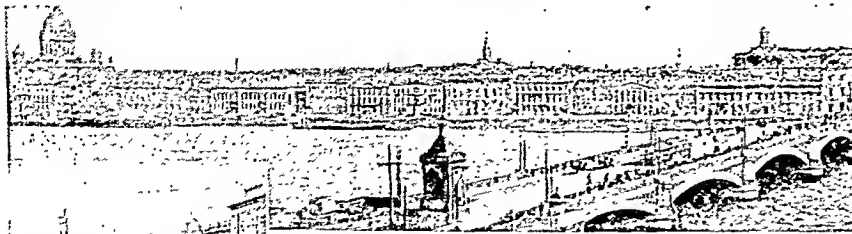
LENNOX TOWN. Town in Stirlingshire. It is 11 m. from Glasgow, on the L.N.E. Rly. It is a centre of the mining and calico printing industries. Pop. 2,526.

LENO, DAN (1860-1904). British comedian, whose real name was George Galvin. Born Dec. 20, 1860, he began life as an acrobat, and in 1880 became champion clog-dancer of the North of England. His quaint humour, eccentric dancing and feverish energy speedily gained him a leading position on the music-hall stage, and in 1888 he was engaged by Sir Augustus Harris for the pantomime at Drury Lane, where in each year he was the chief attraction. He died Oct. 31, 1904.



Dan Leno, British comedian

LENORMANT, FRANÇOIS (1837-83). French archaeologist. Born in Paris. Jan. 17, 1837, he accompanied his father, Charles, a distinguished archaeologist, to Greece in 1859. He became sub-librarian of the Institut, 1862; and taught archaeology at the Bibliothèque Nationale, 1874. He died in Paris, Dec. 9, 1883. He wrote on the Phoenician alphabet, 1872; *Money in Antiquity*, 1878-79;



Leningrad. View from the Neva, showing Schmidt (formerly Nicholas) Bridge and the dome of S. Isaac's. Left, Nevski Prospekt



Prospekt (October 25th Street) is the finest.

Founded in 1703 by Peter the Great, the city was known at St. Petersburg until 1914, when it was renamed Petrograd, this name being changed after the death of Lenin in 1924 to Leningrad.

The city is full of magnificent buildings, many of which front the Neva. Some of these are palaces, notably the winter palace,

and Historic Origins according to the Bible, 1880-84. His *Ancient History of the East*, 1868-69, and *Chaldean Magic*, 1874-75, have been translated into English.

LENS (Lat. lens, lentil, from its shape). Portion of some transparent refracting substance, such as glass, bounded by two surfaces, one of which is curvilinear and the other plane or curvilinear. Through it rays of light are by refraction caused to converge or diverge regularly. The point through which the refracted rays, or their direction, pass when the incident rays travel parallel to the axis is called the principal focus (q.v.) of the lens, and the distance between this point and the

lens is called the focal length. Every lens has two principal foci, one on each side of the lens and equidistant from it. *See* Microscope; Refraction; Telescope.

LENS. Town of France. It stands on the canalised river Souchez, which becomes the Deule, 13 m. from Arras, and is a railway junction and an important coal-mining centre. It has engineering works, and its industries include the making of iron, steel, and other manufactures dependent upon coal. During the Great War there was almost constant fighting around Lens, and great damage was done to its buildings and industries, which came to a standstill. It was occupied by the Germans in Oct., 1914, evacuated by them Oct. 2, 1918, and occupied by the British, Oct. 3. It was not until 1921 that its mines were worked again. Pop. 30,155.

LENT. In the Christian year the fast of 40 days immediately preceding Easter. Its present duration dates from early in the 4th century. Lent begins on Ash Wednesday and does not include Sundays. *See* Easter.

LENTHALL, WILLIAM (1591-1662). English politician. Born at Henley-on-Thames, June, 1591, he became a barrister. In 1640 he entered the House of Commons as M.P. for Woodstock, and was chosen by Charles I speaker of the Long Parliament. He remained speaker until 1656, and on that his fame rests. After the virtual deposition of the king he was something like the president of a republic, and to him Cromwell's letters and other official documents were addressed. He was one of those excluded from pardon when Charles II returned, and he died Sept. 3, 1662.

LENTIL (*Lens esculenta*). Annual herb of the order Leguminosae. It is a native of the Mediterranean region, and much resembles vetch. The leaf is broken up into five or six pairs of oblong leaflets, the midrib ending in a tendril. The small, pea-like flowers are pale blue, and are succeeded by short, broad pods containing one or two of the biconvex round seeds, which form an important article of food, particularly in the East. It has been cultivated from very remote times.

LENTON. Suburb of Nottingham. It stands on the Leen, and has a station on the L.M.S. Rly. It consists of Old and New Lenton. In the Middle Ages there was a Cluniac priory here. The parish church of Holy Trinity contains an old font. In 1926 the Prince of Wales bought a farm at Lenton. *See* Nottingham.

LENTULUS, PUBLIUS CORNELIUS, surnamed Sura (d. 63 B.C.). Member of one of the proudest patrician families in ancient Rome, he was consul in 71, but in 70 was expelled from the senate for his scandalous immorality. Having joined Catiline in his conspiracy against the republic in 63 B.C., he carried on negotiations with the envoys of the Allobroges, who afterwards sold their information to Cicero. Arrested with his accomplices by Cicero, he was put to death. *See* Catiline.

LENZ'S LAW. In electricity, a law of electric currents discovered by H. F. E. Lenz (1804-65). The law states that if a constant current flows in a primary circuit, and if by the motion of the latter a secondary current is created in a neighbouring circuit, the direction of the secondary current is such that it opposes the relative motion of the two circuits. *See* Current; Electricity.



Lentil. Leaves and pods containing the nutritious seeds

LEO. One of the constellations. It is the fifth sign of the Zodiac. The sun enters the constellation in the last part of July. It contains a number of notable stars, e.g. α Leonis or Regulus, a well-known helium star; β Leonis or Denebola, a blue star; Algieba, a famous double star; and also several nebulae. See Constellation.

LEO. Name of 13 popes, of whom the more important are noticed separately. Leo II, pope in 682-83, is named as a saint, June 28 being his day. Leo III, pope from 795 to 816, crowned his protector Charlemagne in 800. He was canonised in 1673. Leo IV, pope from 847-55, was a Roman, who fortified the city against the Saracens, and built at Rome the suburb called after him the Leonine city. Leo IX, a German, was pope 1049 to 1054, dying April 19, 1054. Leo XI belonged to the Medici family, and had been archbishop of Florence for over 30 years before his election to the papacy, at the age of 70. He reigned only 27 days, dying April 27, 1605.

LEO I (d. 461). Pope, 440-61. He was by tradition a native of Tuscany, and was known as Leo the Great. Elected pope in succession to Sixtus III in 440, his chief care was the promotion of the unity of the church by the extirpation of heresies, and by the maintenance of the papal supremacy over the whole church. His measures against Pelagianism were seconded by an edict of the emperor in 445. His widespread influence turned back Attila, the Hun king and his hordes in their march on Rome, and saved Rome from being sacked after the capture of the city by the Vandals in 455. Leo died Nov. 10, 461.

LEO X (1475-1521). Pope 1513-21. Born at Florence, Dec. 11, 1475, he belonged to the Medici family, and was the second son of Lorenzo the Magnificent. He was elected pope in 1513, and at once proceeded to spend the papal revenues on art, letters, and music. Under him the Roman Renaissance reached its highest splendour. Leo died Dec. 1, 1521.

LEO XIII (1810-1903). Pope, 1878-1903. Born at Carpineto, March 2, 1810, he belonged to the old Italian family of the Pecci. From 1846-78 he was archbishop of Perugia, and on the death of Pius IX was elected pope. His pontificate was remarkable for the good relations maintained with France and established with Germany, and for concordats with other governments. In Italy, Leo continued the protest against the occupation of Roman Rome by the monarchy, and prohibited Catholics from engaging in politics. He made J. H. Newman a cardinal in 1879, and issued a brief, 1896, declaring Anglican orders invalid. He died July 20, 1903.

LEO. Name of six East Roman emperors. Leo I, emperor 457-74, was called the Great, but he had little claim to the honour. Leo II succeeded his grandfather, Leo I, as an infant in 474, but died a few months later. Leo III, emperor 717-41, was named the Isaurian, as he was the founder of that dynasty. He drove back the Arabs from Constantinople, but is better known for his edict forbidding the worship of images which started a quarrel that lasted 100 years. Leo IV, son of Constantine V, succeeded him in 775, and died in 780. Leo V, surnamed the Armenian, a commander in the army of Michael I, rose against him and deposed him in 813. As emperor, he defeated the Bulgars, but made enemies by his measures against the Paulicians and image-worshippers, and was murdered, Dec. 24, 820. Leo VI, surnamed the Philo-

sopher, reigned 886-911, completed the digest of Justinian's code, and composed orations and poems.

LEOMINSTER. Borough and market town of Herefordshire. It stands on the Lugg, 157 m. from London and 12 from Hereford, on the L.M.S. and G.W. Ryhs. The church of SS. Peter and Paul has been restored, but the Norman nave remains. It was at one time the priory church. Grange House, the former market house, dates from 1633. The town has a trade in hops, cider, and cattle, and agricultural produce generally. Market day, Friday. Pop. 5,538. Pron. Lemster.

LEON. One of the old kingdoms of Spain. It originated during the years when the country was retaken from the Moors. The strip of land in the north, held by the Christians and known as Asturias, was gradually enlarged until it reached the plain and included the city of Leon. About 900 Garcia, one of its rulers, made Leon his capital, and the whole land was soon called by that name. Later, Leon passed to Ferdinand, king of Castile. On his death, in 1065, it became again a separate kingdom. Ferdinand, the son of Alphonso and Berengaria, united the two crowns finally, and the kingdoms of Castile and Leon developed into the kingdom of Spain. Leon is now covered by the provinces of Salamanca; Leon, Zamora, Palencia, and Valladolid. See Castile; Spain.

Leon, the capital of the province and earlier the capital of the kingdom, is 174 m. from Madrid. It has a Gothic cathedral, founded in 1199, and other interesting buildings, chiefly ecclesiastical. Pop. 22,200.

LEONARDO DA VINCI (1452-1519). Italian painter and sculptor. Born in the little village of Vinci, he was the natural son of a notary and of his mistress Caterina. Apprenticed to the sculptor-painter Verrochio at eighteen, Leonardo came rapidly to the front. About his thirtieth year he entered the service of Ludovico Sforza, duke of Milan, making Milan his home for about seventeen of the best years of his life. Leonardo's genius was colossal. He excelled as a mathematician, an architect and an engineer, forestalled Copernicus's theory of the movement of the earth and Lamarck's classification of animals into vertebrate and invertebrate; he discovered laws of optics, gravitation, friction, heat, and light. At thirty-five he was working on his great equestrian statue of Francesco Sforza. He painted the world-famous Last Supper; the study for the head of Christ is also at Milan.

Leonardo da Vinci, Italian painter and sculptor

From a self-portrait



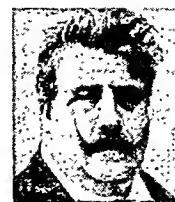
Leonardo da Vinci, Italian painter and sculptor
From a self-portrait

The fine cartoon for his Virgin and Child with S. Anne and S. John, in the Diploma Gallery at Burlington House, London, was the last work of Leonardo's hands in Milan, for the Sforza had to flee before the French king, Louis XII. Leonardo withdrew to Mantua, going thence by way of Venice to Florence at Easter, 1500. His second Virgin and Child with S. Anne is in the Louvre, as is his famous Mona Lisa. At the age of fifty-four he was back

at Milan, now in the service of the French king. In 1516 he was persuaded to go to France by Francis I, and he died there, May 2, 1519.

LEONCAVALLO, RUGGIERO (1858-1919). Italian composer. Born March 8, 1858, at Naples, he studied at the Conservatoire there.

His first work, *Tommaso Chatterton*, was not very successful, but he suddenly leapt into fame in 1892 on the production of his opera *I Pagliacci* at Milan. None of his subsequent works, which include the operas *Der Roland von Berlin* and *Trilby*, achieved an equal success. He died Aug. 9, 1919.



R. Leoncavallo,
Italian composer

LEONIDAS. King of Sparta, 491-480 a.c. When Greece was invaded by Xerxes in 480 a.c., Leonidas was sent to defend the pass of Thermopylae. At first the large Persian force was successfully repulsed, but a means of reaching the heroic defenders was divulged to them by a traitor called Ephialtes. Leonidas, with probably no more than 1,000 men, continued the fight to the last man.

LEONIDS. Swarm of meteors, so called because they apparently radiate from a point in the constellation of Leo (q.v.). The first record of this meteor shower is in A.D. 902, and there are enough records to show that the shower came in greater brilliancy and profusion some three times a century. On Nov. 12, 1833, there was a remarkable display, and Newton and Adams demonstrated that the shower was due to an immense swarm or band of meteors travelling in an elliptic orbit round the sun in a period of 33½ years. For two years after 1866 the earth still seemed to be in the thick portion of the band, but after that conspicuous showers ceased. See Meteor.

LEOPARD (*Felis pardus*). Large member of the cat genus, distinguished by its size and rosette-like spots. It resembles the tiger in ferocity, and is usually about four feet long. Leopards are found in Africa and throughout Asia, and differ considerably in the tone of their yellowish tawny fur. The leopard is an expert climber of trees, nocturnal in habit, and preys upon animals such as antelopes, goats, dogs, and monkeys. In India the leopard is commonly called the panther, the name leopard being usually restricted to the cheetah (q.v.) or hunting leopard, which belongs to a different genus.

LEOPARD. Anciently used to describe a lion with its face turned to the spectator, e.g. the lions in the first and fourth quarters of the royal arms. In this sense leopard has no relation to the animal of that name. Later heraldry, however, includes the leopard as such, but not necessarily in natural colours.



Leopard. Indian leopard, the true *Felis pardus*

LEOPARDI, COUNT GIACOMO (1798-1837). Italian poet. He was born at Recanati, June 29, 1798. After prolonged absences in Rome, Milan, and other places, he left

home in 1830 and lived in poverty at Florence and elsewhere. He died at Naples, June 14, 1837. The dominating note of Leopardi's work, in both poetry and prose, is pessimism, born of ill-health. A genius of a high order, he wrote but little, and his work is marked by a Greek refinement of beauty and form. His chief poems are canzoni and odes—mostly unrhymed—and his principal prose consists of dialogues, letters, and aphorisms.

LEOPARD'S BANE. Popular name for plants of the genus *Doronicum*, of the order *Compositae*, containing about a dozen species. They are hardy perennials with yellow flower-heads. One variety is said to be poisonous.

Leopardstown. Racecourse in the Irish Free State. It is 6½ m. S. of Dublin City.

LEOPOLD I. (1640-1705). German king and Roman emperor. A younger son of the emperor Ferdinand II, he was born June 9, 1640. He became heir to the throne of the Hapsburgs when his elder brother died in 1654. In 1655 he was chosen king of Hungary, and in 1656 king of Bohemia. In 1657 his father died, and he became ruler of a great inheritance. In 1658 he was formally chosen emperor. His reign was largely occupied with wars with France and the Turks. His last war was over the Spanish Succession, which he tried unsuccessfully to obtain for his second son Charles. He died May 5, 1705.

His great-grandson, Leopold II (1747-1792), was a younger son of the empress Maria Theresa and her husband, Francis I. By arrangement he succeeded his father as grand duke of Tuscany in 1765. In 1790, on the death of his brother, Joseph II, he became emperor. He reversed in certain directions the unwise policy of Joseph. Leopold died March 1, 1792. His eldest son was the emperor Francis II.

LEOPOLD I (1790-1865). King of the Belgians. A younger son of Francis, duke of Saxe-Coburg-Gotha, he was born at Coburg, Dec. 16, 1790. His intimate connexion with England began when, in 1816, he married the Princess Charlotte, daughter of George IV, while a little later another marriage in his family made him the uncle of Victoria, the future queen. In July, 1831, Leopold accepted an invitation to become the first king of the Belgians; in difficult circumstances and in a troubled age he ruled that country wisely and successfully until his death, Dec. 10, 1865. His second wife was a daughter of Louis Philippe. By her he had two sons: Leopold, his successor, and Philip, count of Flanders, the father of King Albert.



Leopold I.
King of the Belgians
After Laurence



Leopold II,
King of the Belgians

LEOPOLD II (1835-1909). King of the Belgians. Son of King Leopold I, he was born at Brussels, April 9, 1835. He is known as the founder of the Congo Free State, which was his private property and which, by iniquitous means, was made to yield him a large income until 1908, when he handed it over to his country. In Belgium his rule was, on the whole, wise, but the scandals of his private life were notorious. He died Dec. 17, 1909. His only son died in 1869. His third daughter, Clémentine, was married in 1910 to Napoleon, head of the Bonaparte family.

LEOPOLD, PRINCE OF BAVARIA (b. 1846). German soldier. The son of Prince Luitpold, regent of Bavaria, and Gisela, daughter of Francis Joseph of Austria, he was born at Munich, Feb. 9, 1846. He entered the Bavarian army in 1861, and was made a field-marshal in 1904. During the Great War he commanded, in 1915, the German Fifth Army, which lay along the line from the Vistula south by the Bzura to the Pilitza, and he occupied Warsaw on Aug. 5, after its evacuation by the Russians. In 1916 he was nominally commander of the Ninth Army, operating in Russia.

LEOPOLDVILLE. Capital of the Belgian Congo. It lies just below the S.W. end of Stanley Pool, not far from Brazzaville, on the opposite side. It is the farthest point reached by steamers navigating down the Congo from Stanleyville, is connected by rly. with the river port of Matadi, and is a stage on the postal air service between Boma and Elizabethville. Pop. 2,465 whites.

LEPANTO or **EPAKTOS.** Port of Greece. On the N. of the Gulf of Corinth, sometimes called the Gulf of Lepanto, it lies about 12 m. N.E. of Patras. It is the ancient Naupaktos.

The battle of Lepanto was a naval engagement fought between the Holy League and the Turks, Oct. 7, 1571. It was the last great naval engagement between oared galleys. Under Don John of Austria, a combined Spanish, Papal, Venetian, and Genoese fleet of 202 vessels attacked a Turkish force, estimated at 275 galleys, off the Curzolari islands, and inflicted upon it a defeat from which Turkish naval power never recovered.

LEPIDOPTERA. Order of insects consisting of the butterflies and moths. The four wings are covered with minute scales. It is these scales that come off in the form of coloured dust if the insect is roughly handled. All the lepidoptera pass through a complete metamorphosis, being in turn egg, larva, pupa, and imago. In the larval stage they are known as caterpillars. See Butterfly; Insect; Moth.

LEPIDOSIREN. Genus of the dipnoi or lung fishes, which are able to breathe air by means of a lung, in addition to extracting air from the water by gills. There is only one species (*L. paradoxa*), commonly known as the South American lung fish, found in the Amazon and its tributaries and in the Upper Paraguay river, where it feeds upon water snails. It resembles in appearance a very thick eel, and is about 4 ft. long when adult. When the waters dry up in the hot season it takes refuge in a burrow, and remains dormant till the rainy season.

LEPIDUS, MARCUS AEMILIUS (d. 13 B.C.). Roman politician, general, and triumvir. On the outbreak of the civil war between Pompey and Caesar in 49 B.C. he took the side of Caesar and was rewarded with several important offices. In 43 Lepidus joined Antony and Octavian in the first triumvirate, the object of which was the partition of the Roman world among its three members, Gaul and Spain being assigned to Lepidus. The pact was renewed after the battle of Philippi in the following year, Lepidus now receiving Africa, but eventually he took independent action with a view to securing Sicily for himself. He was no match, however, for Octavian, who deprived him of all his power, and Lepidus died in retirement at Circi.

LEPRECHAUN (Ir. *luchorpan*, little body). In Irish folklore, small creatures generally appearing in the form of wrinkled old men.



Leopold.
Prince of Bavaria

They are supposed to be of evil disposition, but by means of spells can be made to work for human beings or to discover hidden treasure.

LEPROSY (Gr. *lepros*, scabby). Chronic infectious disease caused by the bacilli *leprae*. It is referred to in early Egyptian records, was known in

ancient India and China, and is described in the Bible (Lev. 13). The disease prevailed extensively in Europe up to the 14th or 15th centuries, but thereafter rapidly declined. At the present day, leprosy occurs chiefly in Scandinavia, Central America, the West Indies, South America, South Africa, China, India, and Ceylon.

Leprosy is not highly contagious, and only those in the closest contact with lepers acquire the disease. It is considered probable that the bacilli enter the system through both the skin and the mucous membranes. The following forms are recognized: Following attacks of fever, a diffuse or spotted eruption appears on the face and limbs. Later, the spots become pigmented and develop into irregular nodules which sometimes ulcerate. The mucous membranes of the mouth, throat, and larynx are attacked, and death may follow from pneumonia. In another form the characteristic feature is involvement, and ultimately destruction, of the nerves.

No method is known of curing leprosy. The administration of Chaulmoogra oil is beneficial, but this must be continued for at least two years. In 1928 the British Empire Leprosy Relief Association started a campaign to stamp out leprosy.

LE PUY. City of France. It is 90 m from Lyons in the dept. of Haute-Loire. The cathedral of Notre Dame is a notable example of Romanesque work, with a lofty bell tower and beautiful cloisters. Other churches are those of S. Michel d'Aiguille, on a high rock, and S. Laurent. On the top of the steep Rocher de Corneille, which dominates the town, is a metal statue of Notre Dame de France, 50 ft. high. See illus. below.



Lepidosiren. South
American lung fish

LÉRIDA. City of Spain. The ancient Ilerda, it stands on the Segre river, 114 m. by rly. W. of Barcelona. There are two cathedrals, one founded in 1203, the other in 1759, an episcopal palace, a 13th century church, and an old town hall. Pop. 42,556.

LERWICK. Burgh of Scotland, capital of the Shetland Isles. It stands on the E. side of Mainland on Bressay Sound, 110 m. from Kirkwall. Port Charlotte, originally built by Cromwell, is used by the Royal Naval Reserve. Lerwick has a good harbour. Fishing is the main industry, and the town is also the distributing centre for the islands. Pop. 4,792.

LE SAGE, ALAIN RENÉ (1668-1747). French author. Born at Sarzeau, in Brittany. Dec. 13, 1668, he produced a large amount of work which is now forgotten, but is remembered for one of his plays, *Turcaret*, 1709, the finest comedy of the period, and for two novels, *Le Diable boiteux*, 1707, and *Gil Blas*, the first



Le Puy, France. View showing, left, S. Michel d'Aiguille; right, the Rocher de Corneille. See above real masterpiece of French fiction. *Gil Blas* was issued in four parts, the first two in 1715,

the third and fourth in 1724 and 1735. It is one of the great picaresque novels of the world's literature. Le Sage died Nov. 17, 1747.

LES ANDELYS. Town of France, composed of Le Grand and Le Petit Andely. It stands on the Seine, about 30 m. S.E. of Rouen. Le Petit Andely has some old houses and the 12th cent. church of S. Saviour. Near it is Château Gaillard. Le Grand Andely has the 13th-15th century church of Notre Dame, with some notable glass. Pop. 5,300.

LESLIE. Burgh of Fifeshire. It stands on the Leven, 12 m. from Cupar, on the L.N.E. Rly. The parish church is one of those said to be Christ's Kirk on the Green, famed in a ballad attributed to King James I. On the Green is the bull-stone. Near is Leslie House. Pop. 2,339.

LESLIE, CHARLES ROBERT (1794-1859). British painter. Born in London, Oct. 19, 1794, of American parents, he came to England and studied art at the R.A. schools. Made A.R.A. in 1821 and R.A. in 1825, he became professor of painting at the R.A. in 1848. One of his pictures is that of Queen Victoria's coronation. He died May 5, 1859. See illus. pp. 446, 630

LESLIE, FRED (1855-92). British actor whose real name was Frederick Hobson. Born at Woolwich, April 1, 1855, he made his earlier successes as a baritone vocalist in comic opera. Developing rare powers as a comedian, and finding an admirable colleague in Nolly Farren, he became for the last seven years of his life the chief mainstay of The Gaiety. He died Dec. 7, 1892.

LESLIE, GEORGE DUNLOP (1835-1921). British painter. Born in London, July 2, 1835, he was educated at the R.A. schools. He was elected A.R.A. in 1868, R.A. in 1875. His pictures were chiefly of English girlhood and idyllic groups in ancient gardens or Georgian interiors. He wrote *Our River*, 1881; *Letters to Marco* (H. S. Marks), 1893; *Riverside Letters*, 1896; *The Inner Life of the Royal Academy*, 1914. He died Feb. 21, 1921.

LESLIE OR LESLEY, JOHN (1527-96). Scottish prelate and historian. Born at Kinnassie, Sept. 29, 1527, he became a priest, his earliest charge being Oyne, Aberdeenshire. He became known as a learned and able defender of Roman Catholicism, and was one of those who fetched Queen Mary from France. He was professor of canon law at Aberdeen, a judge of the court of session, a member of the privy council, and abbot of



John Leslie, Scottish prelate

Lindores. In 1555 he was chosen bishop of Ross. His zeal in Mary's cause led to his imprisonment in England from 1571-73. He was made vicar-general of Rouen in 1579 and later bishop of Coutances. He died May 30, 1596. Leslie wrote in Latin a History of Scotland, translated by E. G. Cody in 1888-95.

LESNES ABBEY. Augustinian abbey, at Abbey Wood, Plumstead, Kent. It is 12½ m. from Charing Cross on the Southern Rly. The abbey, founded in 1178, was suppressed by Wolsey in 1524, its revenues being diverted to his colleges at Oxford and Ipswich. The property was seized by Henry VIII, and in the 17th century was settled on Christ's Hospital. It is now public property.

LESSEPS, FERDINAND, VICOMTE DE (1805-94). French diplomatist and engineer. Born at Versailles, Nov. 19, 1805, he entered the consular service in 1825. He was an able and successful consul until his retirement from the service in 1849. In 1854 he secured the

concession for his Suez Canal. Indifferent to political opposition and the doubts of the engineering world, he organized his company in 1858, and eleven years later the canal was opened by Ismail Pasha. In 1879 he was persuaded to undertake the Panama Canal scheme. The failure of this ruined him financially, and his name was implicated in the scandals resulting from its mismanagement. He died Dec. 7, 1894. See Panama Canal; Suez Canal.



Vicomte de Lesseps, French engineer

LESSING, GOTTHOLD EHRHAIM (1729-81). German critic and dramatist. Born at Kamenz, Saxony, Jan. 22, 1729, he studied theology, philosophy, medicine, the drama, and literature. He became associated with Voltaire and Moses Mendelssohn, and contributed to the *Vossische Zeitung*. In 1767 he became adviser to the national theatre at Hamburg, and in 1770 librarian to the Duke of Brunswick. He died Feb. 15, 1781.

Lessing's best known and most influential works are his *Laokoon*, 1766, a critical treatise on the limits of painting and poetry; the poetic drama, *Nathan the Wise*, 1779, which was an outcome of his controversy with Pastor Goetze and is unique as a plea for religious toleration; and *Hamburg Dramaturgy*, 1767-69, a critical commentary on the productions at the national theatre, Hamburg. He wrote many other works, all in their way notable. Lessing was a pioneer of the modern German study of Greek literature and a champion of Shakespeare. He maintained that the ultimate appeal of all art is to the imagination through the senses.

L'ESTRANGE, SIR ROGER (1616-1704). English author. Born at Hunstanton, Dec. 17, 1616, as an officer in Rupert's Horse he accompanied Charles I to Scotland in 1639. In 1648 he attempted to raise an insurrection in Kent, and, failing in this effort, fled to the Continent, where he acted as Hyde's agent on behalf of Charles II. He returned to England under an amnesty in 1653, and wrote anonymous pamphlets directed against the Puritans. Appointed surveyor of



Sir Roger L'Estrange, English author After Kneller

the imprimery and licenser of the press, 1663, he suppressed all the papers hostile to the Restoration, and issued *The Intelligencer* and *The News*, 1663-66; *The City Mercury*, 1675-80; and *The Observator*, 1681-87. He became M.P. for Winchester, 1685, and in the same year was knighted by James II. He died Dec. 11, 1704.

LETCWORTH. Urban dist. of Hertfordshire. It is 34 m. from London and 2 m. from Hitchin, on the L.N.E.R. The place was chosen for the site of the first garden city in England, and in 1903 this was laid out. A Jacobean manor house has been turned into an hotel and the old church remains, but the other buildings are modern. There are printing, bookbinding, and engineering industries. Pop. 13,316. See Garden City.

LETHAL CHAMBER. Room or receptacle in which animals can be put to death painlessly by the admission of poisonous gas

or gases, e.g. chloroform and carbonic acid. The entrance is by means of an airtight door, and chloroform vapour and carbonic acid gas are sprayed under pressure into the chamber. The process only takes a few seconds.

LETHBRIDGE. City of Alberta, Canada. On the Belly river in the S. of the province, it is a station on the C.P.R. and C.N.R., 760 m. from Winnipeg and 560 m. from Vancouver. It is the distributing centre of a coal-mining and wheat-growing district. Near is an experimental farm. Pop. 10,893.

LETHE (Gr. forgetfulness). In Greek mythology, a river of the lower world. When the souls of the dead drank of its waters, they forgot the events of their previous existence. Pron. Leeth-ce.

LETO. In Greek mythology, the mother of Apollo and Artemis by Zeus. His love for her aroused the jealousy of Hera, who sent the serpent Python to pursue Leto. She fled far and wide, finding no rest. At last in pity Poseidon fixed the floating island of Delos, and there Leto gave birth to the twins Apollo and Artemis. The Roman name was Latona.

LETTERKENNY. Urban district of co. Donegal, Irish Free State. It stands on the Swilly, 17 m. from Londonderry. Here is the Roman Catholic cathedral of the diocese of Raphoe. The port is Port Ballyraine, a mile away on Lough Swilly. Pop. 2,308.

LETTERS PATENT. In English law, letters under the great seal of England. They usually grant to some person or company a privilege, i.e. a right which is not enjoyable under the general law. See Patent Law.

LETTOW-VOR-

BECK, PAUL EMIL VON (b. 1870). German soldier. He was born at Saarlouis, March 20, 1870, and entered the German army as a lieutenant of artillery. He first came into prominence in connexion with the German operations in East Africa, 1914-15, then being a colonel and commander-in-chief of the German forces in that region. After the British under Smuts took the offensive, he made a skilful retreat, and escaped into Portuguese East Africa in 1917. He published *My Reminiscences of East Africa*, 1920.



P. E. Lettow-Vorbeck, German soldier

LETTIS. Dominant people of the Baltic republic of Latvia. In 1925 they formed 75.93 per cent of the total population of about two millions. Of N. European stock, they are tall, robust, long-faced, blue-eyed, self-reliant, two-thirds being pure blondes. Their dialect, with Lithuanian and Borussia or Old Prussian, formed the older

or Baltic sub-group of the Balto-Slavonic group of Indo-European languages. Their political history was bound up with that of Lithuania and Poland until the Russian subjugation of their land in 1795. See Latvia.

LETTUCE. Hardy annual vegetable of the order Compositae and genus *Lactuca*. Perhaps of Asiatic origin, it has been cultivated



Lettuce. Specimen of cabbage lettuce

in Europe from antiquity, and is not known as a wild plant. Lettuces may be grown practically all the year round by successive sowings under glass and pricking out; also by forcing and by intensive culture. The two principal kinds are the cabbage lettuce, or flat-growing sort, and the cos, or upright.

LEU. Rumanian silver coin, in the plural lei. The unit of the country's coinage, it is equivalent to a franc, its nominal value being 9½d. It is divided into 100 bani and is coined in 1, 2, and 5 lei pieces.

LEUCITE. Aluminium and potassium silicate found chiefly in volcanic lavas. Semi-transparent, with a vitreous lustre, it is ash grey in colour and occurs in crystals. It is remarkable for its optical properties, which vary with the temperature. White varieties of leucite are known as white garnet.

LEUCOCYTHAEMIA or **LEUKAEMIA** (Gr. leukos, white; haima, blood). Disease characterised by a permanent increase in the number of leucocytes or white corpuscles in the blood, with enlargement and changes in the spleen, the lymphatic glands, and bone marrow. Its cause is unknown. The condition is more frequent in males than females, and generally begins in middle age. Several forms are recognized. It is almost invariably fatal, though the administration of arsenic has proved beneficial in some cases.

LEUCODERMIA. Affection of the skin characterised by loss of pigment. The cause is unknown. Some cases have followed shock, and others have occurred in the course of exophthalmic goitre. White patches appear on the skin, and the pigment is increased in the surrounding areas.

LEV. Bulgarian silver coin, in the plural leva. The unit of the country's monetary system, it is equivalent to a franc, its nominal value being 9½d. It is divided into 100 stotinki, and is coined in 2 and 5 pieces.

LEVANT, THE (French, levant, rising, i.e. Orient). Name applied to the Eastern Mediterranean in general, and more particularly to the coast lands of Asia Minor, Syria, Palestine, and Egypt. In the Middle Ages trade with the Levant was maintained chiefly by French and Italian merchants, but eventually various causes forced English merchants to send merchant fleets into the Mediterranean. Levant trade suffered in the early days from pirates, and from the development of the oceanic route to the Far East. The opening of the Suez Canal route again took British ships to Levantine seas.

The Levant Company was an English company which traded with the Levant from 1592 to 1825. In 1803 the British government took over from the company the payment of the ambassador in Constantinople, and in 1825 the charter was given up. A new Levant company was formed in 1918, under British auspices, to revive the former's activities.

Levanter is the name for a wind of Eastern Spain. A cloudy, rain-bearing wind from the E., it assists in forming sand-dunes on the E. coast of Spain.

LEVÉE (Fr. lever, to raise). Reception held by the British and other sovereigns for men only, the corresponding function for ladies being a drawing-room. Levées are held during the daytime, and thereat are presented to the king persons who have been appointed to offices of various kinds, officers in the army and navy on promotion, and other approved persons. The governors-general of Canada and India hold levées in the king's name.

LEVÉE. Natural embankment formed by a river as it flows over a nearly level floodplain. Moderate floods increase the rate of formation; excessive floods cover the levées or burst through them. Beyond the levées are stagnant marshes at a lower level than the

river bed. The Mississippi has well-defined natural levees, which have prevented former tributaries from joining the main stream. Natural levees may be planted with trees or embanked. New Orleans is built upon such foundations. The dykes of Holland belong to this type. See Hwang-bo.

LEVEL. Instrument used for obtaining a horizontal surface. A common form is the spirit level, consisting of a glass tube, bent in the arc of a large circle, and filled with alcohol, save for a small bubble of air. In use the plane of the circle is vertical, the bubble seeking the highest position in the tube. When the surface on which the tube rests is horizontal, the bubble takes up a position in the centre. The surveyor's level comprises a telescope and a spirit level.

In mining, level is the name given to the horizontal excavations which are made at intervals from the shaft.

LEVELLERS. Name applied to a party that arose in England during the Civil War. Levellers were found mainly among the soldiers of the parliamentary army; their leader was John Lilburne (q.v.), and their desires for democratic reforms and toleration were put forward in the Agreement of the People. In Jan., 1649, their leaders were arrested for making statements declared by Parliament to be treasonable, and in April the Levellers in certain regiments led a mutiny. This was put down, but the party continued in existence, making fitful appearances during the Commonwealth as opponents of the existing order.

LEVEN. Loch or lake of Kinross-shire, Scotland. It is 22 m. from Edinburgh, and has an area of 5½ m. On Castle Island are the ruins of a castle, for a time the prison of Mary Queen of Scots, and on St. Serf's Island are the ruins of a priory. The lake is celebrated for trout. The river Leven, which issues from the lake, is 16 m. long. There are other rivers of this name in Scotland, and there is one in Lancashire, which flows from Windermere to Morecambe Bay.

The sea loch of Leven lies between Argyllshire and Inverness-shire, being an arm of Loch Linnhe, and is 12 m. long. Its waters are used for generating electric power. The river Leven, 17 m. long, flows into the loch.

LEVEN. Burgh and watering place of Fifeshire. It stands at the mouth of the river Leven, on the N. side of the Firth of Forth, 11 m. from Kirkcaldy; on the L.N.E.R. There are good golf links. Pop. 7,500.

LEVEN, ALEXANDER LESLIE, 1ST EARL OF (c. 1580-1661). Scottish soldier. He served in the Netherlands under Sir Horace Vere, and later he entered the Swedish service, in which he rose to be a general. In 1638 Leslie returned to Scotland, and commanded the force raised to resist Charles I. He took the castle at Edinburgh, was responsible for the rout at Newburn, and helped to make the treaty of Ripon with the king, who, in 1641, created him



Alexander Leslie,
1st Earl of Leven
After Van Dyck

carl of Leven. As lord general, he took a force to Ireland to avenge the massacre in Ulster, and in 1643 led an army into England. This took part in the battle of Marston Moor. He was again made commander-in-chief when Cromwell invaded Scotland, but the actual direction of the force that was defeated at Dunbar, in 1650, was with David Leslie. He died April 4, 1661.

In 1913 Archibald Alexander Leslie-Melville became 13th earl of Leven and 12th earl of Melville. The estates are mainly in Fifeshire, and the earl's eldest son is Lord Melville.

LEVER (Fr. leveur, Lat. levator, lifter). One of the fundamental simple machines or mechanical powers. It consists of a rigid bar fixed at one point called the fulcrum, and acted on at two other points by two forces which tend to cause the bar to rotate in opposite directions about the fulcrum. The force which the lever is used to overcome is called the weight, the remaining force the power. In a lever of the first order the fulcrum is between the power and the weight, e.g. a crowbar. In a lever of the second order the weight is between the fulcrum and the power e.g. the oar of a boat. In a lever of the third order the power is between the fulcrum and the weight, and acts at a mechanical disadvantage.

LEVER. Name of two districts Great and Little, in Lancashire. Little Lever is an urban dist. 2½ m. from Bolton. It manufactures cotton, chemicals, and paper, while around are coal mines. Great Lever, adjoining, has similar industries. Pop. 5,172.

LEVER, CHARLES (1806-1872). Irish novelist. Born in Dublin of English descent, Aug. 31, 1806, he studied medicine at Göttingen, and practised at Port-



Charles Lever,
Irish novelist

stewart, endeavouring to increase his income by contributing to the Dublin University Magazine. In 1837 his novel, Harry Lorrequer, began serially in its pages. This was followed by Charles O'Malley, 1841, and Jack Hinton, 1843. He edited the Magazine, 1842-45. In 1867 he became British

consul at Trieste, where he died, June 1, 1872. Among others of his numerous novels are Tom Burke of Ours, 1843, Con Cregan, 1849, The Martins of Cro-Martin, 1856. They are characterised by vivacity and rollicking humour.

LEVERHULME, WILLIAM HESKETH LEVER, 1ST VISCOUNT (1851-1925). British manufacturer. Born at Bolton, Sept. 19, 1851, when only sixteen he joined his father in a grocery business. His soap-making business, started in 1886, increased enormously, its wares becoming known all over the world. In 1929, before the amalgamation with the Margarine Union, Lever Bros. had a capital of £56,000,000. Its headquarters were at Wigan and Warrington until a new town, Port Sunlight, was built for its activities. Lever had interests in politics and the theatre, was an advocate of a six-hour working day and started a co-partnership scheme at Port Sunlight. He was M.P. for the Wirral division of Cheshire, 1906-10. In 1911 he was made a baronet and in 1917 a baron. He was promoted viscount in 1922. During the Coalition government, 1918-22, Leverhulme was a prominent supporter of Lloyd George and had a financial interest in its organ, The Daily Chronicle. He died May 7, 1925. He was succeeded by his son William Hulme Lever (b. 1888), who wrote his father's life.



1st Viscount Lever-
hulme,
British manufacturer
Russell

LEVERRIER, URBAIN JEAN JOSEPH (1811-77). French astronomer. Born at St Lô, Normandy, March 11, 1811, he became professor of astronomy at the École Polytechnique in 1837. In 1839 he contributed papers on the stability of the solar system to the Academy of Sciences, followed by his Tables de Mercure, 1843, which resulted in his election to the Academy in 1846. He was asked to investigate the problem of the irregularities in the movements of the planet Uranus, and as a result of a brilliant mathematical investigation Leverrier predicted the

position of a then unknown planet, and from his calculations Neptune was discovered by Professor Galle of Berlin a few days later. In 1854 he became director of the Paris observatory. He died Sept. 23, 1877. See Adams, J. C.; Neptune.

LEVI. Third son of Jacob and Leah. With Simeon he massacred the Shechemites in revenge for an injury to his sister Dinah. He had three sons when he emigrated with Jacob to Egypt. His descendants were the Levites (q.v.).

LEVIATHAN. In ancient Jewish belief, monster inhabiting the water. The name is probably derived from Heb. *lavah*, to twist. The Septuagint generally renders it dragon, and there may be a connexion with the serpent of Babylonian mythology. In Job 41, 1-34, the crocodile is described under this name, but in Isaiah 27 *leviathan* is a serpent. The word is used figuratively of anything of monstrous size.

Leviathan was the name given to a steamship, formerly the German liner *Vaterland*. She was built for the Hamburg-America line at Hamburg in 1914. She was in New York harbour when the Great War broke out, and remained there until 1917. When the United States entered the war she was used as a transport, and renamed the *Leviathan*. She carried 12,000 troops on each trip. Her gross tonnage is 59,957 tons, and her length is 907 ft.

LEVIS. Town and river port of Quebec, Canada. It is on the S. bank of the St. Lawrence, opposite Quebec, on the Canadian National Rlys., and steam ferries connect it with Quebec. Shipping and the making of boots are the chief industries. Pop. 10,470.

LEVITATION (Lat. *levitas*, lightness). Term applied by spiritualists to the phenomenon of heavy bodies rising and floating in the air. Such phenomena have been a feature of the seances of many so-called mediums. Levitation has become the subject of scientific study, quickened and intensified by the discovery of such radiations as Hertz's electromagnetic waves, employed in wireless telegraphy, Becquerel rays, Röntgen or X-rays, and Dr. Blondlot's so-called N-rays. The physicist Crawford published, 1920, the results of investigations of the subject with scientific apparatus. See Spiritualism.

LEVITES. One of the twelve tribes of Israel, forming a sacred caste. Traditionally descended from Levi (q.v.), they acted as assistants to the priests in both the Tabernacle and Temple. They had no distinct territory, but 48 cities were allotted to them, and they received tithes and alms.

LEVITICUS. Third book of the Pentateuch or Hexateuch. The title, taken from the Septuagint, means "That which concerns the Levites." Leviticus deals entirely with the priests, or with legal and ceremonial institutions. The book may be divided into five parts: (1) Sacrifices, and the duties and privileges of the priests, 1-7; (2) Consecration of the priests, 8-10; (3) Clean and Unclean, and the Day of Atonement, 11-16; (4) Holiness, 17-26; (5) Vows and Tithes, 27. See Old Testament.

LEVULOSE or **FRUIT SUGAR.** Sugar which occurs in honey and many fruits. Sweeter than cane sugar and not readily crystallisable, it is produced together with an equal amount of glucose when cane sugar is inverted by heating a solution of the sugar with a dilute acid. See Glucose; Sugar.

LEVY, JOSEPH MOSES (1812-88). British newspaper proprietor. Born in London, Dec. 15, 1812, he became a master printer in Shoe Lane, Fleet Street. There he published *The Sunday Times*, in which he acquired a chief share. In 1855 he took over *The Daily*

Telegraph and Courier, and after it had run for three months at a loss, issued it as a daily newspaper at a penny—the first penny newspaper published in London. He died Oct. 12, 1888. See Burnham, Baron; Camrose, Baron.



Lewes, Sussex. Ruins of the Norman castle which were presented to the nation in 1920

LEWES. Borough and market town of Sussex, also the county town. It stands on the Ouse, 50 m. from London and 7 m. from Brighton on the Southern Rly. The keep and gateways of the Norman castle remain, and were presented to the nation in 1920. There is a museum in the Barbican House. There are several old churches, S. Anne's, S. Michael's, and S. John's, the last-named in the part of the town known as Southover. The town hall has a fine oak staircase. About 2 m. from the town is a racecourse. Lewes was early a centre of the wool trade. It now trades in corn, malt, and timber. Market days, Mon. and Tues. Pop. 10,798.

BATTLE OF LEWES. This was fought May 14, 1264, between the troops of Henry III and those of the insurgent barons under Simon de Montfort. On May 13 Montfort had encamped at Fletching, nine miles N. of Lewes, and on the next day led his men towards the town. After a fight King Henry was made prisoner and the town was occupied. See Henry III; Montfort, Simon de.

LEWES, GEORGE HENRY (1817-78). British philosopher, critic, and miscellaneous writer. He was born in London, April 18, 1817, and studied medicine, but drifted into journalism, and wrote voluminously on a variety of subjects, besides making solid contributions to the literature of science and philosophy. He was editor of *The Leader*, 1851-54, and founded *The Fortnightly Review* in 1863. In 1854 he formed an association with Mary Ann Evans (George Eliot), whose mental development owed much to Lewes's sympathy and understanding. The two lived together as husband and wife until his death, Nov. 28, 1878. See Eliot, George.

LEWIS. Island of the Outer Hebrides, Scotland. The southern part is known as Harris and the whole sometimes as Long Island. It is separated from the mainland by the Minch. Lewis proper is 633 sq. m. in area and belongs to Ross and Cromarty; Harris belongs to Inverness-shire. It has an extreme length of 60 m. and an extreme width of 29 m.

The island is hilly in Harris and in the S.E. but most of Lewis is fairly flat. The coast is rocky and deeply indented. On the E. is the little peninsula of Eye. The town of Stornoway is on the E. coast. The main industries are cattle and sheep rearing, fishing, and, in Harris, weaving. In 1918-19 Viscount Leverhulme (q.v.) bought Lewis and part of Harris, with the idea of developing the island industries, but the scheme failed. Pop., excluding Harris, 29,000. See Harris. Pron. Lews.

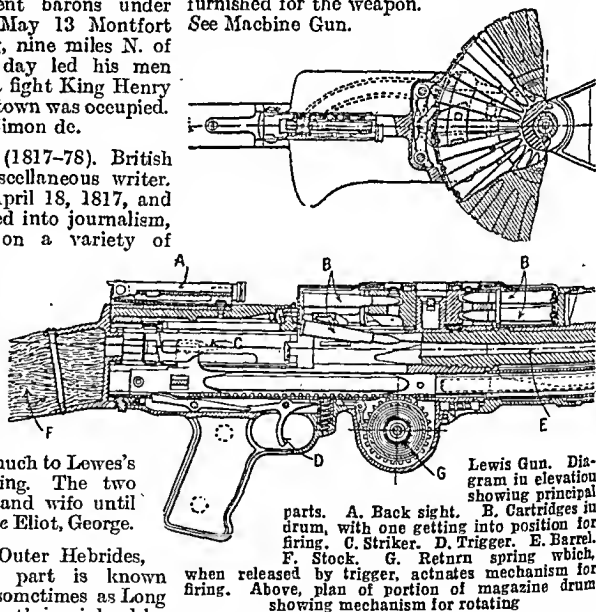
LEWIS, SIR GEORGE CORNEWALL (1806-63) British politician and author. Born in London, he became a barrister, but spent his time mainly in study and in public work. In 1847 he entered Parliament as Liberal M.P. for Herefordshire, and joined the ministry as secretary to the board of control. He held office successively as home secretary, financial secretary to the treasury, chancellor of the exchequer, home secretary again, and finally war secretary. He died April 13, 1863.

A man of great intellectual vigour, Lewis wrote *Remarks on the Use and Abuse of Political Terms*, 1832, and other works. He edited *The Edinburgh Review*, 1852-55. The baronetcy he inherited passed to his brother.

LEWIS, SINCLAIR (b. 1885). American author. Born Feb. 7, 1885, his first piece of fiction was *Our Mr. Wrenn*, 1914, but his reputation in Great Britain began with *Main Street*, 1920, and was increased with *Babbitt*, 1922. Afterwards he wrote *Martin Arrowsmith*, 1925; *Mantrap*, 1926; *Elmer Gantry*, 1927; and *Dodsworth*, 1929.

LEWIS GUN. Automatic weapon of the machine-gun type. It was invented by Colonel Lewis of the U.S. army, and first manufactured in England in 1915. It is worked automatically by the pressure of the gas resulting from the explosion of the charge and a return spring. When the trigger is pressed, a backward and forward movement, with the ignition of a cartridge at the end of each forward movement, continues until the magazine is empty. The gun is cooled by air, and can be fired from the shoulder or on an improvised rest. For use in aircraft a special form of mount is furnished for the weapon.

See Machine Gun.



Lewis Gun. Diagram in elevation showing principal parts. A. Back sight. B. Cartridges in drum, with one getting into position for firing. C. Striker. D. Trigger. E. Barrel. F. Stock. G. Return spring which, when released by trigger, actuates mechanism for firing. Above, plan of portion of magazine drum showing mechanism for rotating

LEWISHAM. Metropolitan borough of London. It lies S.E. of Camberwell and Deptford, W. of Greenwich and Woolwich, and is bordered S. by Kent. It covers about 11 sq. m. It is served by the Southern Rly. The buildings include the town hall at Catford, 1874; the church of S. Mary, 1774; the central library, enlarged in 1930; the grammar school, founded by the Rev. Abraham Colfe; the Colfe almshouses; S. Dunstan's College, opened 1838; public baths, libraries, etc. In the borough are the L.C.C. housing estates at Bellingham and Downham. Lewisham's War Memorial consists of the obelisk and lamps of remembrance which have been erected in the High Street. Pop. 188,600.

LEXINGTON. City of Kentucky, U.S.A. It is 80 m. S. of Cincinnati, on the Chesapeake and Ohio and other rlys. and is the seat of the State University. Pop. 41,534.

BATTLE OF LEXINGTON. Another Lexington is a village 11 m. N.W. of Boston, where the first action in the War of Independence was fought April 19, 1775. Anticipating an outbreak, General Gage sent 800 men to seize the stores at Concord and capture Hancock and Adams. Major Pitcairn, who had been sent in advance, encountered 50 minute-men on Lexington Common. Pitcairn fired and eight Americans were killed. The British were attacked on their return from Concord, and were only saved by reinforcements under Lord Percy. See American Independence, War of.

LEYDEN JAR. Form of electrical condenser, invented at Leiden by Cunaeus in 1746. It consists of a wide-mouthed jar coated inside and out, on the bottom and half-way up the sides, with tinfoil. An upright bar with a tripod bottom and a brass knob at the top stands in the jar. If the jar is earthed, and a high-tension current is passed into the knob from a terminal of an influence machine, electricity of the opposite polarity collects in the outside foil. The jar is discharged by applying one end of a conductor to the outside and bringing the other near the knob. Leyden jars are used for electrostatic experiments and in wireless telegraphy. See Condenser; Electricity.

LEYLAND. Urban dist. of Lancashire. It is 4½ m. S. of Preston, on the L.M.S. Rly. The chief industry is cotton manufacture. S. Andrew's Church contains interesting antiquities. Pop. 9,900.

LEYS SCHOOL, THE. English public school at Cambridge. Founded by prominent Wesleyans in 1874, it has fine modern buildings, and accommodation for 260 boys. The chapel was completed in 1906, and in 1914 King George V. opened the main gateway and library. Old Leysians maintain a mission in City Road, London, E.C.

LEYTON OR LOW LEXTON. County borough of Essex. It is on the border of Epping Forest, about 5 miles from London, and is served by the L.N.E. and L.M.S. Rlys. Of the old parish church of S. Mary, John Stryke, the antiquary, was nominal vicar, but never inducted; he was buried in the chancel. Etloo House, in Church Lane, built in 1760, was long the residence of Cardinal Wiseman. Leyton has a fine town hall, public library, and pleasure grounds, including those of the Essex cricket club. Pop. 128,432.

LEYTONSTONE. District of Greater London, in Essex. It is served by the L.M.S. & L.N.E. Rlys., is 6½ m. from Liverpool Street, and is bordered by Wanstead Flats and parts of Epping Forest. About ½ m. to the E. is Wanstead Park. See Wanstead.

LEZE MAJESTY (Fr. léser, from Lat. laedere, to injure). In law, a crime coming within the category of treason committed or which may be attempted against the sovereign or the sovereign power of a state. See Treason.

LHASA. Chief city of Tibet, and the seat of the Dalai Lama. Hemmed in by mountains, in the fertile plain of the Kyi-chu, which has its outlet into the Brahmaputra (Tsang-po), some 50 m. farther W., it is 390 m.

by road from Darjeeling, and is screened from the S.W. by two low hills. That on the left is crowned by the Potala, the palace of the Dalai Lama, which rises in tiers on the hillside, and completely dominates right the Chagpo-ri rises bluffly from the river bank. Built over the bottleneck between these hills is the gateway to the city.

The Potala is not so much a palace on a hill as a hill that is also a palace. The golden summit, five gilded pavilions, rises 300 ft. above the marsh. The whole building is 900 ft. in length. The central mass, the private palace of the priest king, is dull crimson, in fine contrast with the white of the wings and base. The immense zig-zagging staircases on either side form an imposing feature, and the great brown yak-hair curtain shrouding the sanctuary and hanging 80 feet from the roof adds a note of mystery.

The three great monasteries, De-bung, Sera, and Gaden, lie outside the city at the foot of the mountains, each constituting a small town in itself. De-bung stands in a natural amphitheatre in the hillside, 2 m. to the W. of the city. Sera, on the north border of the Lhasa plain, is a monastic university. Gaden lies 23 m. to the east. Pop. 20,000.

LI. Chinese measure of distance, averaging about one-third of a British mile. On main roads posthouses are usually placed 10 li distant from each other.

LIANA. General term for the climbing plants of great length that occur in tropical forests. They mount to the tops of the highest trees, often killing them by their deadly embrace or by shutting out the light. Many of them may be used as ropes.

LIAO-YANG, BATTLE OF. Fought in Aug. and Sept., 1904, during the Russo-Japanese War. The Russian troops, numbering 145,000 men, were commanded by Kuropatkin, while Marshal Oyama attacked with 120,000, divided into three armies. Kuropatkin, deceived as to numbers, fell back from his outer line of defence, which was 55 m. in extent,

Japanese entered Liao-yang. The Japanese lost heavily and were exhausted, while Kuropatkin had strong untouched reserves, for he mistakenly ordered retreat when victory was within reach. See Kuropatkin, A. N.

LIAS. In geology, the lowest division of the Jurassic system. It consists chiefly of clays, sands, and limestones, over 1,000 ft. in thickness, and divided into the Lower, Middle, and Upper Lias. These rocks are found extensively in England from Devonshire to Yorkshire, and have abundant fossil remains. See Fossil; Jurassic System.

LIAU-TUNG. Peninsula at the S. extremity of Manchuria, separated from the prov. of Chih-li by the Gulf of Liau-tung. In 1895, after the Chino-Japanese War, it was ceded to Japan. Russia, Germany, and France, however, compelled Japan to waive her claim in exchange for a monetary payment. In 1898 Russia obtained on lease from China Port Arthur and Talienwan (Dairen, Dairen).

at the extreme point of the peninsula. After the Russo-Japanese War, the territory was transferred to Japan, 1905, and in 1915 China agreed to extend the lease to 99 years from the original date of the cession to Russia. The territory is now called by the Japanese Kwantung province, and is governed from Dairen. Its area is about 1,438 sq. m. Pop. 1,147,394, including 909,133 Chinese.

LIBAU. Seaport of Latvia, also known as Liepaja. It is on a sandy strip of land between the Baltic and Lake Liepaja, 150 m. W. of Riga by rail. Exports include timber, cereals, wool, and hides. The harbour is excellent. There are sulphur springs in the neighbourhood. Pop. 75,000. See Latvia.

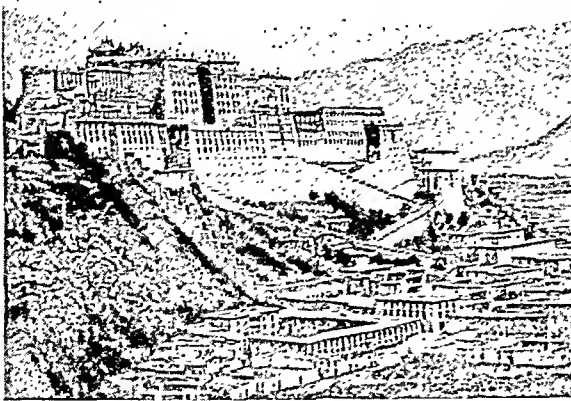
LIBEL (Lat. libellus, a little book). In law, defamation of a person by means of written words, print, pictures, or any publication tending to bring him into contempt or hold him up to ridicule. It also includes in law any writing of a blasphemous, treasonable, seditious, or immoral nature. Malicious intention is not necessary to make a written or printed statement libellous if it reflects on the character of another and is published without lawful justification or excuse, and the use of the name of a real person in a work of fiction has been held to constitute a libel.

Action lies both against the author and the publisher of a libel. It is a defence to an action for libel that the words were written or printed on a privileged occasion; thus the written character of a servant, however unfavourable, is privileged if in accordance with truth and free from malice, as also is the written report of the financial stability of a customer given by a banker if requested to do so by the customer. In respect of both these, however, care must be taken to avoid publication by allowing the privileged communication to be brought to the knowledge of any third person not entitled to see it.

LIBERAL. Name taken by one of the political parties of Great Britain. The successor of the Whig party, its members believe in steady progress along constitutional lines, and are prepared to trust the people to the fullest extent compatible with order. The party organization is twofold. There is a Liberal Central Association at 21, Abingdon St., Westminster, while local associations are united as the National Liberal Federation,



Liana. Trees in a Brazilian forest showing the liana hanging from the highest branches.



Lhasa, Tibet. Palace of the Dalai Lama. The great building is his residence; at the foot are convents and hostels for lamas and pilgrims.

to the second line, known as the Shushan position, 15 m. long.

In this position the Russians were attacked by the combined Japanese armies, and after severe fighting retired northward, while the

whose offices are at 42, Parliament St., London, S.W. The name Liberalism was given to the movement for greater political liberty, in all countries, that was a feature of European history in the 19th century. See Conservative; Unionist; Whig.

LIBERAL UNIONIST. Name taken by those members of the Liberal party who broke away from the main body when Gladstone declared in favour of Home Rule for Ireland, in 1886. In 1912 they formally amalgamated with the Conservative party.

LIBERATOR. Literally, one who liberates. It has been applied especially to Daniel O'Connell, the protagonist of Roman Catholic emancipation, and to Simon Bolivar, the S. American patriot. The Liberator was the title of a paper issued in the U.S.A., from 1831 to 1865, to protest against slavery.

The name liberator is also connected with a financial crash which occurred in 1892, when the failure of the Liberator Permanent Building Society and the London and General Bank established by Jabez Balfour (q.v.) caused widespread distress among small investors.



Liberia. Map of the Negro republic of West Africa.

LIBERIA. Negro republic of Africa. It stretches inland from the W. African coast to a depth in some places of 200 m., from Sierra Leone to the Ivory Coast. There is a strip of level land along the coast, but the interior is mountainous. Its area is about 45,000 sq. m. The capital is Monrovia. The soil is fertile; the forests produce ebony, mahogany, teak, and other valuable woods; and gold, tin, copper, zinc, diamonds, and other minerals exist; but the country awaits development and is still largely unexplored.

The republic was constituted in 1847 as the result of efforts of various colonisation societies in N. America and Europe to settle freed slaves in Africa. It was an original member of the League of Nations. The constitution is modelled on that of the U.S.A. Pop. estimated at from 2,000,000 to 2,500,000.

LIBERTY. SIR ARTHUR LASENBY (1843-1917). British merchant. Born at Chesham, Aug. 13, 1843, in 1875 he started business on his own account in London, and began to put into practice the artistic ideas for dress and furnishing fabrics which he had acquired. A large business, unique in its way, was built up, and in 1894 was turned into a limited liability company. Liberty, who was knighted in 1913, rendered many services to the applied arts. He died May 11, 1917.

LIBITINA. In classical mythology, an Italian goddess. She is especially identified with the cultivation of the earth and with the dead. She was sometimes identified with Venus. Pron. Lihhi-tina.

LIBONIAS OR **JACOBINIA.** Genus of shrubs and herbs of the order Acanthaceae, natives of tropical America. They have opposite, somewhat leathery, undivided leaves, and large, two-lipped flowers, of yellow, red or rosy hue. *Jacobinia ghiesbreghtiana* is frequently grown in European hot-houses. It is a native of Mexico, and has polished, lance-shaped leaves and terminal clusters of bright scarlet flowers, which appear in winter.



Libonias. Foliage and bloom of the Central American shrub

LIBRA (Lat. balance, pound; Ital. libbra). Roman unit of weight nearly equal to 12 oz. avoirdupois. The name is still used in Spain, Portugal, Mexico, and S. American countries for the pound weight, while the initial letter appears in the English £ s. d. as an abbreviation for pound sterling.

The name libra is given to one of the constellations, the seventh sign of the Zodiac also called the scales.

LIBRARY. Collection of books, and, by extension, the building or room in which they are housed. The earliest libraries were collected in Babylonia and Egypt, while many famous libraries existed in the cities of Asia Minor. Those of ancient Rome were chiefly the spoils of war. Modern libraries have their beginnings in the spread of Christianity in Europe. In Great Britain they began with the collection in great monastic institutions, and when these were suppressed in the 16th century their treasures were dispersed and largely destroyed.

In 1604 Sir Thomas Bodley founded the Bodleian Library (q.v.) at Oxford, while the university libraries of Cambridge, Trinity College, Dublin, Aberdeen, Edinburgh, Glasgow, and St. Andrews were all of earlier date. The British Museum (q.v.) library, the greatest in the world, owed its foundation, 1753, to the benefactions of Sir Hans Sloane, and its pre-eminence to the addition of many priceless collections. Other famous libraries are the Bibliothèque Nationale, Paris; the Vatican library in Rome, which is the oldest in Europe; national libraries in Rome and other great continental cities; and the library of Congress, Washington, U.S.A.

The first act of Parliament giving local authorities power to levy a rate for libraries was passed in 1850, and various acts relating to public libraries have been passed since, that of 1919 empowering county councils to levy a library rate while entrusting the administrative arrangements to their education committees. Andrew Carnegie (q.v.) paid the cost of buildings for many places and founded the United Kingdom Carnegie Trust for carrying out and extending this work.

The organization and administration of libraries requires technical knowledge and experience of a special kind. In 1905 the Library Association, founded in 1877, instituted a diploma in librarianship obtainable by examination. At University College, London, instruction in the principles of library practice is given. (See Frontispiece.)

LIBYA. Italian colony in N. Africa. With the Mediterranean on the N. it lies between Tunisia and Algeria on the W. and Egypt on the E., and extends as far S. as the French Niger Colony. It is divided for administrative purposes into the districts of Tripolitania and Cyrenaica, with their respective capitals at Tripoli and Benghazi. In Sept., 1911, Italy invaded Tripoli, then in Turkish possession, drove out the Turkish and Arab forces, and

on Nov. 5, 1911, annexed the country. By the treaty of Ouchy, Oct. 18, 1912, Italy's sovereignty over Tripolitania and Cyrenaica was established. The chief towns are Tripoli, Benghazi, Derna, and Homs, with the oasis-towns of Ghadames, Murzuq (Murzuk), and Ghat. The area is about 635,000 sq. m.; pop. about 775,000 natives and about 30,000 Europeans. See Cyrenaica; Tripolitania.

The Greeks used the word Libya for the whole of the African continent. The name Libyan desert is given to that portion of the Sahara which stretches from the valley of the Nile into Libya.

LICENCE (Lat. licentia, permission to act). In law, an authorisation from competent authority to do something which otherwise would be unlawful. The word is also used of the document conveying the authorisation.

Music and dancing licences are required for houses kept for public dancing, music, and similar entertainments. Excise licences are necessary to carry on various trades; also for keeping carriages, dogs, male servants, and motor vehicles, and to carry a gun, kill game, and use armorial bearings.

LICENSING. Term used mainly for the laws relating to restrictions on the sale of intoxicating liquors.

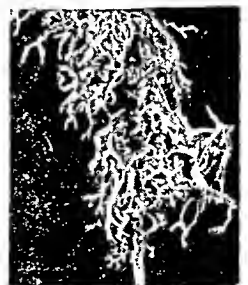
The law in England was consolidated by the Licensing (Consolidation) Act, 1910. It provides that licences may be granted by licensing justices at their annual meeting to such persons as they think fit and proper. As a rule every licensee must be renewed annually. It runs from April 5 to April 5. But in the case of licences granted since 1904 the justices may, at their discretion, grant a licence for a term not exceeding seven years.

When the licensing justices are convinced that a licensed house is not required by the needs of the locality they may refer it to the county compensation authority, and the latter may suppress the licence on the payment of compensation to the licensee and the owners of the house. The fund for compensation is provided by an annual levy on all holders of on-licences. When a new licensee is granted (since 1904) the grantee must pay what is called monopoly value; that is to say, a sum which is supposed to represent the value of the monopoly right granted to him.

In Scotland a seller of exposable liquor must obtain an excise licence; and every retailer must first procure from a local court of licensing magistrates a certificate entitling him so to apply. The Scots law on the subject is to be found mainly in the Licensing (Scotland) Act, 1903. Such certificates are granted from year to year; but are renewed as a matter of course unless notice of objection is given to the holder. There is an appeal against a refusal to renew, but none against the refusal of a new certificate. See Club; Local Option; Prohibition; Sunday Closing.

LICHEN.

Dual plant, each apparent individual being a colony of algae and fungi, living symbiotically, i.e. each supplying some need of the other. Formerly considered as a distinct division of the flowerless plants, their proper place in classification is under the head of Ascomycetes, a division of the fungi. A lichen consists of a greyish network of filaments, the fungal element, enclosing a large number of



Lichen. Tree lichen, *Evernia prunastri*, a foliaceous kind

simple green cells, the algal element. By the continuous renewal of both elements the compound organism can live almost indefinitely, enduring extremes of cold and heat, dryness and moisture, on rocks, tree-trunks, dry brick walls of dwellings, and under the shelter of heather. A few lichens have been used as a food or medicine, but their chief economic value is as dye-stuffs, e.g. orange dye from beard moss. See Beard Moss; Fungus; Iceland Moss. Pron. lie-ken

LICHFIELD. City and market town of Staffordshire. It is 117 m. from London and 16 from Stafford, on the L.M.S. Rly. It is chiefly famous for its cathedral, built mainly in the 13th and 14th centuries. Features of this beautiful building are the west front, the chapter house, the lady chapel, the three spires, Chantrey's Sleeping Children, and some fine glass. The city was the birthplace of Samuel Johnson, the house in which he was born having been made into a museum. It also has associations with Garrick, Addison, and Anna Seward. Old buildings include S. John's Hospital, dating from 1495, and the Three Crowns inn. Lichfield is an agricultural centre and has breweries and harness-making works. Market day, Friday. Pop. 8,393. See Chantrey, Sir F. L.; Johnson, Samuel.

Earl of Lichfield is a British title borne since 1831 by the family of Anson. The family residence is Shugborough Hall, Stafford. The eldest son is known as Viscount Anson.

LICHNOWSKY, CHARLES MAX, PRINCE (1860-1928), German diplomatist. Born at Kreuzenort, Mar. 8, 1860, he was for a time an officer in the Life Guard Hussars. An attaché of the German embassy in London, 1885, he later became a departmental chief in the foreign office of Berlin. From Oct., 1912, until the outbreak of the Great War in Aug., 1914, he was German ambassador in London. In a memorandum, My Mission to London, written in 1916, and published in April, 1918, he charged Germany with having deliberately destroyed the chance of peace, and paid a tribute to Sir Edward Grey's pacific policy. He died Feb. 27, 1928.



Prince Lichnowsky, German diplomatist

written in 1916, and published in April, 1918, he charged Germany with having deliberately destroyed the chance of peace, and paid a tribute to Sir Edward Grey's pacific policy. He died Feb. 27, 1928.

LICHTENBERG. Former principality of Germany, part of the Prussian Rhine province. It was a district about 220 sq. m. in extent, on the W. bank of the Rhine, enclosed by the rivers Nahe, Blies, and Glan. The congress of Vienna decreed that Prussia should provide a state for Ernest, duke of Saxe-Coburg. This was created from lands on the Rhine in 1816, and in 1919 Ernest took the title of duke of Lichtenberg. In 1834 he gave it back to Prussia in return for a pension.

LICINIUS. Roman emperor 307-24. He was promoted by Galerius to be one of the junior rulers of the empire. He defeated Maximinus II in 313, and became sole ruler of the eastern half. In 314 war broke out between him and his brother-in-law Constantine. After Constantine adopted a policy of toleration towards the Christians in the West, Licinius continued to persecute them in the East. In 324 Licinius was defeated by Constantine and put to death.

LICK. American observatory erected on one of the three peaks of Mount Hamilton, in California. It was endowed by James Lick, a San Francisco millionaire, who died Oct. 1, 1876. It belongs to the university of California, and its first director was Professor Holden, appointed in 1885. In 1888 the great 36-in. refracting telescope was installed. See Observatory; Telescope.

LICTOR. Officer who walked in front of certain of the higher magistrates of ancient Rome. He bore on his left shoulder the fasces, a bundle of rods with an axe bound in the middle, which symbolised the magistrate's power of corporal and capital punishment.

LIDDELL, HENRY GEORGE (1811-98) British scholar. Born Feb. 6, 1811, he became a tutor and lecturer at Christ Church, Oxford. Having been ordained, he went, in 1846, to Westminster School as headmaster, where he remained until 1855, when he succeeded Gaisford as dean of Christ Church. He held that post until 1891, and died Jan. 18, 1898. He is best known as the part author of Liddell and Scott's Greek Lexicon, still the outstanding work of its kind.

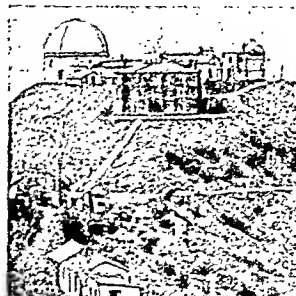
LIDDESDALE. District of Roxburghshire, Scotland. It is the valley of the Liddel. Hermitage Castle, a stronghold dating from the 13th century, stands on a hill overlooking Hermitage Water, which runs into the Liddel. It was the property of the Douglasses and then of the Hepburns. Other historical buildings in the vale include Mangerton Tower. Dandie Dimmont, who figures in Scott's Guy Mannering, was a Liddesdale farmer.

LIDDON, HENRY PARRY (1829-90). British divine. Born at North Stoneham, Hampshire, Aug. 20, 1829, he was ordained and became a curate at Wantage. In 1854 he was made vice-principal of the theological college at Cuddesdon, and in 1859 vice-president of S. Edmund Hall, Oxford. He remained in Oxford, one of its most influential figures and a leader among the followers of Pusey, until 1870, when he was appointed canon residentiary of S. Paul's. He held the post of Ireland professor of exegesis at Oxford until 1882. He died Sept. 9, 1890. Liddon belonged to the high church school, and was a vigorous defender of orthodoxy. He was the greatest Anglican preacher of his time, and one of the most popular.

LIDFORD, OR LYDFORD, LAW. Term denoting trial after execution, farcical injustice, as expressed in the old English proverb, "First hang and draw, then hear the cause by Lidford law." The allusion is to the summary procedure of the stannaries or tin mines courts, Lidford, on the western edge of Dartmoor, having been formerly the chief town of the stannaries. See Lyneh Law.

LIDO (old Ital. shore). Watering place of Italy, S.E. of Venice (q.v.). It is one of a chain of small islands separating the Venetian lagoon from the Adriatic. At the N. end is the fortress of San Nicolo, with an old Protestant cemetery containing the graves of several well-known English persons. The plural, Lidi, is applied to the whole chain of islets.

LIEBIG, JUSTUS, BARON VON (1803-73). German chemist. Born at Darmstadt, May 12, 1803, he was apprenticed to a pharmacist, and went to Bonn in 1819 to study chemistry. After graduating at Erlangen, he attended the lectures of Gay-Lussac, Thénard, and Dulong in Paris. In 1824 he was appointed professor of chemistry at Giessen, was



Lick Observatory, opened in 1885. It is built on Mt. Hamilton, California

created a baron in 1845, and in 1852 accepted the chair of chemistry at Munich, which he held until his death, April 18 1873.

Liebig introduced many improvements in chemical apparatus. He discovered hippuric acid, aldehyde, chloral, and chloroform, and investigated many organic chemicals. In addition he rendered great services to agriculture by his researches. Those relating to the latter are contained in his Familiar Letters on Chemistry.



Justus von Liebig, German chemist

LIEBKNECHT, KARL (1871-1919). German socialist. Born in Leipzig, son of Wilhelm Liebknecht, he practised as a barrister in Berlin. He was returned, in Jan., 1912 by the Potsdam socialists to the Reichstag. In 1914 he refused to vote for the war credits, but, called to the colours in 1915, served with a labour battalion. A speech on government finance, made when on leave, led to his expulsion from the Reichstag in April, 1916, and shortly afterwards he was sentenced to imprisonment for attempted high treason. Released in Oct., 1918, he was joined by Rosa Luxemburg. On the failure of the Spartacist rising he was arrested, and was shot while attempting to escape, Jan. 15, 1919.

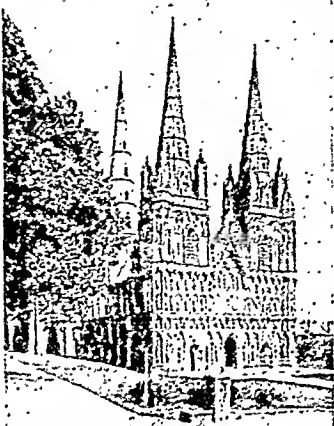
LIEBKNECHT, WILHELM (1826-1900). German socialist. Born at Giessen, March 29, 1826, he was in Paris on the outbreak of the revolutions of 1848, and led some volunteers to Baden. After a vain attempt to establish a republic, he made his way to London, where he fell under the influence of Karl Marx. On the amnesty of 1861 he returned to Prussia as editor of the Norddeutsche Allgemeine Zeitung, 1862. A bitter opponent of Bismarck, he was banished in 1865, settling in Leipzig. In 1872 he was imprisoned, together with Bebel, for libelling the chancellor. Whilst in gaol he was elected to the Reichstag in 1874. In 1890 he became editor of Vorwärts. He died Aug. 6, 1900.

LIECHTENSTEIN. Independent principality in Central Europe. It extends along the right bank of the Rhine between Switzerland and the Austrian province of Vorarlberg. Its area is 65 sq. m. Vaduz is the capital.

The principality takes its name from the family of Liechtenstein, which, long seated at Mädling, near Vienna, acquired in 1699 and 1713 the co. of Vaduz and the lordship of Schellenberg, and made this region, and not Austria, their home. Their head was made a prince of the empire in 1719. Liechtenstein was an independent state from 1806-15, when it joined the German Confederation. In 1866 it became again a sovereign state, although it still maintained relations with Austria. The Great War severed this connexion, and since



Henry Parry Liddon, British divine



Lichfield. West front of the cathedral, showing the famous three spires

1921 Liechtenstein has had the Swiss currency, and since 1924 has been included in the Swiss customs union. The state is governed by a diet of 15 members. Pop. 11,500.

LIÉGE. City of Belgium. Forming an amphitheatre surrounded by lofty hills, it occupies a magnificent position on both banks of the Meuse, 55 m. S.E. of Brussels and about 10 m. from the German frontier.

The cathedral of S. Lambert was destroyed by the French in 1795, and the



Liège, Belgium. Church of S. Paul, which dates from the 10th century, but was rebuilt in the 14th

title of cathedral was conferred on the church of S. Paul, a Gothic building of the 13th and 14th centuries. The palais du justice, the former residence of the prince-bishops dates from the 16th century, with the exception of the main front, which was rebuilt in the 18th century after a fire. Among modern buildings are the university and the museum of arms.

Liège is a leading centre of the Belgian iron and steel industries, and occupies an important position in a rich coalfield. The state rifle factories and gun foundries are at Herstal, a northern suburb; the principal steel works are at Angleur, and there are large zinc works. Iron is the chief industry of Seraing, the seat of the great engineering firm of Cockerill. Motor cars are manufactured, and there is a large cattle market. Pop. 169,566.

Liège came into prominence in the early days of the Great War. A German force 100,000 strong, opened the attack on the town on Aug. 5, 1914. Soon a number of the forts fell, the last two on Aug. 16, and Liège remained in German possession throughout the war.

LIEN (Fr. lien, tie). Term used in English law. It describes the right to retain property until some debt in claim is paid. Thus an innkeeper has a lien on a lodger's property until the bill for board and lodging is paid. A workman, e.g. a tailor who has mended a coat, may retain the thing he has been working on until the work is paid for. A carrier may retain the goods carried until his charges are met; and there are many other instances—notably a solicitor's lien on all his client's papers for his bill. But as a rule a lien cannot be claimed for a general balance of account.

LIEUTENANT. Title denoting a rank in the army, navy, and air service. In the British army a lieutenant is next below a

officer, or observer, in the R.A.F. A senior lieutenant in the Royal Marines is equivalent in rank to a lieutenant-commander, major, and squadron-leader in the navy, army, and R.A.F. respectively. In the army a second lieutenant is the lowest rank of officer. In the navy there are various branches of lieutenant.

LIEUTENANT-COLONEL. Title denoting a rank in the British army next below that of a colonel. A battalion of infantry, a regiment of cavalry, and a brigade of artillery is each commanded by a lieutenant-colonel. The corresponding rank in the navy is commander, and in the air force wing commander.

LIEUTENANT-COMMANDER. Title denoting a rank in the British navy. It is below commander and above lieutenant, and ranks with major in the army and squadron-leader in the R.A.F. There are engineer, surgeon, paymaster, and instructor lieutenant-commanders.

LIEUTENANT-GENERAL. In the British army the rank below that of full general. During the Great War it was given to officers in command of army corps. The equivalent rank in the navy is vice-admiral, and in the R.A.F. air-marshal. The rank is common to most armies.



Left to right, shoulder badges of lieutenant-colonel, lieutenant-commander, and lieutenant-general

LIFE. Life is the particular kind of activity which characterises man, animals, and plants. Living is a kind of activity, consisting of action and reaction between the organism and its environment, directed towards securing either self-maintenance or the continuance of the race. A living organism exhibits five forms of activity—movement, sensation, nutrition, growth, and reproduction. A typical living creature is in process of continual chemical change (metabolism), in which the complex substances called proteids or proteins are fundamentally involved. It is probable that living matter or protoplasm is a mixture of complex substances—especially proteids—which act and react among themselves and on surrounding material.

Death is the irrecoverable dissolution of the unity of the organism. There is violent death, when some catastrophe shatters an essential part of the bodily organization; death due to disease; and natural death, which often supervenes at the end of a period of senescence or after the crisis of reproduction. It may be said that in the case of many if not all of the protozoa, natural death does not occur. The Amoeba and the like reproduce in a very simple, physiologically inexpensive way, by

have the same immunity from natural death, since their processes of rejuvenescence are so perfect that senescence and death can be successfully evaded. See Animal; Biology; Cell.

LIFEBOAT. Boat for saving life from shipwreck. It is specially designed to weather storms in which other boats and vessels would founder. The lifeboat differs from the ordinary open boat in three main essentials. She is very much stronger in build. She is fitted with air cases and chambers and other devices which make her very buoyant, and she is able, through special self-acting non-return valves, to discharge in a few seconds any quantity of water which comes into her. All lifeboats are fitted with 10 to 16 oars and with sails, and the largest, which are nearly 50 feet long, can take nearly 100 persons on board. Many motor lifeboats are now in use.

LIFEBOAT INSTITUTION. This was founded in 1824 to provide lifeboats and equip stations with apparatus for saving life from shipwreck on the British coast. Known in full as the Royal National Lifeboat Institution, its offices are at 22, Charing Cross Road, London, W.C.

LIFEBUOY. Float, usually ring-shaped, for the support of persons in water. The common lifebuoy consists of a thick ring of canvas filled with cork, about 2 ft. 6 ins. in diameter and attached to a life-line. In use the ring slips over the head of the wearer, who rests with his arms over it.



1st Life Guards badge

LIFE GUARDS. Regiments of household cavalry in the British army. Consisting of the 1st and 2nd regiments, these originated in two troops of cavaliers who accompanied Charles II into exile. The life guards won distinction at Dettingen and Fontenoy, covering the retreat at the latter. They made historic charges at Waterloo, and later participated in the Egyptian War, 1882. In the South African War squadrons formed part of the composite regiment. In the Great War, as part of the cavalry corps of the expeditionary force, they especially distinguished themselves as dismounted troops at the first battle of Ypres, and also at the second, in 1915.

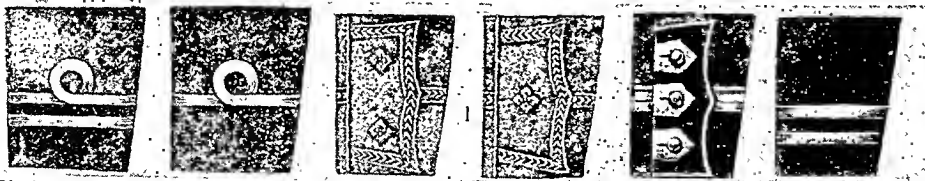


Life Guards. Corporal of horse

LIFFEY. River of the Irish Free State. It is formed by two streams which rise in the Wicklow mountains, not far from Enniskerry. Thence it flows through co. Kildare and past Kilkullen and Newbridge, and across co. Dublin. Having passed through the city of Dublin, it falls into Dublin Bay. Its length is 50 m.

LIFFORD. Co. town of co. Donegal, Irish Free State. On the left bank of the Foyle, 15 m. from Londonderry; it is practically a suburb of Strabane, across the river. Pop. 485.

This town gives its name to a title of viscount borne since 1781 by the family of Hewitt. It originated with Sir James Hewitt, lord chancellor of Ireland, who was made a baron in 1786 and a viscount in 1781. The family's connexion with Ireland is now slight.



Lieutenant. Badges of rank worn on the cuff. Left to right, lieutenant, navy; sub-lieutenant, navy; lieutenant, army; second-lieutenant, army; lieutenant, Royal Marines; right-lieutenant, Royal Air Force

captain; in the navy next below a lieutenant-commander; in the royal air force a flight-lieutenant is next below a squadron-leader. An army lieutenant corresponds in rank to a sub-lieutenant in the navy, and to a flying

dividing into two or more daughter units, so that reproduction has not the nemesis of exhaustion or even death, as in many complex animals. It may be that some simple animals like the fresh-water hydra and planarian worms

LIFT. Contrivance for lowering or raising passengers and goods. Lifts are worked by hydraulic power for heights up to 250 ft. and by electricity for all heights: 200 ft. a minute is considered a good average running speed; but in the skyscrapers of New York 500 ft. or more a minute is reached. The automatic electric lift dispenses with the services of an attendant. The passenger steps inside, closes the door, and presses a button carrying the number of the floor to which he wishes to go. The lift travels to the desired floor and then stops. By means of a stop button it may be brought to a halt anywhere. In some underground stations passengers are taken up and down by escalators. See Escalator.

LIGAMENT. Medical term for a band of tough fibrous tissue which connects bones together. The false ligaments are bands of thickened, peritoneum which hold the intestines and other viscera in place.

LIGATURE. Thread of catgut, silk, or other material employed for tying round blood vessels. Ligatures are employed in surgical operations, and their use was known in Roman times. Catgut and silk are the materials used.

LIGHT. Form of radiant energy or wave motion which travels through space and, acting on the eye, excites the sense of sight. Its principal characteristics are dealt with in the articles on polarisation, reflection, refraction, and spectroscopy. The real founder of the modern wave theory of light was Huygens (q.v.), who postulated the existence of a luminiferous ether filling all space, and held that vision is due to the excitation of waves or ripples on this medium by luminous matter, these waves being transmitted through the ether with a definite speed. Huygens' views were revived about 1800 by an English scientist, Young, who showed by experiment that two beams of light nearly parallel would cause interference where they crossed each other's track. (See Interference.)

Young's advocacy of the wave theory was taken up by Fresnel, Kirchhoff, Stokes, Thomson, and Rayleigh, who gradually elaborated the hypothesis until it gave a satisfactory account of all the well-known properties of light. This theory supplanted the older corpuscular hypothesis, formulated by Newton, which stated that light consisted of elastic corpuscles emitted by all luminous bodies. In 1862 Clerk Maxwell formulated his electromagnetic theory of light, which stated that light waves were set up by electromagnetic tressses. He predicted electromagnetic waves, and Hertz later obtained them and showed their fundamental identity with light. The theory is now extended to radiation of all wave-lengths, from the infinitely short gamma rays emitted by radioactive substances to the wireless waves, which may be many miles in length. All these waves travel with the same velocity as light, 186,000 miles per second. Light from the sun takes about eight minutes to reach the earth.

When a beam of sunlight is passed through prism it is spread out into a many-coloured and or spectrum, ranging from red through orange, yellow, green, blue, and indigo to violet. Visible rays beyond the red—infra-red rays—are heating rays; other invisible rays beyond

the violet—ultra-violet rays—have actinic or chemical effects. Differences in colour coincide with differences in wave-length: the infra-red rays being longest and the ultra-violet shortest in wave-length.

According to Planck's quantum theory the energy of radiation is emitted by a radiating body in certain definite fixed amounts or "quanta," the quantum being proportional to the frequency of the vibration. While this theory accords with certain physical phenomena, such as the photo-electric effect, it is in conflict with the wave theory of light. Scientists are divided on the existence of the ether, that is, in the form of the elastic solid postulated as the medium of wave propagation. Attempts have been made to prove its reality by measuring the passage of the earth through the ether, by means of certain optical devices, but the results have been inconclusive. According to Einstein's theory of relativity we cannot measure the earth's velocity, or determine absolute motion. Einstein's general theory of relativity states that space possesses physical qualities, and may thus fulfil functions ascribed to the ether. See Quantum Theory: Radiation; Relativity; Wave.

LIGHT BRIGADE. Name given to a brigade of cavalry when its regiments are divided into light and heavy. It is applied specifically to the brigade consisting of the 4th and 13th Light Dragoons, the 8th and 11th Hussars, and the 17th Lancers, that made the famous charge at Balaclava. See Balaclava.

LIGHT CRUISER. Fast, lightly armed or unarmoured type of warship. Usually they are from 430 to 460 ft. in length, displace about 5,500 tons, and carry 6-in. or 4-in. guns. Their functions are to undertake patrol duties or other work in which speed and quick manoeuvring power rather than fighting capacity are required, and to form screens for the battle squadrons. See Cruiser; Hawkins; Vindictive.

LIGHTER. Large flat-bottomed boat used in ports for loading or discharging vessels and for carrying cargo over short distances. It is sometimes fitted for steam propulsion, but more usually is towed from one point to another. On the inland waters of East Anglia considerable use is made of lighters, which are towed in strings by horses driven on a tow-path.

LIGHTFOOT, JOSEPH BARBER (1828-89). British theologian and prelate. Born at Liverpool, April 13, 1828, he was senior classic at Cambridge in 1851, and as fellow and tutor of Trinity he remained there for some years. In 1861 he was made Hulsean professor of divinity, in 1871 canon residentiary of S. Paul's, and in 1875 Lady Margaret professor of divinity. In 1879 he was chosen bishop of Durham. He died Dec. 21, 1889. Lightfoot's reputation is

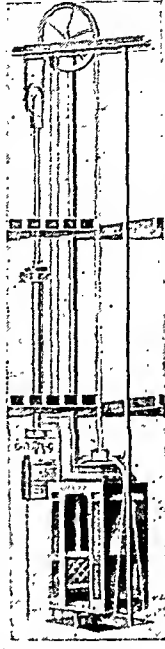
that of a theologian. He worked on the committee for the revision of the N.T., and defended its canon in articles in The Contemporary Review.

LIGHTHOUSE. Tower or high building erected, as a guide to navigation, on or near the coast or on a rock at sea, and provided with a light visible at a considerable distance. Most modern isolated rock lighthouses follow in general details the tower reared by Smeaton on the Eddystone, being circular in plan and tapering gradually upwards, from a cylindrical base, in a gentle curve ending just below the lantern gallery. A lighthouse of this type resists the most violent impact by sheer weight, independently of the grip which its foundations may have on the rock. It is therefore essentially a very solid structure, built up of stones which interlock and are interconnected, both vertically and horizontally, so firmly as to form what is in effect a monolith. The illuminant most commonly

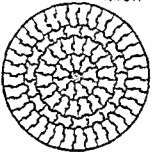
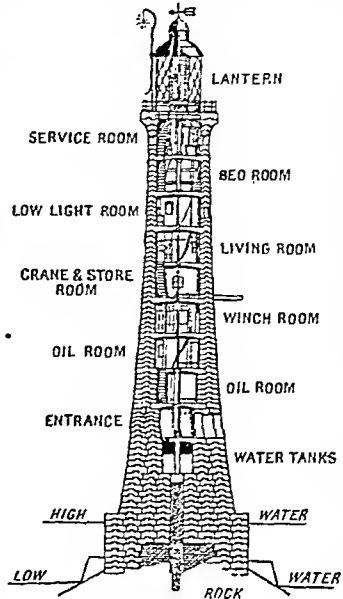
used in important isolated lighthouses is petroleum, vaporised by heat, mixed with air, and burnt in an incandescent mantle. In automatic lighthouses, beacons, and lightbuoys compressed acetylene gas is used, a clock or "sun valve" control shutting off the gas during daylight. Noted British lighthouses are the Eddystone (q.v.) and that at Beachy Head and on the Incecape Rock, etc.

LIGHTING. Wick lamps burning animal or vegetable oil have been used from the earliest times. Colza oil was introduced about the middle of the 18th century, and in 1783 Argand invented the burner with the circular wick and central draught, surrounded by a glass chimney. By 1860 petroleum began to displace all other lamp fuels. Coal gas was used for lighting by Murdock in 1792, and in 1886 the incandescent mantle, introduced by Welsbach, revolutionised coal-gas illumination. The electric arc lamp was developed round about 1845, and on the invention of the dynamo became a commercial proposition. Incandescent electric lamps with a filament of carbon were devised by Edison in 1879 and by Swan in 1880. Early in the 20th century the substitution of a metal filament and the use of gas-filled bulbs caused striking improvements in this form of lighting. See Acetylene; Gas; Lamp.

LIGHTNING. Flash produced by the discharge of electricity between two clouds or between a cloud and the earth. Lightning can be classified into forked, or zigzag, sheet, and ball lightning. The first form of flash gives the appearance to the naked eye of a blinding streak of light which occasionally throws off branches. Graphographically, it appears as a sinuous line, usually branched. Sheet lightning is caused by the glow from lightning below the horizon or at a considerable distance from the observer. It may also be some



Lift. Diagram showing principle of hydraulic lift



Lighthouse. Diagram of Eddystone lighthouse showing sectional elevation and plan of base



Lightning. Photograph of a ramified flash most branches of which did not reach the ground

form of discharge corresponding to the glow discharge from an electric machine. Ball lightning, a rare phenomenon, appears as a luminous ball moving slowly in the air, breaking up explosively on contact with some object. See Electricity; Meteorology; Thunder.

LIGHTNING ARRESTER. This is a device used to protect apparatus connected with aerial wires from lightning, by providing an easy means of escape to earth. As a lightning flash has very great electromotive force or intensity, it is able to leap gaps which ordinary working currents cannot cross. The arrester commonly used for telegraph circuits consists of a fine wire which fuses when the current is excessive, and a pair of plates separated by a very small air-gap. One plate is connected with the line, the other with earth.

LIGHTNING CONDUCTOR. Metal rod or series of rods of much greater conductance than the material to which it is attached. Its purpose is to discharge electrified bodies gradually or "silently," and if a sudden lightning flash discharge occurs it gives a comparatively easy passage to earth.

LIGHTS. Candles and lamps are used symbolically in churches and in divine worship. Their ceremonial use is associated with the idea of a visible light as a sign of the Divine Presence. Lights had a somewhat similar use in pagan ritual. In the Christian churches candles and lamps have been used symbolically since the 4th century.

LIGHTSHIP. Ship moored upon a shoal or at some other dangerous point near a coast, to give warning to shipping by showing a light at its mast-head. Many lightships are manned and the men relieved at regular intervals, but a number are unattended and automatic. See Goodwin Sands; Lighthouse.

LIGHT YEAR. In astronomy, the distance travelled in a year by light. It is equivalent to 5,876,068,880,000 miles. It is used as a unit for the distances of stars, etc.

LIGNIN OR XYLOGEN. Organic substance forming the essential constituent of woody fibres. It is the undissolved residue after boiling wood in water and alcohol. See Cellulose.

LIGNITE (Lat. lignum, wood). Partly formed coal, usually brownish in colour, whence its alternative name of brown coal. Lignite is really an intermediate stage between wood and coal, and shows the structure of the former. The powdered form is used as a pigment of an amber or sepia tone, under the name of Cologne earth. Dried and pressed into blocks, lignite is largely used as a fuel in many countries, particularly in Germany. Jet (q.v.) is a variety of lignite. See Coal.



Lignum nephriticum. Spray of *Pterocarpus indicus*

LIGNUM NEPHRITICUM (Lat. kidney wood) Wood celebrated from the 16th to the 18th century for its supposed medicinal properties, and for the wonderful colour effects produced by varying light upon water in which it had been steeped. Drinking cups were contrived from this wood, and when spring water had been allowed to stand for a

time in the cup it became blue and beautifully opalescent, showing wonderful colour changes and shadows. The water so treated took up the virtues of the wood, and if drunk was said to cure diseases of the kidneys and liver.

The exact nature of this wood was long in doubt, but in 1915 an American botanist proved that it was from two trees of the order Leguminosae, one a Mexican tree and the other a native of the Philippines.

LIGNUM VITAE (*Guaiacum officinale*). Tree of the order Zygophyllaceae. A native of Jamaica, it has a variegated, smooth bark. The leaves are divided into two pairs of oval leaflets, and the blue flowers grow in clusters. From the stem exudes the fragrant resin known as gum guaiacum, used medicinally in rheumatism, etc. The wood is hard and heavy, and much in demand by turners.



Lignum vitae. Foliage and flowers of the Jamaican tree

LIGNY. Village of Belgium. Standing 9 m. from Charleroi, it is famous for the battle fought between the French and Prussians in the Waterloo campaign, June 16, 1815. Despite a series of mistakes occasioned by his orders to Ney going astray, Napoleon succeeded in launching a violent attack with the troops of Gérard and Milhaud, which broke the Prussian forces under Blücher and won the day. Pop. 2,067. See Napoleon; Waterloo.

LIGURIA. Name of a division of ancient Italy, and of the modern division embracing the provs. of Genoa, Imperia, Savona, and Spezia. Its area is 2,038 sq. m. See Italy.

The Ligurian Alps, in N. Italy, form the most S. section of the Alpine curve. They lie between the Maritime Alps and the lower ground N.W. of Savona.

Ligurian Republic was the name given to the republic of Genoa as reconstituted by Napoleon. The French having fomented a feud between the democrats of Genoa and the pro-Austrian aristocrats, Bonaparte transformed the oligarchy into a moderate democracy under a directory on the French model, June 6, 1797, and later into a government by a senate, and a doge appointed by himself. The Ligurian Republic was annexed by France in 1805.

The Ligurian Sea is that portion of the Mediterranean Sea between Corsica and the mainland. Its N. section, bounded by Liguria, is the Gulf of Genoa. See Mediterranean Sea.

LI-HUNG-CHANG (1823-1901). Chinese statesman. Born in Ngau-hui, Feb. 16, 1823, he had a brilliant scholastic career and next distinguished himself as a soldier in the actions against the 'Tai-p'ing rebels. Viceroy of Hu-kwang, 1867-70, in the latter year he was transferred to Chih-li, became royal tutor, and turned his attention to fostering trade between China and the West.

On the death of the emperor T'ung-chi in 1875, Li placed Kwang-su, a child of five, on the throne, and himself became the leading spirit in the government. His endeavour to make China militarily efficient had, however, failed, and she suffered an utter defeat in the war with Japan, 1894-95. After a brief period as foreign minister, he successfully put down the Boxer rebellion. He died Nov. 7, 1901.

LIKIN. Name given to a tax on goods entering the various provinces of China. Although illegal, it was long levied by the heads of the various provinces in order to raise revenue. The settlement of 1928 provided for its abolition. See China.

LILAC (*Syringa*). Genus of shrubs of the order Oleaceae, natives of Asia and E. Europe. The common lilac (*S. vulgaris*), familiar in gardens, attains a height of about 20 ft. and has smooth, heart-shaped opposite leaves and small, fragrant flowers in pyramidal clusters, blue, red, violet-purple, or white in colour. Other varieties are Rouen lilac (*S. chinensis*), *S. emodi*, from the Himalaya, *S. josikaea*, from Hungary, and *S. japonica*. The wood of the common lilac is used in inlaying and turning. See illus. below.

LILBURNE, JOHN (c. 1614-57). English political agitator and pamphleteer. Born at Greenwich, in 1637 he was charged before the Star Chamber with circulating unlicensed books, and was whipped, pilloried, and imprisoned until 1640. From prison he began that pamphlet warfare which he carried on all his life. He rose to be lieutenant-colonel in the parliamentary army, but was one of the extremists known as Levellers (q.v.), and resented Cromwell's assumption of power. A courageous advocate of the rights of the people, he became an idol of the London populace. He died at Eltham, Aug. 29, 1657.

LILIENTHAL, OTTO (1848-96). German engineer and flying pioneer. Born May 23, 1848, at Anklam, he early turned his attention to the problem of flight, and was the first to demonstrate the superiority of curved or cambered aeroplane wings over flat ones in lifting power. He made a large number of glides, and his careful observations enabled the brothers Wright to initiate their first successful flying experiments. He was killed while gliding, Aug. 10, 1896.

LILITH. Female nocturnal demon in Babylonian and Jewish folklore. The name is connected with the Hebrew *lilätu*, night. Lilith is mentioned in Is. 34, 14 (R.V. marginal note). She was considered dangerous, especially to children, and was dreaded by Mesopotamian Jews until the 7th century after the death of Christ. The Rabbis held that she was Adam's first wife before her transformation into a demon.



Lilac. Flower clusters of the common variety. See above

LILLE. City of France, formerly capital of French Flanders. It lies on the river Deule, in flat country, 155 m. by rly. N.N.E. of Paris, and 66 m. S.E. of Calais. One of the greatest manufacturing towns of France, it is an important business centre and rly. and canal junction, and the seat of a bishop and a university. Its industries are in linen, cotton, oils, chemicals, printing, dyeing, rly. and other machinery, and there is a state tobacco factory. There is a large export trade, through Dunkirk and Calais. Pop. 201,610.

The town, largely of recent growth, is well laid out. On the Grande Place are the 17th

cent. Old Bourse and the picturesque Grande Garde, 1717. The Palais des Beaux Arts, 1892, contains one of the finest collections outside



Lille. Clock Tower of the new Bourse looking on to the Place du Théâtre

of Paris. Opposite stands the Préfecture, 1870, and a little to the W. the Porte de Paris, 1685. The churches include those of S. Maurice and Notre Dame de la Treille (the cathedral). On the outbreak of the Great War Lille was protected by twenty detached forts, but these were of antiquated type. In Oct., 1914, after some fighting, the city was entered by the Germans and a certain amount of damage was done, partly by the explosion of some ammunition in Jan. 1916. The Germans remained in possession for four years, during which time the Allies refrained from shelling a town of such importance to the economic life of France. The Germans evacuated it on Oct. 17, 1918.

LILleshall. Village in Shropshire, 3 m. from Newport. It is famous for the remains of Lilleshall Abbey, founded in the 12th century for Augustinian canons; these include the ruins of a fine Norman church.

LILLBURLERO. Tune ascribed to Henry Purcell. Set to doggerel verses of a party-political nature, it had a great vogue and influence during the Revolutionary period of 1688 onwards, especially in Ireland. Numerous references to the ballad and its influence are found in Macaulay's History of England, vol. II.

LILLIPUT (dialect Eng. lille put, little fellow). Imaginary island in the Indian ocean to which Gulliver, in Swift's Gulliver's Travels, journeyed on his first voyage. The inhabitants were people not six inches high, hence the word lilliputian has come to signify anything very small.

LILLY, WILLIAM (1602-81). English astrologer. Born at Discworth, Leicestershire, April 30, 1602, he left for London in 1620, came into money by marrying his master's widow, in 1632 turned his attention to astrology and medicine, and issued a number of prophetic pamphlets and almanacs. He was a friend of Ashmole, and died at Heresham, June 9, 1681. In addition to his astrological works and an autobiography, 1715, repr. 1832, he wrote The True History of King James I and King Charles I, 1651. He was the Sidrophel of Butler's Hudibras.

LILLYWHITE, FREDERIC WILLIAM (1792-1854). English cricketer. He was born near Goodwood, Sussex, June 13, 1792. Though exhibiting cricketing prowess as a boy he did not become a professional player until middle age, playing his first match at Lord's in June, 1827. He was engaged by the M.C.C. as a bowler in 1844, and was connected with the club until his death. From 1851 to 1853 he acted as cricket coach at Winchester College, and died of cholera in London, Aug. 21, 1854. He was the first notable round-arm bowler.

LILY (*Lilium*) Genus of bulbous herbs of the order Liliaceae, natives of the temperate regions of the N. hemisphere. The bulbs are composed of overlapping, fleshy scales. The stems are tall, erect, and leafy; the leaves, varying in shape, alternate or in whorls.

The large, showy flowers are funnel-shaped or somewhat bell-shaped, composed of six perianth-segments, with a channelled nectary along the central line of each. Most known species have been adopted as garden flowers, the most popular being the white, Madonna lily (*L. candidum*), a S. European species with pure white fragrant flowers in a cluster. The golden-rayed lily of Japan (*L. auratum*) is a great favourite in conservatories. *L. bulbiferum* (Europe) has red flowers and bears bulblets at the base of the leaves. *L. speciosum* (Japan) is white, sometimes spotted with red, or in some forms entirely rosy. *L. tigrinum* (China), the tiger lily, is orange-red spotted with purplish-black. See African Lily; Belladonna Lily; Bugle Lily; Guernsey Lily, etc.

LILY OF THE VALLEY (*Convallaria majalis*). Hardy perennial herb of the order Liliaceae. A native of Britain and N. Asia, it has oval leaves and bears white, bell-like, fragrant flowers on erect stems in spring. Lilies of the valley are invaluable in the shady corner of the town garden.



Lily of the Valley, flowers and leaf

have taken the place of the ramparts. The imposing cathedral, founded in 1535, was destroyed by an earthquake in 1746, but rebuilt. Among other prominent buildings are the university and the archiepiscopal palace. The city possesses zoological and botanical gardens, and an immense bull-ring. It is the commercial centre of the country and has many manufacturing establishments. These include paper, tobacco, soap, furniture, dye-stuffs, copper and iron articles, sugar, cocoa, and silverware. Pop., with suburbs, 316,000.



Lima, Peru. Western façade and main doorway of the cathedral

LIMAN VON SANDERS, OTTO VICTOR KARL (1855-1929). German soldier. Born at Stolp, Prussia, June 16, 1855, he entered the German army as a lieutenant of cavalry in 1874. In 1913 he attained the rank of general. In 1914 he was sent to Constantinople, and, having been appointed a Turkish field-marshal, was commander-in-chief of the Turkish forces opposing the Allies in Gallipoli in 1915. After the death of von der Goltz he directed the operations of the Turkish armies in the Middle East, and in 1918 was in chief command in Palestine and Syria, when Allenby conquered those countries. He published Five Years of Turkey (English edition, 1928), and died in Munich, Aug. 24, 1929.

LIMASOL. Seaport of Cyprus. It stands on Akrotiri Bay, on the S. coast, 37 m. S.W. of Larnaca, near the site of the ancient town of Amathus. The chief exports are carobs, wine, plaster of Paris, and salt. Pop. 13,302.

LIMBER. Term used for a two-wheeled carriage, with apparatus behind it for attaching to a gun or wagon. The limber also forms a box for the ammunition and a seat for the gunners or driver. To limber up means to attach the gun to the limber.

LIMBUS or **LIMBO** (Lat. fringe) Theological term for an intermediate state between death and the last judgement. Dante represents Limbus as the outer zone of hell (Inferno, canto 4). See Hell; Purgatory.

LIME. Name given to oxide of calcium, CaO. The term is loosely used, the oxide only being strictly called lime or quicklime; the hydroxide, formed by adding water, slaked lime; and the carbonate from which quicklime is prepared by heating limestone. Calcium oxide is a white powdery substance which readily

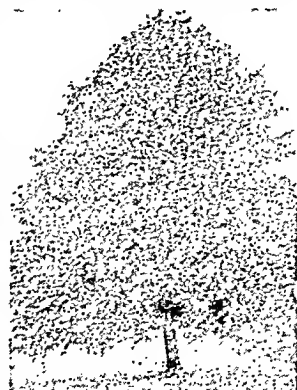
absorbs water with the evolution of heat, and finally crumbles into a soft, dry powder. It is widely used in agriculture, in particular when the soil is badly infested with insect pests or fungi spores. Calcium carbonate is broken down into lime and carbon dioxide by heating in lime-kilns. Mixed with sand and water, lime is used in the making of mortar. Other uses of lime are in the production of cane and other sugars; in the manufacture of glass and artificial building stones; in medicine as a liniment mixed with linseed oil; for the softening of water; in the preparation of caustic soda; in wood-pulping; in the manufacture of ammonia, etc. See Cement.

LIME (*Tilia*). Genus of deciduous trees. They are natives of Europe, N. Asia, and N. America. The trees have alternate heart-shaped leaves, and the sweet-scented flowers are yellowish-white or greenish-white. The broad-leaved lime and the small leaved lime are natives of Britain; and the common lime from Europe and the Caucasus is naturalised. The light, white, fine-grained timber is in demand for cabinet work, musical instruments, and carving. Linden is another form of the name. See Basswood.

LIME (*Citrus limetta*). Fruit of a small tree of the order Rutaceae. A native of Asia, it is round or oval, pale yellow, with a nipple-like prominence at the top, and has acid juice. It is usually known as sweet lime, to distinguish it from the West Indian lime, a variety of the citron (*C. medicus*), from which citric acid and commercial lime juice is obtained. See Citron; Lemon.



Lily. 1. Tiger Lily, *Lilium tigrinum*. 2. Madonna Lily, *Lilium candidum*



Lima. Tree in full leaf

LIMEHOUSE. District of London, in the metropolitan bor. of Stepney. Named from limekilns which once existed here, it is familiar as London's Chinatown. The Grand Union Canal here enters the Thames; Limehouse Cut connects with the river Lee through Poplar and Limehouse Reach divides the Surrey Commercial and the West India Docks.

LIMELIGHT. Intense brilliant white light produced by heating lime to incandescence in an oxy hydrogen or other high-temperature flame. The flame is directed against a slowly revolving cylinder of lime, the latter becoming volatilised by the intense heat. Though limelight is still employed in magic lanterns, and for stage effects, etc., it is largely superseded by the electric arc light. See Magic Lantern.

LIMERICK. County of the Irish Free State. In the prov. of Munster, its area is 1,064 sq. m. It is bounded by the Shannon on the N., and by Cork, Kerry, Clare, and Tipperary. Much of the county is level, but in the S.E. are the Galty Mts., with Galtymore, over 3,000 ft. high. It is served by the G.S. Rlys. Agriculture is the chief industry, and much of the land is regarded as the most fertile in Ireland. Cattle, sheep, and pigs are reared, and there are a number of dairy farms. Limerick was part of Thomond in the Middle Ages it had many monasteries. Pop. 100,895

Earl of Limerick is an Irish title borne since 1803 by the family of Pery. The family seat is Dromore Castle, co. Limerick, and the earl's eldest son is known as Viscount Glentworth.

LIMERICK. City, seaport, and county town of co. Limerick, Irish Free State. It stands on both banks of the Shannon, 129 m. from Dublin by the G.S. Rlys. The old buildings include the Protestant cathedral of S. Mary, dating from the 12th century, and the castle. As a port Limerick's pre-eminence is due to its position where the Shannon becomes navigable, while it is connected with the interior by canals. Flour milling, bacon curing, and cream making are extensively carried on, and the city is a centre of the Irish butter trade. Limerick has long been noted for its lace. Pop. 39,448

LIMERICK. Form of nonsense verse in five lines. The origin of the name is doubtful. An example is:

There was a young lady of Wilts
Who walked up to Scotland on stilts,
When they said it was shocking
To show so much stocking,
She answered, "Well, what about kilts?"

LIMESTONE. Rock consisting chiefly of lime carbonate. It usually contains varying amounts of silica, alumina, carbonate or oxide of iron, phosphate of lime, magnesium carbonate, etc. Pure limestone is white, but impurities give it a large variety of colours, grey, blue, black, brown, and red, and vary its texture from fine to coarse. Most of the varieties of limestone are used for building purposes, cements, and for road materials.

Marbles, chalks, corals, deep-sea ooze, marls, and dolomite are all kinds of limestone.

Limestone rocks are found in every geological formation and occur in masses hundreds of feet thick. They contain many fossil remains. The picturesque chalk cliffs of the British coasts are limestones. See Cement; Lime; Marble; Marl.

LIMNAEA (Gr. limnē, lake). Genus of gastropod molluscs found in fresh water and known as water or pond snails. There are six British species, which include most of the large water snails. The shell is long, spiral, and horny, and the animal must come at intervals to the surface in order to breathe. It feeds upon aquatic vegetation.

LIMOGES. Town of France. On the right bank of the Vienne, 251 m. by rly. S.S.W



Limnaea. Shell of *Limnaea stagnalis*



Limpet. Shell of the common limpet, *Patella vulgata*

LIMOUSINE. Type of automobile body. The roof is an immovable part of the body and extends over the front seat, occupied by the driver. See Motor Car.

LIMPET. Group of marine gastropod molluscs in which the shell is conical or tent-shaped. There are many species, found in most parts of the world, some being common around the British coasts. The animal adheres tightly to a rock by means of its foot, which acts like a sucker: and moves about and grazes on minute vegetation when the tide is up, always returning to the same spot before the tide ebbs. Limpets are used for bait, and in some places for food. See Mollusc.

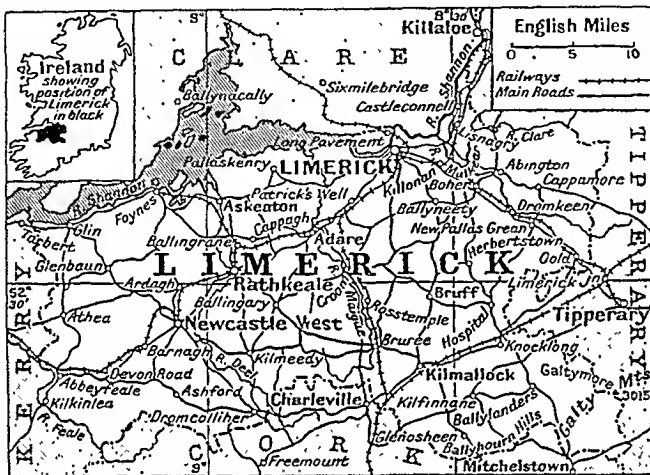
LIMPOPO or CROCODILE. River of S. Africa. It rises in the S.W. portion of the Transvaal, and runs 800 m. to the sea, which it enters 100 m. N.E. of Delagoa Bay. It forms the N. and W. boundary of the Transvaal. The main difficulties of navigation are the Tolo Azimé Falls near the Transvaal border and the low level of water during the dry season. The Alfred Beit bridge over the river near Messina was opened in 1920.

LINACRE, THOMAS (c. 1460-1524). English scholar. Educated at Canterbury and Oxford, he was soon interested in the new learning. He studied medicine in Italy, and in 1509 became physician to Henry VIII. In 1520 he became a priest, and died Oct. 20, 1524. Linacre was a ripe Greek scholar and the founder of the London College of Physicians.

LINCOLN. City, county borough, and the county town of Lincolnshire. It stands on the Witham, 130 m. from London, and is served by the L.M.S. and the L.N.E. Rlys. The cathedral is one of the most magnificent in England. It was built chiefly in the 13th century, and since 1920 many repairs have been carried out. The library was built by Wren. Parts of the castle built by the Normans remain. More complete is the Roman Gate known as the Newport Arch. The Jews' House and the house of Aaron the Jew are examples of early domestic architecture. The hall of S. Mary's Guild, popularly called John of Gaunt's stables, is of the 12th century. S. Peter at Gowts and S. Mary le Wigford are old churches. Of the city's gates the exchequer gate and the Pottergate still stand. Above another gate, the Stonebow, is the guildhall. The city and county museum is partly housed in the old priory of the Grey Friars. The Usher Gallery, opened in 1927, has a fine collection of porcelain and miniatures.

Lincoln is an agricultural centre and has works for making agricultural machinery. Other machinery is made, and there are flour mills and a large corn market. Important race meetings are held. Pop. 65,550.

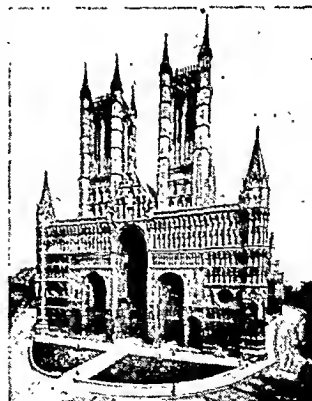
LINCOLN, ABRAHAM (1809-65). American statesman. Born in Kentucky, Feb. 12, 1809, he was the son of an unprosperous farmer, the descendant of an emigrant from England. The family moved from place to place, but Abraham managed to get a little education.



Limerick. Map of the agricultural county in the province of Munster

of Paris, it is an important rly. junction, and has several porcelain factories. The cathedral of S. Etienne, founded in 1273, has a 14th cent. choir and a 16th cent. N. portal and roof loft. Other churches are those of S. Michel-des-Lions and S. Pierre-du-Queyroix. In the 16th century Limoges was famed for its magnificent enamel work. It was once capital of the province of the Limousin. The hard paste chinaware manufactured at Limoges has a hard, tough, semi-transparent body, brilliant glaze, and remarkably good colouring. It dates from about 1764, after the discovery of kaolin. Pop. 90,187. See Enamel; Pottery

LIMONITE or BROWN HAEMATITE. Hydrated sesquioxide of iron, an important source of the metal. Limonite is usually found mixed with other minerals, e.g. pyrites, but pure it has a metallic black to brown colour. It often occurs in clay soils, in meadows and bogs, and in fresh-water lakes is deposited as a brown slime on the bottom. In the latter form, and better known under the name of bog ore, it is found in Sweden and Norway. As gossan ore it occurs in the W. of the United States. See Iron; Ochre.



Lincoln Cathedral, showing the two west towers in the late Decorated style

In 1830 he settled in Illinois where he was in succession a labourer, a soldier serving against the Indians, a storekeeper, and a surveyor. He made two journeys down the river to New Orleans. Later he became a lawyer and began to practise at Springfield.

Lincoln's public life began in 1834, when he was elected to the legislature of Illinois, where he protested against slavery and made his name as an orator. He remained a member until 1842, the year in which he married Mary Todd. In 1846 he was elected to Congress as a Whig, but he declined to stand at the end of his term in 1850. In 1856 he came to the front again, this time as a leader of the new Republican party, and his verbal duels in 1858 with his powerful antagonist S. A. Douglas are landmarks in American history.

Lincoln failed in secure election as vice-president of his country in 1856 and as senator in 1858, but in 1860 he was the party's candidate for president. He was elected, and took office in 1861 on the principle that slavery was wrong, though he opposed any attack on it by outsiders where it was already lawful. He carried on the war against the seceding states, and at the end of 1862, by proclamation, he emancipated all slaves within the reach of the northern armies.

In 1864 Lincoln was re-elected president, and he passed his remaining months in preparing for a reconstruction of the South. The war ended with Lee's surrender on April 9, 1865, and on April 14 Lincoln was shot in the theatre at Washington by an actor named Booth. He died next morning.

In 1919 G. G. Barnard's statue of him was unveiled in Platt Fields, Manchester, and in 1920 a replica of the figure by A. St.

Gaudens in Lincoln Park, Chicago, was unveiled opposite Westminster Abbey, London. In 1922 a magnificent memorial, erected by authority of congress, was dedicated in Washington.

Innumerable tongues told tales of Lincoln's shrewdness and compassion. His melancholy and his humour became blended in a vivid but indescribable portrait for popular imagination. Soon the scholarly world discovered the charm and perfection of his restrained oratory. Later study revealed a profundity in his thought, as, for instance, in the human wisdom of his unique feeling towards the negro, his inferior and his equal. See American Civil War; consult also Life, Lord Charnwood, 1916.

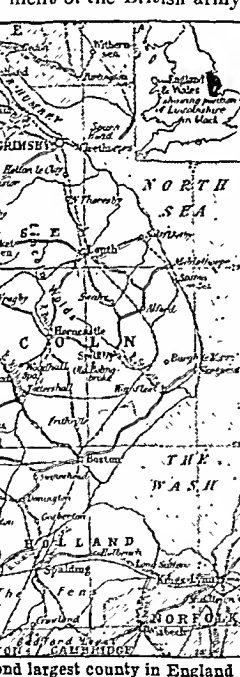
LINCOLN JUDGEMENT. Decision on ritual by the archbishop of Canterbury. In

1888 a prosecution was instituted against Edward King, bishop of Lincoln, for eight ritual acts alleged to be illegal. The case was tried by Arch. Benson, who pronounced all the acts to be legal save the sign of the cross in benediction and certain manual acts.

LINCOLNSHIRE. County of England. For 110 m it lies along the E. coast between the Humber and the Wash. Its area is 2,665 sq. m., and it is divided into three administrative counties: the parts of Lindsey in the N.; the parts of Kesteven on the S.W. and the parts of Holland on the S.E. The county town is Lincoln. Other places are Grimshy, Boston, Horncastle, and Grantham. Watering places include Cleethorpes and Skegness on the coast and Woodhall Spa inland.

The surface is mostly flat, and in places along the coast marshy. In the S.E. are fens forming part of the Bedford Level, and in the N.W. the so-called Isle of Axholme is a fenny district. In the N.E. the Wolds, a range of chalk hills, extend for 40 m. The county is drained by the Trent, Witham, Welland, and by a network of canals and dykes, and is served by the L.M.S. and L.N.E. Railways. Lincolnshire is almost wholly agricultural. It is noted for its herds of cattle, sheep, and horses, while much wheat and barley are grown. There is a good deal of fishing, and in the N. iron ore is mined. Pop. 602,202.

LINCOLNSHIRE REGIMENT. Regiment of the British army. Formerly the 10th Foot, it was raised in 1685, and first saw active service in Flanders in 1690-96. It was in the Netherlands from 1701 to 1713, and participated in all Marlborough's campaigns. After serving with Aheromby in Egypt, in 1801, where it earned the Sphinx and Egypt on the colours, it fought in the Peninsular War, the Sikh War of 1846, the Indian Mutiny, the Sudan campaign in 1898, and the South African War. The regiment had a distinguished record in the Great War. The 1st battalion formed part of the expeditionary force in August 1914. The regimental depot is at Lincoln.



Lincolnshire. Map of the second largest county in England

LINCOLN'S INN. Third of the London inns of court. Between Chancery Lane and Lincoln's Inn Fields, W.C., on the site of the town house of Henry de Lacy, third earl of Lincoln, it became an inn of court about 1312. The Old Hall, dating from 1506, was once the Chancery Court. It was restored in 1927-28, and reopened by Queen Mary, Nov. 1928. The New Hall, 1843-45, contains a library of 70,000 volumes. The chapel, built over a crypt, was designed by Inigo Jones. The gatehouse in Chancery Lane is dated 1518, bears the arms of Sir Thomas Lovell, and was restored in 1899.

The gardens in Lincoln's Inn Fields, W. of the Inn, a large square laid out by Inigo Jones in 1618, were acquired by the London County

Council in 1895. Notable buildings in the square are the Royal College of Surgeons and Sir John Soane's Museum.

LIND, JOHANNA MARIA, known as Jenny Lind (1820-87). Swedish vocalist. Born at Stockholm Oct. 6, 1820, she made her debut at the Court Theatre there in 1838. After studying under Garcia in Paris, she visited the big cities of Europe and America with great success, being especially popular in London, where she first appeared in 1847. After 1849 she appeared only in oratorios and concerts. She died at Malvern, Nov. 2, 1887.



Jenny Lind, Swedish singer. From a bust by J. Durham

LINDAU, PAUL (1839-1919) German dramatist and novelist. Born at Magdeburg, June 3, 1839, he became a newspaper correspondent in Paris, afterwards doing journalistic work at Düsseldorf and elsewhere. He founded and edited two magazines, *Die Gegenwart*, 1872, and *Nord und Süd*, 1877. In 1895 he became connected with the theatre at Meiningen, and he was afterwards manager of theatres in Berlin. Long before this Lindau had made his name as a writer. He began in 1868 with his play *Marion*; others were *Maria und Magdalen*, *Die Erste* (the first), *Der Abend* (the evening), etc. He wrote a number of novels and other works. He died Jan. 31, 1919.

LINDBERGH, CHARLES A. (b. 1903). American airman. Of Swedish-American parentage, he took up flying in 1921. He acted as pilot in the U.S. Air Mail Service, and was flight commander of the Missouri National Guard. Hearing of Raymond Orteig's offer of \$5,000 for the first flight from New York to Paris, on May 20, 1927, Lindbergh set forth on a monoplane alone, and arrived on May 21 at Le Bourget aerodrome, Paris, after a flight of 33 hours 50 minutes, being the first aviator to cross the Atlantic alone. Lindbergh, who later flew to London, received the Legion of Honour from the French president and the Air Force Cross from King George. See Atlantic Flights.

LINDISFARNE. Alternative name of Holy Island, Northumberland.

Lindisfarne Gospels is the name given to the finest extant Early English illuminated MS. of the Gospels. It is an example of Anglo-Celtic illumination at its best. The MS. is in the British Museum. See Holy Island.

LINDLEY, NATHANIEL LINDLEY, BARON (1828-1921). British lawyer. Son of John Lindley (q.v.) he was born at Acton, Nov. 29, 1828. Called to the bar in 1850, he began to



Lincoln's Inn, London. Gateway looking towards Chancery Lane

practise in the chancery court, but he made his name by writing the standard works on the law of partnerships and the law of companies. In 1872 he was made a Q.C., and was appointed a judge in 1875. In 1881 he joined the court of appeal; in 1897 was made master of the rolls, and in 1900 a lord of appeal. He died Dec. 11, 1921.

LINDLEY, JOHN (1799-1865). British botanist and horticulturist. Born near Norwich, Feb. 5, 1799, he was employed in

1821 by the Royal Horticultural Society to superintend the laying out of their new garden at Chiswick, and this led to his becoming secretary. In 1829 he published a Synopsis of the British Flora, and in 1830 An Introduction to the Natural System of Botany. He was appointed professor of botany in University College, London, in 1829, and to the Apothecaries' Company in 1835. The most important of his publications is The Vegetable Kingdom, 1846. He edited The Botanical Register for 19 years and The Gardeners' Chronicle for 25 years. He died Nov. 1, 1865.

LINDRUM, WALTER. Australian billiard player. Known as the left-handed champion of Australia, after creating a number of records in his own country, in 1928 he played in New Zealand, where at Wellington he set up a record break of 1,461. In 1930 he defeated Willie Smith, the former English champion, in London. His winning margin of 21,825 points constituted a record in billiard contests. He made a farewell appearance on April 7, 1930, before returning home. See Billiards.

LINDSAY. Town of Ontario, Canada. It is on the Scugog river, 69 m. N.E. of Toronto, and is served by the C.P.R. and C.N.R., being a junction on the latter. The industries include saw-mills and the manufacture of agricultural implements. Pop. 7,620.

LINDSAY, SIR RONALD CHARLES (b. 1877). British diplomatist. Born May 3, 1877, a son of the earl of Crawford and Balcarres, he entered the diplomatic service in 1895. He served as attaché in several foreign capitals, going to Egypt in 1913 as under-secretary for finance. He remained there until 1919. Under-secretary at the Foreign Office 1921-24, from 1926-28 he was ambassador in Berlin, and in 1930 he went as ambassador to Washington. The first of Lindsay's knighthoods dates from 1925.

LINDSEY. One of three parts into which Lincolnshire is divided. The N. part of the co., it covers nearly 1,000,000 acres, and is more than half the whole. Being an administrative co., it has its own co. council. For parliamentary purposes it is divided into four divisions, Brigg, Gainsborough, Horncastle and Louth. Its chief town is Lincoln. See Lincolnshire.

Earl of Lindsey is a British title borne since 1626 by the family of Bertie (pron. Barty).

LINEN (Lat. *linum flax*). Flax fibre in a manufactured form. The fibre is derived from the stalks, and forms the bast beneath the bark. It is recovered by one or other of the processes known as retting, a putrefactive operation which weakens the resin which binds the fibre to the straw. As done in Ireland, the process consists in immersing the dried stalks in ponds. Retted flax passes from the fields to the flax or scutch mills. The broken and brittle woody matter is removed by scutching.

In the flax-spinning mill the raw material is combed and hackled. In course of hackling the short fibre, or tow, is removed from the long, or line and the fibres are laid parallel. Tow makes an inferior yarn, largely used for towelling. Line suitable for fine purposes makes handkerchiefs, lawns, cambrics, and fine damask. Coarser qualities make the heavier sheetings and cheaper tablecloths. See Flax; Loom; Spinning; Weaving.

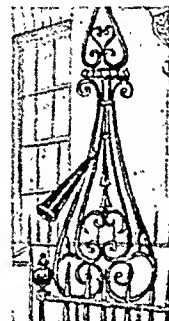
LING (*Molva vulgaris*). Fish allied to the cod, found in the seas of Northern Europe. It is more closely related to the eel-pout (q.v.), varies from four to six feet in length, and in colour is grey or black on the back and greyish white below. It feeds upon smaller fishes and is prolific. It is a food in S. Europe, chiefly eaten dry cured. The oil from its liver is an adulterant of cod liver oil.



Ling. Specimen of the N. European fish

LINGARD, JOHN (1771-1851). British historian. Born at Winchester, Feb. 5, 1771. Lingard's fame rests entirely on his History of England, the one work of its kind written by an English Roman Catholic. It narrates the history of England from the earliest times to 1688, but has been superseded to some extent by the results of later research. Lingard also wrote The Antiquities of the Anglo-Saxon Church, 1806 3rd ed. with numerous additions 1845. He died at Hornby, July 17, 1851.

LINGFIELD. Village of Surrey. It is 10 m. from Reigate, on the Southern Rly. The river Eden separates it from Kent. The church of SS. Peter and Paul was rebuilt by Lord Cobham in the 15th century. Races are held here. Pop. 4,905.

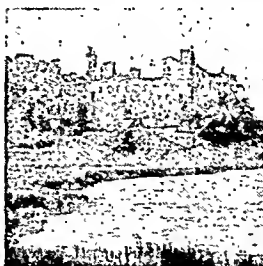


Link extinguisher outside a house

LINK. Torch made of tow dipped in pitch. Before the illumination of the streets these were used for lighting pedestrians on their way. Occasionally in front of old houses may still be seen the extinguishers used to put out the lights. Link boys were men or boys who, for a fee, carried links to guide persons.

Link. Measure of length. It is the hundredth part of a chain, and measures 7.92 ins.

LINLITHGOW. Burgh and county town of Linlithgowshire (West Lothian). It is 17 m. W. of Edinburgh, on the L.N.E. Rly. The chief church is the 16th-century S. Michael's, with a fine tower and other beautiful features. Secular buildings include the old town house, the modern town hall, and the county hall. The Cross Well is a stone fountain, rebuilt early in the 19th century. The burgh is famous for the ruins of its palace, long a royal residence, overlooking Linlithgow Loch, where both James V and his daughter Mary were born. The town has manufactures of paper and leather; also boots and shoes. Pop. 3,882.



Linlithgow. Ruins of the 15th cent. Scottish royal palace

LINLITHGOW, MARQUESS OF. Scottish title borne since 1902 by the family of Hope. John Adrian Louis Hope, 7th earl of Hopetoun (1860-1908), went to Australia in 1900 as first governor-general of the Commonwealth, and in 1905 he was secretary for Scotland from Feb. to Dec. He was made marquess of Linlithgow in 1902. His son Victor (b. 1887) became the 2nd marquess. He was civil lord 1922-24, and in 1923 presided over the committee that inquired into

the prices and distribution of agricultural produce. His seat is Hopetoun House, Linlithgowshire, and his eldest son is called the earl of Hopetoun.

LINLITHGOWSHIRE. County of Scotland. The western of the three Lothians it is also known as West Lothian. Its area is 120 sq. m., and it has a coastline of about 17 m. on the Firth of Forth. The surface varies from the low coast belt to the undulating and hilly region of the interior, rising to 1,000 ft. The only rivers are the Avon and the Almond. Agriculture is the staple industry, oats being the chief crop, and there are many dairy farms. There is much coal and iron ore in the county. Oil is extracted from shales. The shire is served by the L.M.S. and L.N.E. Rlys., and by the Union Canal. The chief town is Linlithgow; others are Broxburn, Borrowstounness, or Bo'ness, Bathgate, and S. Queensferry. Pop. 84,300.

LINNAEA BOREALIS. Small creeping evergreen shrub of the natural order Caprifoliaceae. A native of Europe, N. Asia, and N. America, it has thread-like stems, distant pairs of toothed, oval, leathery leaves, and tiny, sweet-scented, pink flowers somewhat bell-shaped with five lobes at the mouth. It grows in pine forests. Gronovius named it after Linnaeus, who adopted it as his badge. The Laplanders make a decoction of the flowers and use it as a remedy for rheumatism.

LINNAEUS, CARL (1707-78). Swedish botanist, called also Carl von Linné. Born at Reasult, Sweden, May 23, 1707, he soon showed a preference for botany, and this led to his study of medicine. He laid the foundation of his important works, *Bibliotheca Botanica*, 1736, and *Genera Plantarum*, 1737, while assistant professor of botany at Upsala. He made botanical explorations of Lapland and Dalcarlia. Graduating as M.D., he practised as a physician at Stockholm. From 1741 until his death, Jan. 10, 1778, Linnaeus was professor of botany at Upsala.



Carl Linnaeus, Swedish botanist

Linnaeus produced many works, covering the whole range of animal and vegetable life. By his adoption of the binomial system of nomenclature he helped to make natural history more exact and intelligible. His artificial system for the classification of plants ranged species into orders and classes according to the number of stamens and pistils.

LINNEAN SOCIETY. This is a British scientific society founded in 1788, "for the cultivation of the science of natural history in all its branches." It possesses the collections and library of Linnaeus, and is located at Burlington House, Piccadilly, London, W.

LINNELL, JOHN (1792-1882). British painter and engraver. Born in London, June 16, 1792, he studied at the R.A. schools and under John Varley. In 1812 he joined the Society of Painters in Oil and Water Colour. A portrait painter in his early career, from 1847 he devoted himself to landscapes, chiefly in oils. He died at Redhill, Jan. 20, 1882. Of his works may be cited his Noonday Rest, in the Tate Gallery, London.

LINNET (*Linota cannabina*). Familiar British song-bird of the finch group found in most parts of Europe, and commonly met with on waste land where gorse grows. The plumage is a warm brown above, the male with crimson forehead and chest, and brownish-white below. The linnet feeds mainly on seeds, and derives its name from its fondness for linseed.



Linnet, a male of the British song-bird

LINNHE. Sea loch of Argyllshire and Inverness-shire. It extends N.E. from the Firth of Lorne to Corran Narrows, and thence as Lower Loch Eil to Fort William. Its length is 30½ m. and its greatest breadth 8 m.

LINOLEUM. Type of floor covering manufactured from oxidised linseed oil mixed with gum resins, cork dust, and various pigments. This mixture forms a stiff paste which is spread over linen fabric to a thickness of $\frac{1}{8}$ to $\frac{1}{4}$ of an inch. Patterns are printed upon it, or, in inlaid linoleum, different coloured compositions are pieced together to form the pattern and passed through heated rollers. There are large linoleum factories at Lancaster and Greenwich. See Oilcloth.

LINOTYPE. Machine for printing. It casts a line of type from a previously assembled line of matrices which have been collected by the depression of finger-keys on the typewriter principle.

The working consists of three main functions—setting up the matrices, casting the type, and the return of the matrices to their magazines. Each time a key is depressed it permits a matrix bearing a corresponding character to escape out of an inclined magazine. The matrices constituting the words are divided and spaced by steel wedges which fall into the assembling line between the words and are afterwards forced upwards until the line is accurately spaced. The combined line of matrices and space wedges is now transferred to a recessed chamber in a revolving wheel.

Into this molten metal is pumped against the face of characters on the line of matrices from a gas-heated metal pot, the metal solidifies on contact, and after the ragged edges of the metal have been trimmed away a composite "line-o'-type" is produced. It bears upon its upper edges characters to print an entire line. After a cast has thus been taken from the assembled matrices, they are automatically distributed to their own compartments. A German invention, it was developed in the United States and was introduced into England in 1889. See Printing.

LINSEED. Dry ripe seeds of *Linum usitatissimum*, the flax plant. Linseed is mainly used for poultices, and linseed oil is sometimes applied to burns. The oil is prepared by crushing and pressing the seeds. It is largely used in the manufacture of paints and varnishes, and has the property of drying quickly on exposure to the air. This property is greatly increased by boiling it, either alone or with white lead. Further boiling turns the oil into a sticky substance used in the preparation of printing inks.

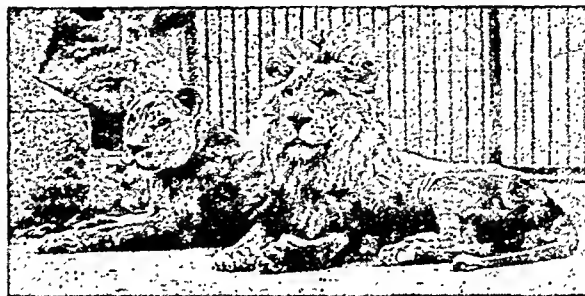
Linseed cake is an artificial feeding stuff, of especial value for young and fattening stock, made from linseed after most of the oil has been extracted.

LINTHWAITE. Urban dist. of Yorkshire (W.R.). It stands on the Colne, 3 m. from Huddersfield. The principal industry is woollen manufacture. Pop. 10,100.

LION (*Felis leo*). Largest member of the cat genus. It now occurs only in some parts of Africa and S.W. Asia, though once common

in Europe. A lion may measure 9 ft. from the nose to the tip of the tail, and weigh about 500 lb. The hair is tawny yellow, varying considerably in tone; the mane may be black or brown; and the tuft of the tail is often black. The cubs are spotted.

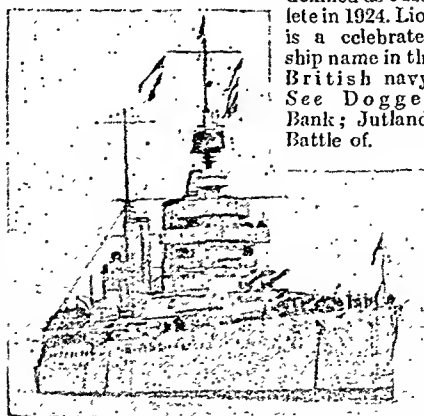
Only one species is recognized by zoologists, though there are several local races, as the Indian, Persian, Masai, Senegal, and Somali lions. Lions are found both in the forests and the open country, and are nocturnal in their habits. The food consists of antelopes and other mammals, for which the lion lies in wait near the drinking places to which these animals resort. As a rule the lion mates for life, and one litter of cubs is produced each season, usually consisting of two or three. The Indian lion, usually rather smaller than the African variety and less heavily maned, is now extinct except in the Gir forest of Kathiawar, where it is to some extent preserved.



Lion. Heavily maned African lion with his mate in captivity
Gambler Bolton, F.Z.S.

THE HERALDIC LION. This is a conventional representation of a fierce beast with shaggy mane and long tufted tail. The principal positions are: (1) rampant, or rearing on its hind legs; if full faced, the word guardant is added; if looking backwards, regardant; (2) passant, walking past, with its right paw lifted; if full faced it is passant guardant, if looking backward, passant regardant.

LION. British battle-cruiser, the flagship of Sir David Beatty at Jutland and earlier fights. She was 660 ft. long, 88 ft. in beam, displaced 26,350 tons, and had engines of 70,000 h.p., giving her a speed of 31 knots. She was condemned as obsolete in 1924. Lion is a celebrated ship name in the British navy. See Dogger Bank; Jutland, Battle of.



R.M.S. Lion. British battle-cruiser on which Sir David Beatty flew his flag in the battle of Jutland

LIP. Muscular fold, two of which surround the orifice of the mouth.

Lip-reading is the art of understanding the speech of others by interpreting the visible movements of the speaking mouth, and is the chief means of communication employed in the education of deaf children taught on the oral method. See Deaf and Dumb.

LIP-ORNAMENT. Object attached to the human lip, usually by perforation. Limited

to some American and African peoples, they are made of stone, bone, shell, leather, wood, or metal, and were believed to guard the portal of the mouth against malignant spirits.

LIPARI ISLANDS. Group of volcanic islands belonging to Italy, about 20 m. from the N. coast of Sicily. Area, 46 sq. m. All are mountainous; Stromboli (qv) is actively volcanic, and Vulcano intermittently volcanic. Lipari, the largest island, contains the capital, Lipari. Currants, olives, etc., are raised. Pop. 12,704.

LIPHOOK. Village of Hampshire. It is 8 m. N.E. of Petersfield, on the Southern Rly., and during the Great War was a military centre. Wolmer Forest is near.

LIPOMA (pl. lipomata, Gr. lipos, animal fat). Tumour composed of fibrous tissue infiltrated with fat. Lipomata vary in size from that of a pea to that of an orange, and most often originate in the tissues immediately beneath the skin, most frequently on the trunk.

LIPPE. State of Germany, before 1918 a principality, now a republic. In the N.W. of the country, it is almost surrounded by Prussian territory, and besides the main block has three small enclaves. It takes its name from the Lippe, although that river does not flow through it. The country is watered by the Weser, the Werre, and other of its tributaries, and is hilly, with much forest. Beetroot, oats, barley, and potatoes are grown, and horses and cattle reared. The chief town is Detmold. Its area is 470 sq. m.; pop. 163,648.

Before 1918 Lippe was governed by a prince, assisted by a house of representatives (landtag) of 21 members and a ministry of three. After the revolution of Nov., 1918, the state became a republic.

LIPPI, FRA FILIPPO (1412-69). Italian painter. The son of a butcher, Tommaso Lippi, he was born at Florence. He was the pupil of Lorenzo Monaco, though greatly influenced by Masaccio and Fra Angelico.

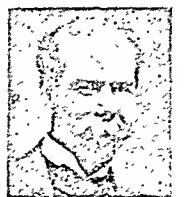
Among his best known works are the Nativity in the Academy at Florence; a Madonna and Child at Berlin; the Coronation of the Virgin in the Lateran, Rome; and the Annunciation, and the S. John the Baptist with six other Saints in the National Gallery, London. Botticelli was his pupil.

His son, Fra Filippino Lippi (1460-1504), studied chiefly under Botticelli. There are important frescoes by him in the Brancacci chapel of the Carmine and the Filippo Strozzi chapel of S. Maria Novella, Florence (1502). He died at Florence April 15, 1504.

LIPTON, SIR THOMAS JOHNSTONE (b. 1850). British merchant and sportsman. Born in Glasgow, May 10, 1850, of Irish parentage, he went to the U.S.A. about 1865, and there worked as a clerk, a tramcar driver, and on some rice plantations. In 1876 he opened a grocer's shop in Glasgow, which developed into the extensive concern known as Lipton's, Ltd., with interests in the U.S.A. and Ceylon, as well



Filippino Lippi, Italian painter
Self-portrait



Sir Thomas Lipton, British merchant
Elliott & Fry

as throughout Great Britain. In 1930 it was merged in Allied Stores. In 1898 he was knighted, and in 1902 made a baronet. Lipton was known for his attempts to win the America Cup (q.v.) and his donations to charity.

LIQUATION. In metallurgy, the operation of extracting a metal from its ore by heating the ore in a furnace to a temperature just sufficient to make the metal liquify. It refers also more particularly to a phenomenon presented when alloys cool from a molten state. When a mass of mixed metals cools there will be a portion which will solidify first, and in solidifying will throw out some other parts of the mixture.

LIQUEFACTION. Change of state of a substance from a solid to a liquid or from a gas to a liquid. The term has been more particularly used in recent years in connexion with the liquefaction of gas.

LIQUEUR. Aromatic and usually sweetened beverage, combined with various flavourings to give it a distinctive character. Liqueurs generally consist of equal proportions of alcohol and plain syrup made from cane sugar, mixed with small proportions of essences and herbs. Some, such as Vergin and Kloogin, contain no syrup, but are mixtures of Vermouth, or Khoosh Bitters, and gin. Some of the most renowned liqueurs originated in the monasteries, but the secret of their composition has always been jealously guarded. Among the best known liqueurs are Advocaat, Benedictine, Chartreuse, green and yellow, Cointreau, Crème de Menthe, Curaçao, Grand Marnier, Kummel, and Maraschino.

LIQUID. One of the three states of matter. It may be defined as matter which is unable to sustain a steady shearing stress no matter how small that stress may be. It is a fundamental characteristic of liquids that when a certain volume is introduced into a vessel of greater volume it only occupies a portion of the vessel equal to its own volume, in contradistinction to a gas, which fills the containing vessel. The free surface of a liquid at rest is horizontal and the pressure at any point in the liquid is the same in all directions.

Most liquids are incompressible. All liquids are viscous to a greater or less degree. The viscous property of certain liquids, e.g. oils, is made use of for lubrication purposes. An important property of many liquids is their power of holding solids, other liquids, or gases in solution to form a new homogeneous liquid. See Hydraulics; Matter; Osmosis; Solution.

LIQUIDAMBAR. Gum tree. A large tree of the natural order Hamamelidaceae, it is also known as the sweet gum tree, and is a native of North and Central America. It has alternate leaves, much like those of the maples, which are fragrant when bruised and turn crimson in autumn. The tree exudes a fragrant terebinthine juice, and the wood is fine-grained.

LIQUID FIRE. Term popularly employed to describe a method of short range fighting introduced by the Germans during the Great War. It was chiefly employed in assaults on trenches, the principle being to spray the antagonists with flame to drive them from their position, or to make it untenable by creating a conflagration actually in the trenches. The apparatus most commonly used was the flammeurverfer, essentially a high-power blowpipe, from the nozzle of which a spray of inflammable oil was forced by gas pressure and ignited.

LIQUID MEASURE. Measure of capacity concerned with liquids. In the United Kingdom the gallon is the standard measure of capacity in the imperial system and is defined as the measure of 10 lbs. of distilled water at 62° F., with the barometer at 30 ins.

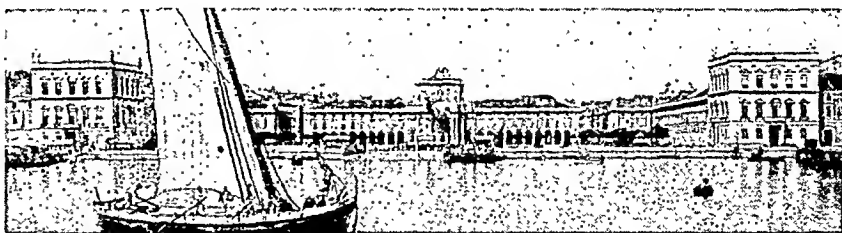
It contains, under these conditions, 277.274 cubic inches of distilled water. The imperial gallon was made legal in 1824, the old wine gallon being in use till then. A similar standard is used in the U.S.A.

LIQUOR CONTROL. Term used for the state supervision of the sale of intoxicating drink. This has been the subject of control in England since 1494, and licences for its sale have been necessary since 1552. Control took a more decided form during the Great War. In 1915 the trade in liquor was placed under the control of an independent board, the Central Control (Liquor Traffic) Board. The board instituted a policy of severe restriction. The quantities of spirits and beer allowed to be sold were drastically reduced, and state management of the traffic was introduced into the Carlisle area. See Gretna Green; Licensing.

LIQUORICE. Peeled root of various species of Glycyrrhiza. It is met with in commerce in long cylindrical pieces of a brownish colour. Liquorice has a sedative action on sore throats, and is used as a flavouring agent. Both an extract and a powder are used medicinally.

LIRA. Italian silver coin, the unit of the country's currency. The plural is lire. It is worth nominally 94d., the same as the franc, and is divided into 100 centesimi. In 1927 the lire was stabilized at 92.46 to the £ sterling. See Italy.

LISBON (Port. Lisboa). City of Portugal, capital of the republic. It stands on the estuary of the Tagus, about 9 m. from its mouth. The older portion of the city has steep and tortuous streets, but the newer part is well planned, with spacious streets and boulevards. The Moorish citadel, the white houses, the numerous churches, palaces, and convents, the many parks and open spaces, combine to make Lisbon one of the most beautiful cities of Europe. The harbour is one of the finest in the world. There is a wireless station.



Lisbon. Praça do Commercio, where are the Custom House, Exchange, War Office and other state buildings

The earthquake of 1755 destroyed the greater part of the city. It was followed by a destructive tidal wave and a fire. Of the cathedral, founded in 1150, but little old work remains. Other buildings are many churches, including St. Vincent and the Sacred Heart, the town hall, the bull-ring, that holds over 8,000 people, and the national theatre. The chief of several squares is the Praça do Commercio, one of the largest in the world. On it is a triumphal arch and many public buildings, also the equestrian statue of Joseph I, from which comes its name of Black Horse Square. The monastery of Carmo is a museum. In the suburb of Belem is a tower erected in the 16th century, the monastery of Jeronimos, and a monument to Albuquerque. The city has a university founded in 1588. Pop. 529,524.

LISBURN. City of co. Antrim, Northern Ireland. It stands on the Lagan, 8 m. from Belfast, on the G.N. of I. Rly. The cathedral

contains a memorial of Jeremy Taylor, who was bishop here. The chief industry is linen manufacture. Pop. 11,500.

Earl of Lisburne is an Irish title borne since 1776 by the family of Vaughan. John Vaughan, M.P. for Cardiganshire, having estates in Ireland, was made Viscount Lisburne in 1695. The earl's eldest son is known as Lord Vaughan.

LISIEUX. City of France. It stands at the junction of the Touques and Orbiequet, 30 m. from Rouen. The church of St. Peter, the former cathedral, is noted for its portal, pulpit, nave, and Lady Chapel. Most of it was built in the 12th and 13th centuries. The church of St. James is famous for its stained glass and other works of art. The city manufactures woollen goods. Pop. 15,341.

LISKEARD. Borough and market town of Cornwall. It is 15 m. W. of Plymouth on the G.W. Rly. The town lies on the hills above the Looe river, and from it a short railway runs to Looe. Liskeard was formerly a mining centre. The church of St. Martin is one of the largest in Cornwall. Market days, Sat. and second Mon. Pop. 4,376.

LISMORE. Town of co. Waterford, Irish Free State. It is 43 m. W.S.W. of Waterford, on the G.S. Rlys., and lies on an eminence rising above the Blackwater. The castle, the property of Sir Walter Raleigh, passed to the 4th duke of Devonshire by his marriage with Lady Charlotte Boyle. Near is the cathedral of St. Carthagh. Pop. 1,363.

LISMORE. (Gael. great garden). Island of Argyllshire, Scotland. In Loch Linnhe, it is 5 m. N.W. of Oban. Its area is 15 sq. m. The inhabitants engage in agriculture and fishing. About 1200 the island became the seat of the bishop of Argyll. The cathedral has been modernised and is used as the parish church. The Book of the Dean of Lismore is a collection of Gaelic poems written down, 1512-26, by J. Macgregor, dean of Lismore. Pop. 400.

LISMORE. Port of New South Wales, Australia. At the head of navigation of Rich-

mond river, it is 521 m. N. of Sydney, with which it has rly. connexion. It has saw-mills and sugar refineries. Pop. 9,540.

LISS. Village of Hampshire. It is 16 m. S.W. of Aldershot, on the Southern Rly. There is a fine old church, St. Peter's, restored in the 19th century. Pop. 2,322.

LISSA or **Vis.** Island in the Adriatic Sea. The westernmost of the larger S. Dalmatian Islands, it was formerly Austrian, and now belongs to Yugoslavia. The chief town is Lissa (pop. 4,000). Pop. about 10,000.

Lissa was the scene of two naval actions. In one, in 1866, the Austrians defeated the Italians, and in the other, in 1811, the British were victorious over the French.

LISTER, JOSEPH LISTER, BARON (1827-1912). British surgeon and scientist. Born at Upton, Essex, April 5, 1827, he took his medical degree in London in 1852. He became professor of surgery at Glasgow in 1860, of clinical surgery at Edinburgh in 1869, and

professor of clinical surgery at King's College, London, in 1877. He retired in 1893. At University College, where he was educated, Lister began those remarkable investigations into septic poisoning which revolutionised the treatment of wounds.



Lord Lister,
British surgeon
Elliott & Fry

When Pasteur, in 1862, announced his theory of fermentation and putrefaction Lister saw that the formation of pus was due to bacteria and turned his attention to a method of destroying them. The success of his

methods and his constant advocacy of antiseptics marked one of the greatest advances in the history of surgery.

Lister was made a baronet in 1883, a baron in 1897, and in 1902 one of the original members of the Order of Merit. He died Feb. 10, 1912, the title becoming extinct. See Antiseptics; Pasteur.

The Lister Institute is an institution for furthering scientific research into the causation and prevention of infective diseases of men and animals. Its premises are in Chelsea Bridge Road, London, S.W.1, and it has laboratories near Elstree, Herts.

LISTOWEL. Urban district of co. Kerry, Irish Free State. It stands on the Feale, 170 m. from Dublin and 20 m. from Tralee, on the G.S. Rlys. In the time of Henry II a castle was built here. Pop. 2,917.

Earl of Listowel is an Irish title borne since 1822 by the family of Hare. In 1869 the 3rd earl was made a peer of the United Kingdom as Baron Hare, Convamore, Ballyhooly, Cork, is the earl's seat, and his eldest son is known as Viscount Ennismore.

LISZT, FRANZ (1811-86). Hungarian pianist and composer. Born at Raiding, in a German-speaking part of Hungary, Oct. 22, 1811, his remarkable musical gifts attracted the attention of several Hungarian nobles, who defrayed the cost of his musical education in Vienna and Paris.

His public career as a pianist began about 1824, when he first visited England. In 1849 he settled in Weimar as conductor of the opera there, leaving in 1861, and afterwards spent his time in Rome and in Budapest, where he was director of the Academy of Music. His Rhapsodies Hongroises are notable among his compositions. He died July 31, 1886.

LITANY (Gr. *litaneia*, Lat. *rogatio*). Responsive form of supplication and intercessory prayer. The term first occurs in this sense in Eusebius, 339. The litany drawn up by Cranmer in 1544 is almost identical with that in the English Book of Common Prayer. It was based upon that of Gregory, the Sarum and York uses, and that by Melancthon and Bucer in Archbishop Hermann's Consultatio. Called The Litany and Suffrages, it was first sung in St. Paul's Cathedral, Sept. 13, 1545. Since 1552 The Litany, or General Supplication, as it is termed in the English Prayer Book, has been ordered to be sung or said after Morning Prayer upon Sundays, Wednesdays, and Fridays, and at other times when it shall be commanded by the ordinary. See Faldstool; Rogation Days.

LITCHI or **LEE-CHEE** (*Nephelium litchi*). Evergreen tree of the natural order Sapindaceae. It is a native of S. China. Its leaves are divided into four or five pairs of lance-shaped leaflets, and the small white flowers

form a loose cluster. The fruit, about 1½ in. across, is a berry with a hard, thin, warty, red shell, filled with a sweet, white jelly, enclosing a single seed.

LITHARGE. Oxide of lead (PbO). It is formed by the slow oxidation of molten lead, and is also made directly from lead ores. It is an important assayer's flux, and is largely used as a pigment; also as the raw material for the manufacture of red lead, as a glaze for earthenware, and in the preparation of the commoner kinds of glass. See Lead.

LITHERLAND. Urban dist. of Lancashire. It is 4½ m. N. of Liverpool, on the L.M.S. Rly., and is connected with Liverpool by the overhead electric rly. Pop. 16,870

LITHGOW. Town of New South Wales, Australia. It is 96 m. by rly. W. of Sydney, on the Blue Mts. Coal, iron, and kerosene shale are found. There are smelting works and a small-arms factory. Pop. 15,170.

LITHIUM. One of the metallic elements. Its chemical symbol is Li; atomic weight 6.94; atomic number 3; specific gravity 0.59; melting point 186° C. White in colour it may be pressed into wire and welded at atmospheric temperature; in moist air it takes on a film of yellowish oxide; decomposes water readily, and is less volatile than sodium or potassium, though it belongs to the same class of alkaline metals. Lithium is prepared from the mineral lepidolite, found in the Urals and in the U.S.A. It is the lightest metal known, its specific gravity being not much more than the half of that of water. Lithia preparations are much used in medicine.

LITHOGRAPHY (Gr. *lithos*, stone; *graphein*, to write). Process of printing in which the ink adheres to an image on a flat absorbent surface, whence it is transferred by contact to paper, and, in the case of offset, by the intermediary of rubber. Originally the surface was stone, but it is now invariably aluminium or zinc. Invented about 1796 by a German printer, Alois Senefelder (1771-1834), the process may be broadly subdivided into two processes of application: (1) Chromolithography, the parent and original method, i.e. the image drawn by hand on to the printing surface. By this process a picture is built up on the paper tint by tint, until the original is faithfully reproduced. (2) Photo-lithography, a method whereby the image of the original is transferred photographically and mechanically to the printing surface.

The chemical action involved in lithography is based on the lack of affinity between fat and water. When a stone or plate upon which the image lies is moistened with a thin film of water, the subject, compounded of a greasy ink, repels the water, which only covers the white spaces, and when the plate is afterwards rolled with ink the same adheres to the image, i.e. the plate will accept the greasy ink wherever it is drawn or photographed upon, but the ink will be repelled by the water elsewhere. In the older or direct method of lithographic printing it is necessary to use a smooth-surfaced paper, so that the plate may be brought closely in contact with it. In offset printing the impression is received on a rubber sheet and thence transferred to the paper. In this method rougher papers may be used.



Litchi. Foliage and flowers; inset, above, the fruit

LITHUANIA. Republic of central Europe, until 1918 part of Russia. It is bounded N. by Latvia, E. by Poland, S. by Poland and East Prussia, and W. by the Baltic. According to the treaty of peace with the Soviet government, 1920, its area was about 31,700 sq. m., with an estimated population of upwards of 4,000,000. Since then there have been territorial changes, including the loss of Vilna (Vilnius, Wilno) and Grodno (Gardinas) and acquisition of the Memel territory, 1923. The frontier with Poland is still unsettled. The government is carried on from Kovno (Kannas), though the Lithuanians claim that Vilna, which is in possession of Poland, is their capital. The area is now about 20,000 sq. m.; pop. about 2,000,000.

The country is flat and low-lying, with much forest. The chief river is the Niemen (Nemunas). Cereals, potatoes, flax, and linseed are produced, and dairy farming, pig



Lithuania. Map of the republic of north Europe, which formed part of Russia until February, 1918

rearing, and poultry farming are engaged in. There are over 1,000 m. of rlys. The bank of Lithuania was established in 1922. The unit of currency is the lita, and 48.66 go to the £ sterling.

In the 13th century Lithuania became a grand duchy, and in 1386 the grand duke married the Polish queen Hedvig, thus becoming king of Poland. Henceforward the two were united until Poland was dismembered, and Lithuania passed to Russia in 1776.

A national movement began in 1880, and in 1905 the assembly of Vilna demanded autonomy within the Russian empire. It was revived after its occupation by Germany in 1915-17, when a conference at Vilna of 200 representative Lithuanians elected a state council and demanded complete independence. On Feb. 16, 1918, Lithuania proclaimed its independence, and in 1922 received de jure recognition by the Great Powers. The constitution, adopted in 1922, was amended in 1928. The sovereign power resides in the diet (Seimas). The executive power is in the hands of the president and the cabinet, the president being elected for seven years.

LITMUS. Colouring matter prepared from various species of lichens, of the genera *Rocella*, *Variolaria*, *Leanora*, which are also employed in the manufacture of archil (q.v.). It is made by allowing these lichens to ferment in the presence of ammonia, as in the manufacture of archil, but potassium or sodium carbonate is also added, so that azolitmin, the colouring principle of litmus, is formed. The action of acid on azolitmin produces a red colour which is turned blue by alkali, and vice versa. The chief uses of litmus are as a colouring matter for wine and vinegar, and in analytical chemistry as an "indicator" of acidity or alkalinity in liquids.

LITRE. Measure of capacity in the metric system. It is both a dry and a liquid measure, and contains one cubic decimetre. The litre equals approximately 1.76 pints. It is spelt litro in Italian and Spanish. See Metric System.

LITTLEBOROUGH. Urban district and market town of Lancashire. It stands on the Rochdale Canal, 3½ m. N.E. of Rochdale, on the L.M.S. Rly. Practically a suburb of Rochdale, it lies in a coal mining district and has cotton manufactures. Market day, Fri. Pop. 11,488.

LITTLE ENTENTE. Name given to an alliance between Czechoslovakia, Yugoslavia, and Rumania. A common interest brought it into being, and formal treaties were signed in 1920 and renewed in 1929. One of its chief aims is to prevent the restoration of a Hapsburg prince to the throne of Hungary.

LITTLEHAM. Parish of Devonshire. It is 2 m. E. of Exmouth, on the Southern Rly. The church of S. Swithin is early English, restored in the 19th century. Pop. 6,602.

LITTLEHAMPTON. Seaport, watering place, and urban district of Sussex. It stands at the mouth of the Arun, 62 m. from London and 18 m. from Brighton, on the Southern Railway. It has golf links. Pop. 11,286.

LITTLE JOHN. One of the outlaw band under the leadership of Robin Hood (q.v.). He is supposed to have considerably exceeded ordinary stature. What is traditionally known as Little John's Grave is in the churchyard of Hathersage, Derbyshire, and a gigantic how supposed to have been his still hung in the church in the early 17th cent.

LITTLEPORT. Town of Cambridgeshire. On the Ouse, 6 m. N.E. of Ely, with a station on the L.N.E.R., it is in a fruit-growing and market-gardening district. Pop. 4,467.

Littlestone-on-Sea. Seaside resort of Kent. It is on the S.R., 8 m. S.W. of Hythe. There are golf links.

LITTLETON. Village of Middlesex. It is 3 m. from Staines. Here the Metropolitan Water Board has a huge reservoir capable of holding 7,000 million gallons of water. It was opened in 1925.

LITTLETON, SIR THOMAS (c. 1410-81). English jurist. Born at Frankley, Worcestershire, he was the son of Thomas Westcote and his wife, the daughter and heiress of Thomas de Littleton, to whose estate he succeeded, taking his grandfather's name. His



Sir Thomas Littleton, English jurist

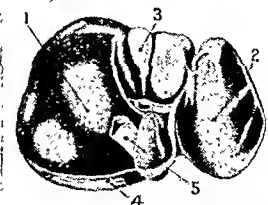
Treatise on Tenures, first printed in 1481, started the systematic study of the English law of real property. Written in Norman French, many editions have appeared. Coke's Commentaries on it are noted. He died Aug. 23, 1481 and was buried in Worcester.

LITURGY (Gr. leitourgia, public service). Proper name for the form, order, or office of the administration of the Holy Communion. The Greek word, adopted by the Alexandrian translators of the O.T., corresponds to the Hebrew Abodah used for the priestly ministrations in temple and tabernacle. In a wider sense the word liturgy is used for any form of public worship.

LITURGICAL COLOURS. These are the colours of altar frontals and clerical vestments as they alternate during the Church's year. White is used on all great festivals, and red on feasts of martyrs; violet is a penitential colour; blue is used for week days after Trinity; and black on Good Friday.

LITVINOFF, MAXIM (b. 1869). Russian revolutionary. Of Jewish origin, he originally bore the name of Finkelstein. After an active revolutionary career in Russia he lived in England. He was an accredited representative in England of the Russian republic, and later represented the Soviet in Sweden and Norway. His Bolshevik activities led to his imprisonment for a short time in England. A close personal friend of Lenin (q.v.), he married an English lady. In 1930 he became foreign commissar.

LIVER. Largest glandular organ in the body. Its average weight in an adult is about 3 lb. Situated beneath the diaphragm, or large horizontal muscle which divides the body into two parts, its important functions are the secretion of bile (q.v.) and the formation of glycogen, a substance resembling starch in composition. Glycogen is stored in the liver, and is converted into sugar and passed into the blood as the system demands it. The liver also plays an important part in the metabolism of fats in the body.



Liver. Diagram of lower surface of the human liver. 1. Right lobe. 2. Left lobe. 3. Fundus of gall bladder. 4. Rough surface of the liver. 5. Vena cava

LIVER FLUKE. Species of trematode worm, the cause of distomiasis, or rot, in sheep.



Liverpool Cathedral, begun in 1904 from the designs of Sir G. G. Scott. It is in red sandstone. Dixon Scott

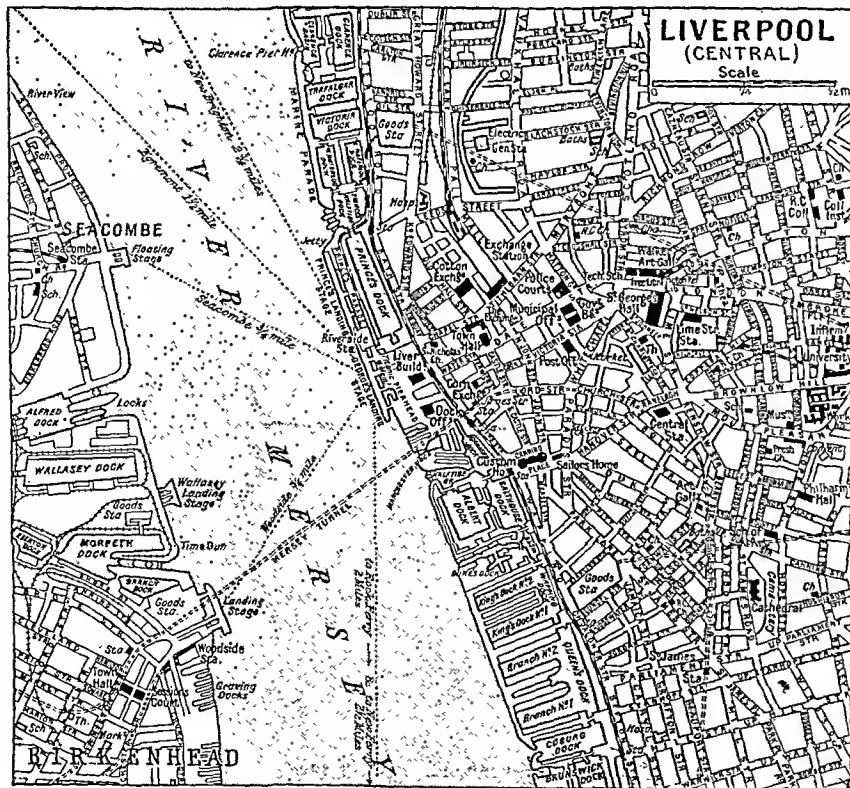
The liver fluke is a flattened, leaf-shaped creature about an inch long. Its eggs, passed with the excrement of the diseased animal, are hatched into little embryos which find their way to ponds and ditches; there they bore into the small water snail, *Limnaea truncatula*, and, leaving the snail, become encysted on blades of grass. If the grass is eaten by a sheep, the fluke finds its way to the liver, where it sets up serious disease.

LIVERPOOL. City, seaport, and co. bor. of Lancashire. It stands on the Mersey estuary, 31 m. W. of Manchester, and is served by the L.M.S. and other rlys. An electric rly. traverses the docks from Dingle to Seaford Sands. The docks, which line both banks of the Mersey, have a quayside of 37 miles, and the annual value of the sea-borne trade (controlled by the Mersey Docks and Harbour Board) reaches nearly £590,000,000. The chief import is cotton, and the port has a large proportion of the Atlantic passenger and cattle trades. Its area is about 33 sq. m., and the pop. (1921) 803,118.

There is extensive cold storage and, in addition to marine appliances, the city manufactures cement, asphalt, colour, varnish, and fertilisers; there are dye works, sugar and oil mills, tobacco factories, tanneries, engineering works, and corn mills.

The buildings include the new cathedral, designed by Sir G. G. Scott and begun in 1904, town hall (1754), St. George's Hall (1854), S. Nicholas Church, and the Greek Church. The Walker Art Gallery, the Picton Reference Library and Museum, the Technical School, the dock offices, and the buildings of the great steamship lines call for mention. There are many schools and hospitals, and a number of fine parks. In 1930 a site for a new R.C. cathedral was acquired.

Liverpool in 1172 was a small port whence troops embarked for Ireland, and it received



Liverpool. Plan of the central districts of the city, showing the docks on the Mersey and part of Birkenhead

its first charter from Henry II in 1173. It became a city and a diocese in 1880; its chief magistrate received the title of lord mayor in 1893. The city returns 11 members to Parliament. The water supply comes from Rivington watershed and Lake Vyrnwy.

UNIVERSITY OF LIVERPOOL. Founded as an independent university in 1903, it has faculties of arts, medicine, law, science, and engineering, departments of commerce, architecture, social science, tropical medicine, hygiene, local history and records, and Russian studies. It has an institute of archaeology.

LIVERPOOL, EARL OF. British title borne 1796-1851 by the family of Jenkinson, and since 1905 by that of Foljambe. George Savile Foljambe, a Nottinghamshire landowner, married the daughter and co-heiress of the third earl, and their son, Cecil George Savile Foljambe, was created Baron Hawkesbury in 1893 and earl of Liverpool in 1905. His son Arthur, the 2nd earl (h. 1870), was governor-general of New Zealand, 1912-20.

LIVERPOOL, ROBERT BANKS JENKINSON, 2ND EARL OF (1770-1828). British statesman. He was a son of Charles Jenkinson (1727-1808), who held many public offices under George III and was made an earl in 1796.

Born June 7, 1770, he entered Parliament in 1790, and in 1801 was foreign secretary. In 1803 he was made Baron Hawkesbury, and in 1804 he was home secretary under Pitt, on whose death he declined the premiership. He was again home secretary in 1807, and from 1809-12 was secretary for war. In 1812 he succeeded Perceval as prime minister, and he held that office for the long period of 15 years. He resigned in 1827, and died Dec. 4, 1828. His titles passed to a half-brother, on whose death in 1851 they became extinct.



2nd Earl of Liverpool,
British statesman
After Lawrence

LIVERPOOL REGIMENT. Regiment of the British army, whose official title is The King's Regiment (Liverpool). Formerly the 8th Foot, it was long known as the King's (Liverpool) Regiment. Raised in 1685, it had four regular and special reserve battalions, ten territorial, fifteen service, two dock, and two garrison battalions serving in the Great War.



Liverpool Regimental badge

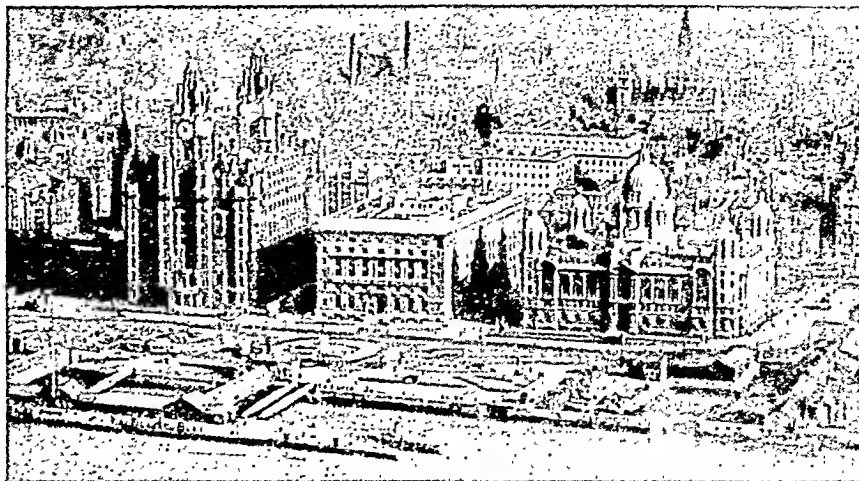
LIVERPOOL STREET. London thoroughfare. It runs W. from Bishopsgate to Blomfield Street, E.C., and, till 1829 known as Old Bethlehem, was renamed after Lord Liverpool, prime minister 1812-27. Here is the terminus of the L.N.E.R., opened in 1875.

LIVERSEDEGE. Market town of Yorkshire (W.R.). It is 6 m. E.S.E. of Halifax, on the L.M.S. Rly. It has cotton, worsted, machinery, and chemical manufacturing. Market days, Tues. and Sat. Pop. 14,752.

LIVERWORT (Hepaticeae). Small class of flowerless plants allied to the mosses. They grow on damp ground, wet rocks, and the base of tree trunks. Some are scale-like (liverworts proper); others have a distinct stem and pellucid leaves (scale-mosses). The larger of the scale-like species were anciently considered remedies for liver troubles, but have no economic value.



Liverwort. Plant and fruit of *Marchantia polymorpha*



Liverpool. Air view of the pierhead and St. George's landing stage, whence the Mersey ferry-boats ply. The three great buildings are, from the left, the Royal Liver Building, Cunard Building, and Dock Board Offices
Central Aerophot

LIVERY (Fr. *livrée*, something delivered). Uniform worn by the men-servants of a person of position. In the city of London the word implies the freemen of the city entitled to wear the costume of the city or livery companies and to vote at elections.

Livery was applied formerly to rations of food issued to a household and to the horses in the stables, whence the phrase livery stable, meaning properly one where horses are fed and attended to at a fixed charge.

LIVING. Term used for an eccles. benefice. A living is obtained by presentation, institution, and induction, and the incumbent must reside on his living for at least nine months of the year, unless he has leave of absence from the bishop.

LIVINGSTONE. Capital of N. Rhodesia, B.S.A. It is 4 m. from the left bank of the Zambezi river. Livingstone is also the name of a mountain range N. and N.E. of Lake Nyasa. The gorge on the Zambezi river formerly known as Karba Gorge is named Livingstone Gorge, after the great explorer.

LIVINGSTONE, DAVID (1813-73). Scottish missionary and explorer. Born at Low Blantyre, Lanarkshire, March 19, 1813, he was the son of Neil Livingstone, a tea agent and deacon in the Independent church at Hamilton. His mother, Agnes, was a daughter of David Hunter, a Blantyre tailor. His great-grandfather fell at Culloden fighting for Prince Charles. David Livingstone's early years were divided between a cotton mill and an evening school. By dint of saving he managed to study at Glasgow University. In 1838 he offered his services to the London Missionary Society; and, gaining a medical diploma at Glasgow, he sailed Dec. 8, 1840, for South Africa, to join Dr. Moffat (q.v.), whose daughter Mary he married in 1844. She died at Shupanga in 1862.

As a missionary he won the lasting regard of the natives, as an explorer he discovered Lakes Ngami, Shitwa, Nyasa, and Bangweulu and the Victoria Falls, and was the first white man to traverse the length of Lake Tanganyika. He was consul at Quilimane 1858-64. In Oct., 1871, H. M. Stanley (q.v.) found him in sore need at Ujiji. Though wasted in health, he refused to return, and made further efforts to reach the sources of the Nile. He died at Ijala, May 1, 1873, and was buried in West-



David Livingstone,
Scottish explorer

minster Abbey. It is estimated that, attended by a few native servants, in 33 years he travelled over 30,000 m. of country unknown to the white man. See Blantyre.

LIVY (59 B.C.-A.D. 17). Roman historian, whose full name was Titus Livius. He was born at Padua, and spent 40 years on his History of Rome in 142 books. Only about a quarter of the work has been preserved. Among scientific historians Livy has no place, but he is in the first rank as a stylist, being at his best in such passages as his sketch of the character of Hannibal, and in his descriptions of battles and sieges.

LIXIVIATION or **LEACHING** (Lat. *lix*, ashes). Process of treating a mixture of soluble and insoluble mineral substances with solvents which only partly dissolve them. It is practised for the purpose of extracting alkali carbonates from wood ashes or kelp, the extraction of certain metals from their ores, and under the name of percolation for extracting the active constituents from drugs.

LI YUAN-HUNG (1864-1928). Chinese statesman. As a young man he saw service in the navy and army. On the outbreak of the revolution of 1911 he commanded the troops at Wu-chang. Vice-president in turn to Sun Yat-sen and Yuan Shih-kai, he was president 1916-17 and 1922-23, and died June 3, 1928.

LIZARD (Lat. *lacerta*). Name applied commonly to any small four-limbed and tailed reptile or batrachian. Modern biologists, however, restrict its use to the scale-clad sub-order Lacertae of the reptilian order Lacertilia, and so exclude the geckos and chameleons. So restricted, the lizards comprise about 1,500 known species, divided into 18 families. The family Lacertidae, with about 100 species, includes all the true lizards in the narrower sense. These are represented in Britain by the common Lizard (*Lacerta vivipara*) and the sand lizard (*L. agilis*). In Ireland the common lizard is the sole representative of the Reptilia. With the exception of the Polar regions the distribution of the lizards is world-wide. Lizards are almost exclusively carnivorous. The American Gila Monster belongs to the only known family of poisonous lizards. See *Amphisbaena*; *Basilisk*; *Blindworm*; *Chameleon*; *Friiled Lizard*; *Gecko*; *Glass Snake*; etc.

LIZARD, THE. Most southerly point of England. It is in Cornwall, 10 m from Helston, its nearest rly. station. The name is also given to the peninsula which terminates in Lizard Point (186 ft.). At Poldhu is a wireless station. There is a lighthouse

LLAMA. Group of mammals belonging to the camel family. They are smaller than the camel, are of lighter build, and have no hump. The tail is shorter, the woolly hair usually longer, and the dentition different. Llamas occur only in the S. and W. of S. America. The wild species are known as the guanaco and the vicuña, and it is a domesticated breed of the former which is usually known as the llama, another and smaller breed being called the alpaca. The llama is about the same size as the wild guanaco (q.v.) and is usually white. It is much used as a beast of burden in the Andes.



Llama, the South American member of the camel tribe
Gambier Bolton, F.Z.S.

known as the llama, another and smaller breed being called the alpaca. The llama is about the same size as the wild guanaco (q.v.) and is usually white. It is much used as a beast of burden in the Andes.

LLANBERIS. Village of Carmarvonshire, Wales. It is 9 m. S.E. of Carmarvon on the L.M.S. Rly. Romantically situated between two small lakes, Llanberis is a centre for tourists. Its pass is a notable beauty spot, and the Snowdon mountain railway starts from here. Slate is extensively quarried. Pop. 2,373.

LLANDAFF. City of Glamorganshire, now part of Cardiff. It stands on the Taff, near Cardiff, with a station on the G.W.R. The cathedral, practically rebuilt in the 19th century, incorporates some part of the Norman building and a 15th century tower. There is a school for girls maintained by the Howell Trust, and the city has an old stone cross. Market day, Sat. Pop. 13,277.

LLANDEBIE OR LLANDYBI. Coal mining and ironstone working centre of Carmarthenshire, Wales. It is 12 m. N.N.E. of Llanelli, on the G.W.R. Pop. 8,019.

LLANDILO OR LLANDEILO. Urban dist. and market town of Carmarthenshire, Wales. It stands on the Towy, 15 m. E. of Carmarthen, with stations on the G.W. and L.M.S. Rlys. The chief building is the church of S. Teilo. The town owes its growth to the castle of Dinefawr, built here in the 9th century. Near its ruins is the 17th century Dynevor Castle. Market day, Sat. Pop. 2,120.

LLANDILO GROUP. Subdivision of the Ordovician rocks found typically at Llandilo. The rocks consist of a series of slates, shales, calcareous flagstones, and sandstones. The group is found in N. Wales, Cumberland, Pembrokeshire, and parts of Scotland.

LLANDOVERY. Mun. bor. and market town of Carmarthenshire, Wales. It is 26 m. from Carmarthen, on the L.M.S. Rly. There are remains of a castle built in the 12th century. The town has horse and cattle fairs. Market day, Fri. Pop. 1,332.

LLANDOVERY COLLEGE. A British public school, founded and endowed by Thomas Dinefawr, and has about 150 boys.

LLANDOWERY GROUP. Lowest division of the Ordovician rocks in Britain. Llandovery rocks are used for roads, pavement and

LLANIDLOES. Urban dist. of Radnorshire, Wales. It is 45 m. from Llanidloes, on the L.M.S. Rly. It is famous for its sulphur, and has a station on the G.W.R. The old parish

Liverpool. Plan of the central districts of the city.

LLANDUDNO. Watering place and urban district of Carnarvonshire, Wales. It stands on the N. coast of the co., just to the east of Great Orme's Head. On the L.M.S. Rly., it has a good promenade, a fine pier, golf links, and other attractions for visitors. The restored church of S. Tudno is said to date from the 7th century. Pop. 15,500.

LLANDYSSUL. Market town and parish of Cardiganshire, Wales. It stands on the Teih, and has a station on the G.W.R. Woollens are made. Near are the remains of two castles. Market day, Tues. Pop. 2,688.

LLANELLY. Seaport, mun. bor., and market town of Carmarthenshire, Wales. It stands on Burry Inlet, an opening of Carmarthen Bay, 12 m. from Swansea, with a station on the G.W.R. It is the centre of the tinplate industry and has works for refining copper and making chemicals, etc., and extensive docks, including a large floating dock, from which coal is exported. Market day, Thurs. Pop. 37,180.

LLANFAIRFECHAN. Urban district and seaside resort of Carmarvonshire, Wales. It stands at the foot of Penmaen Mawr Mt., 8 m. S.W. of Conway on the L.M.S. Rly. There is good bathing. Pop. 3,083.

LLANGAMMARCH. Village and inland watering place of Brecknockshire, Wales. It is 15 m. N.E. of Llandovery on the L.M.S. Rly., and has a spring containing chloride of barium. Pop. 740.

LLANGFNI. Urban district and market town of Anglesey, Wales. It stands on the Cefni, 8 m. N.N.W. of Carnarvon, with a station on the L.M.S. Rly. There is a trade in agricultural produce. Market day, Thurs. Pop. 1,691.

LLANGOLLEN. Urban dist. and market town of Denbighshire, Wales. It stands on the Dec, 9 m. from Wrexham, and has a station on the G.W.R. An old bridge (14th century), crosses the Dec here, and near by are the remains of an old castle and Cistercian abbey. The church of S. Collen is partly Norman. Flannel is manufactured, and around are coal mines and limestone quarries. The vale of Llangollen is 8 m. in length. The house, Plas Newydd, where the ladies of Llangollen, Lady Eleanor Butler and the Hon. Sarah Ponsonby, lived in retirement for 50 years, is an object of much interest. Market day, Tues. Pop. 3,680.



Llandaff. Cathedral church of SS. Dabidus and Teilo, restored 1843-69

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Llangollen, N. Wales. The Dee and 14th cent. bridge, counted as one of the three wonders of N. Wales
Frith

LLANHILLETH OR LLANHIDDEL. Coal mining centre of Monmouthshire, Wales. It stands on the Ebbw, 8 m. from Pontypool, and has a station on the G.W.R. Pop. 10,950.

LLANIDLOES. Mun. bor. and ancient market town of Montgomeryshire, Wales. It stands on the Severn, 19 m. from Montgomery, with a station on the G.W.R. The old parish

church of S. Idloes was restored in the 19th century. Flannel is manufactured, and in the neighbourhood are lead mines. Market day, Sat. Pop. 2,590.

LLANOS (Sp. plains). Name given in S. America to treeless plains or prairies and particularly to the tropical grasslands or savannas in the basin of the Orinoco river. Large numbers of cattle are reared on the llanos, but industry is impeded by the summer floods and the drought of the dry winter season. Pron. Yah-nos.

LLANRWST. Market town, urban dist., and tourist centre of Denbighshire, Wales. It stands on the Conway, and has a station on the L.M.S. Rly. The church of S. Grwst is modern. An adjacent chapel, built by Inigo Jones (who also designed the bridge over the Conway), contains some ancient work removed from an abbey. In 1928 the earl of Ancaster presented an Elizabethan house for use as a town hall. The chief industries are tanning and malting. Market day, Tues. Pop. 2,368.

LLANSAMLET. Two parishes of Glamorganshire, Wales, known as Higher and Lower. They stand on the Tawe, 3 m. from Swansea, on the G.W.R. The chief industries are coal mining and copper smelting. Pop. 6,671.

LLANTARNAM. Urban dist. of Monmouthshire, England. It is 3½ m. from Newport, on the G.W.R. The chief industry is coal mining. In the Middle Ages there was a Cistercian abbey here. The existing Llantarnam Abbey was partly built from the material of an older one. Pop. 7,800.

LLANTHONY. Ruined abbey in Monmouthshire, England. It stands on the Honddu river, 9 m. N. of Abergavenny, and was founded by the Austin Friars in 1107. About 4 m. away is the abbey founded in 1870 by Father Ignatius. Just outside Gloucester are the scanty ruins of another Llanthony Abbey, an offshoot of the older one in Monmouthshire.

LLANTRISANT OR LLANTRISAINT. Parish of Glamorganshire, Wales. It is 11 m. from Cardiff, on the G.W.R. Of its castle, reputed one of the strongest in Wales, little remains. There is an old church dedicated to three saints, hence the name of the town, which was incorporated from the 14th century till 1883, when the corporation was dissolved. Pop. 21,946.

LLANTWIT MAJOR. Market town of Glamorganshire, Wales. It is 5 m. from Cowbridge, on the G.W.R. In the 6th century a saint named Illtyd established a monastery here which became famous as a missionary centre and for its school. The church, which dates from the 13th cent., was rebuilt in the 14th cent. and restored between 1900-5. Near the town are remains of a Roman villa. Market day, Mon. Pop. 1,504.

LLANWRTYD WELLS. Urban dist. and inland watering place of Brecknockshire, Wales. It stands on the Irfon, has a station on the L.M.S. Rly. and is noted for its springs and its trout fishing. The springs are of chalybeate and sulphur and were widely known in the 19th century. The attractions include the Abernart pleasure grounds.

LLEWELLYN, SIR WILLIAM (b. 1863). British painter. Born in Dec., 1863, he was elected A.R.A. in 1912, R.A. in 1920. In 1918 he was knighted, and in 1928 was chosen president of the R.A. He is chiefly known for his many portraits, one being the state portrait of Queen Mary.



Sir W. Llewellyn, British painter
Russell

LLEWELYN (old Welsb, lion-like). Name of two princes of N. Wales. Llewelyn the Great, who reigned 1194-1239, married King John's daughter Joan, 1206, and conquered most of S. Wales. He submitted to Henry III in 1237, and retired to a monastery at Aberconway, where he died April 11, 1240. His grandson, Llewelyn ab Gruffydd, became prince about 1246, in succession to his uncle David. His life was mainly passed in wars with England, and he was killed in 1282.

LLOYD, GEORGE AMBROSE LLOYD, 1st BARON (b. 1879). British diplomatist and administrator. Member of a well-known Warwickshire family, he was born September 19, 1879, and educated at Eton and Cambridge. Having travelled a good deal in the East, he was elected Unionist M.P. for W. Staffordshire in 1910. From 1919 to 1923 he was governor of Bombay, and in 1924 he returned to Parliament as M.P. for Eastbourne. In 1925 he was appointed high commissioner for Egypt and the Sudan and made a peer. He resigned in 1929 owing to differences of opinion with the Labour Government.

LLOYD, EDWARD (1815-90). British newspaper proprietor. Born at Thornton Heath, Surrey, Feb. 16, 1815, he founded Lloyd's Weekly London Newspaper, Nov. 27, 1842, and in 1876 established The Clerkenwell News as The London Daily Chronicle. He also founded large paper mills at Sittingbourne, Kent. He died April 8, 1890.

LLOYD, EDWARD (1845-1927). British singer. Born London, Mar. 7, 1845, he became a chorister of Westminster Abbey, and in 1869 a gentleman of the Chapel Royal. From 1871 until his retirement in 1900 he was regarded as the leading tenor singer in England. He died Mar. 31, 1927.

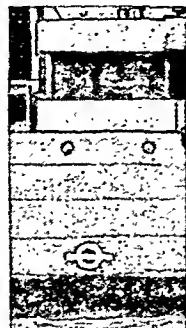
LLOYD'S. Name of the corporation of marine underwriters in London. The business originated about 1688 in a coffee-house opened in Tower Street by Edward Lloyd (d. 1726). Men interested in shipping met there for refreshment, made it a place of business, and in 1692 Lloyd obtained larger premises at the corner of Lombard Street and Achechurch Lane. In 1696 Lloyd's News, afterwards Lloyd's List, a record of the movements of ships, was first issued. In 1774 Lloyd's moved into the Royal Exchange, the S.E. portion of which was its headquarters until 1928, when its new building in Leadenhall Street, designed by Sir E. Cooper, was opened.

LLWYNPIA. Mining district of Glamorganshire, Wales. It is 9 m. S. by W. of Merthyr Tydfil, on the G.W. Rly. Coal is extensively mined. Pop. 18,700.

LOACH. Small fresh-water fishes of the carp family, of which the common loach (*Nemachilus barbatulus*) is the best known. A native of the greater part of Europe, it is common in shallow, gravel-bottomed streams in Britain, especially in the mountainous districts. The back is dark green and the sides are yellow, the upper parts marbled with brownish-black. An allied species, the spiny loach (*Cobitis taenia*), is found in England, but not in Scotland or Ireland. It has an erectile spine in front of each eye.

LOAD. In engineering, term applied to the work an engine, generator, or motor is built to perform. The expression is also applied to the loading of vehicles, cranes, etc. The word denotes also a unit of weight, e.g. a load of hay is 36 trusses weighing 2,016 lb., if old, and 2,160 lb. if new hay. In aeronautics, loading is the term used to denote the weight carried per sq. ft. of wing surface.

LOAD LINE. Plimsoll mark carried amidships on each side by every British mercantile ship. It shows the maximum depth to which she may be loaded in salt water, in fresh water, at different times of the year, and in different oceans, etc. See Plimsoll, Samuel.



Load Line, or Plimsoll mark

LOBBY. Word meaning a waiting-room or passage to a more important apartment. In a special sense it is used for the entrances to the Houses of Lords and Commons, and to those of other legislative buildings; also for the two corridors through which M.P.s pass to record their votes.

Lobbying is a term used for the practice of calling upon members of a legislative assembly, e.g. the House of Commons, in the lobby to secure their support for a measure. It is also applied to the work of journalists who act as political correspondents and are given a right of entry to the lobby.

LOBELIA. Genus of hardy and half-hardy perennial and annual plants of the order Campanulaceae, natives of tropical and temperate regions. The genus is named after M. de L'Ohel, physician to James I.



Lobelia. Leaves and flowers of the blue dwarf variety

The blue great lobelia was introduced from N. America in 1665. The familiar blue dwarf lobelia, used as an edging and carpet plant for summer bedding, is *L. crinus*. It is a native of S. Africa.

LOBENGULA (c. 1833-94). Matabel king. Succeeding his father in 1870, he exhibited violent animosity towards Europeans. He accepted the protection of Britain in 1888, but, conceiving himself affronted by the British South Africa Company, revolted five years later. His forces were dispersed in a battle near Bulawayo, and he died Feb. 9, 1894.

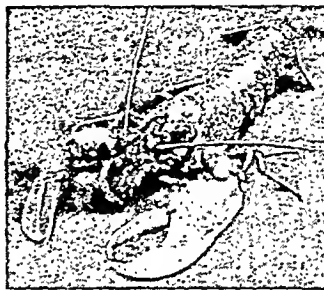
LOBITO BAY. Harbour situated a few m. N. of the port of Benguela, Portuguese W. Africa. It is one of the finest harbours on the W. coast of Africa, and the largest vessels can anchor within 30 ft. of the shore. Lobito Bay is the starting point of the Benguela-Beira rly.

LOBSTER. Name given to several species of decapod (ten-footed) crustaceans. With pincer-like limbs on the thorax, they are distinguished from the crab-like forms by the possession of a large cylindrical tail. The name is usually restricted to *Astacus gammarus*, the common lobster of the markets, and to

A. americanus. In this species the carapace is almost cylindrical, and is bluish black in colour, the familiar red hue being the result of boiling. Good specimens weigh from 8 lb. to 11 lb. See Arthropoda; Crawfish.

LOB WORM or **LUG WORM** (*Arenicola marina*). Species of marine worm, largely used for bait. It resembles a dark brown or greenish earthworm with thirteen pairs of branched red gills along the sides of its segmented body. It is common in the muddy sand between tide marks, where its burrows may be recognized by the heaps of casts. See illus. p. 92.

LOCAL GOVERNMENT. Term used in the United Kingdom and elsewhere for the system by which local areas are allowed to manage certain of their own affairs. The chief areas of local government are counties, cities, boroughs of various kinds—in Scotland burghs—urban and rural districts, and parishes. In Great Britain in 1834 the system of local government by elected representatives was introduced into the boroughs, and in 1888 into the counties. In 1894 urban and rural councils, also elected bodies, were created. On April 1, 1930, wide changes took place as the result of the Local Government Act of 1929, the functions of all poor law authorities being transferred to the co. and bor. councils.



Lobster. Specimen of the common variety, *Astacus gammarus*

The Local Government Board was a department of state established in 1871 to look after the administration of the poor law and the work of local authorities generally. In 1919 it became the ministry of health. There was a local government board for Scotland, now the department of health.

LOCAL OPTION. Term meaning that a locality, town, or county, or other

area, is given the power to decide what course it shall take on a given question, specifically in regard to questions affecting the sale of intoxicating liquor.

By an Act passed in 1913 Scotland has local option. In each area the electors can decide whether or not intoxicating liquor shall be sold. A poll can be held if one-tenth of the electors ask for it.

LOCARNO. Town of Switzerland, in the canton of Ticino. It stands at the N. end of Lago Maggiore, 13 m. by rly. S.W. of Bellinzona, and was taken by the Swiss from Milan in 1803. The old castle of the Visconti is now a law court and prison. On a hill stands the pilgrimage church of the Madonna del Sasso, founded in 1569. The treaty of Locarno, known as the European Security Pact, was signed here, Oct. 16, 1925. Pop. 5,541.

LOCHABER. Mountainous district of Inverness-shire, Scotland. In the neighbourhood of Lochs Linnhe, Leven, and Eil, it is the centre of a £6,000,000 hydro-electric power scheme. The Lochaber axe, formerly a weapon of the Highlanders and Irish, is a form of bill with a hook at the back.

LOCHEE. District of Dundee. It has a station on the L.N.E.R. The title of Baron Lochee of Gowrie was borne by Edmund Robertson (1845-1911). He was civil lord of the admiralty, 1892-95; and secretary to the admiralty, 1905-8.

LOCHGELLY. Burgh of Fifeshire, Scotland. It stands near Loch Gelly, 7 m. N.E. of Dunfermline, with a station on the L.N.E.R. It is a coal-mining centre. Pop. 10,666.

LOCHMABEN. Burgh of Dumfriesshire, Scotland. It stands on the Annan, 8 m. from Dumfries, with a station on the L.M.S. Rly. In two of the neighbouring lochs vendace, a rare fish, is found. Lochmaben Castle, now a ruin, belonged to the Bruces, and the town has associations with Robert Bruce. Pop. 989.

LOCHY. Loch or lake of Inverness-shire, Scotland. Part of the Caledonian Canal system, it is drained by the river Lochy to Loch Linnhe. It has salmon and trout fisheries.

LOCK. Enclosure in a navigable waterway provided with water-tight entrance gates at each end, by means of which boats are enabled to pass from one water level to another. To transfer a boat from high to low level the gates at the lower end are closed, and water is admitted through sluices until it has risen within the lock to the higher level. The gates at the upper end are then opened, the boat enters and they are again closed. Water is then discharged through another set of sluices until it has fallen in the lock to the lower level, when the gates at the lower end are opened and the boat is free to pass out. By reversing the process a boat may be lifted from low to high water level.

Locks vary greatly in size, from those for small craft on upper reaches of rivers, to locks which accommodate the largest ocean-going vessels, such as those on the Panama canal.

LOCK. Device commonly comprising a sliding bolt shot by a key for securing a box-lid, door, or other contrivance. The simplest modern form is the common spring lock, usually fitted with wards or wheels. In the Chubb lock spring-pressed tumblers are lifted by a key to permit the shooting of the bolt. Combination locks used for securing safes have two or more disks, each with a notch in its periphery, mounted upon a spindle turned by a knob or handle. On turning the spindle according to a given plan or combination the peripheral notches in the disks are brought into register with each other. The mechanism which has obstructed the bolt then falls into the registering notches, and the bolt is free.

Revolving plugs, as in the Yale lock, comprise a series of spring-pressed pins raised to permit the rotation of a barrel carrying a cam for shooting the bolt, by a flat key having a serrated edge.

LOCKE, JOHN (1632-1704). English philosopher. Born at Wrington, Somerset, Aug. 29, 1632, and educated at Westminster and Christ Church, Oxford, he was a tutor at Christ Church, and there studied medicine and meteorology, also practising as a physician. In 1666 he became private secretary to the earl of Shaftesbury, with whose career he was associated for nearly 15 years, being for three of them secretary of the board of trade. In 1690 appeared his *Essay Concerning Human Understanding*, to the fourth edition of which, in 1700, he added the famous chapter on the association of ideas. He died Oct. 28, 1704.

As a philosopher, Locke's chief argument is that all knowledge is limited by the extent of our experience. In his *Two Treatises on Government* he states the case for the ultimate sovereignty of the people. His *Letters Concerning Toleration* are arguments for liberty of thought. His other writings include *Thoughts Concerning Education*, 1693; and *The Reasonableness of Christianity*. He also wrote on monetary subjects.

LOCKE, WILLIAM JOHN (1863-1930). British novelist and dramatist. Born in Barbados, March 20, 1863, he was educated at St. John's College, Cambridge. Originally an architect, he wrote many highly successful romantic novels. They include *The Morals of Marcus Ordeyne*, *The Beloved Vagabond*, *The Joyous Adventures of Aristide Pujol*, *Stella Maris*, *Jaffery*, *The Rough Road*, *The Great Pandolfo*, and *The Old Bridge*. A

volume of short stories, *The Town of Tombarel*, appeared a few weeks before his death, which took place in Paris, May 16, 1930.



W. J. Locke,
British novelist
Russell

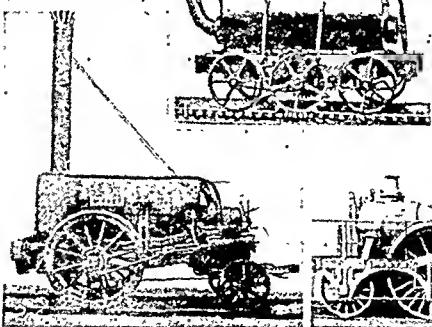
Locke left a novel in MS. form, *The Shorn Lamb*. His plays include *The Morals of Marcus* and *The Beloved Vagabond*, adapted from his novels, and *The Man from the Sea*.

LOCKERBIE. Burgh of Dumfriesshire, Scotland. It is 10 m. from Dumfries, with a station on the L.M.S. Rly. There is an old border tower used as the police station. Cattle and sheep fairs are held. Pop. 2,500.

LOCKER-LAMPSON, FREDERICK (1821-95). British poet and parodist. He was born, May 29, 1821, at Greenwich Hospital, where his father, E. H. Locker, was civil commissioner, and died at Rowfant, Sussex, May 30, 1895. His *London Lyrics*, 1857, and *London Rhymes*, 1882, prove him a poet of crowds, of the assembly and the hospital, the opera and the slum. The Rowfant Library, 1886, records his work as a collector. His son-in-law, Augustine Birrell, edited his autobiographical reminiscences in 1896, and wrote a sketch of his life in 1920.

Two of Locker-Lampson's sons, Godfrey and Oliver, have made their mark in Parliament. Godfrey, privy councillor, was under-secretary for foreign affairs 1925-29. Oliver served in Russia during the Great War and was awarded the D.S.O.

LOCKHART, JOHN GIBSON (1794-1854).



Scottish author and editor. Born July 14, 1794, at the manse of Cambusnethan, and educated at Glasgow High School, Glasgow University, and Balliol College, Oxford, he became a member of the Scottish bar. In 1818 he met Sir Walter Scott, and two years later married Scott's elder daughter, Sophia. Editor of the *Quarterly Review* 1825-1853, he died Nov. 25, 1854. Lockhart's title to fame is his *Life of his father-in-law*, published in 1837-38.

LOCKHART, WILLIAM EWART (1846-1900). Scottish painter. Born at Annan, Dumfriesshire, Feb. 18, 1846, in 1878 he became a member of the Royal Scottish Academy. His success as a portrait painter was considerable, and his subject pictures, many based on travels in Spain, were widely praised. He died in London, Feb. 9, 1900.

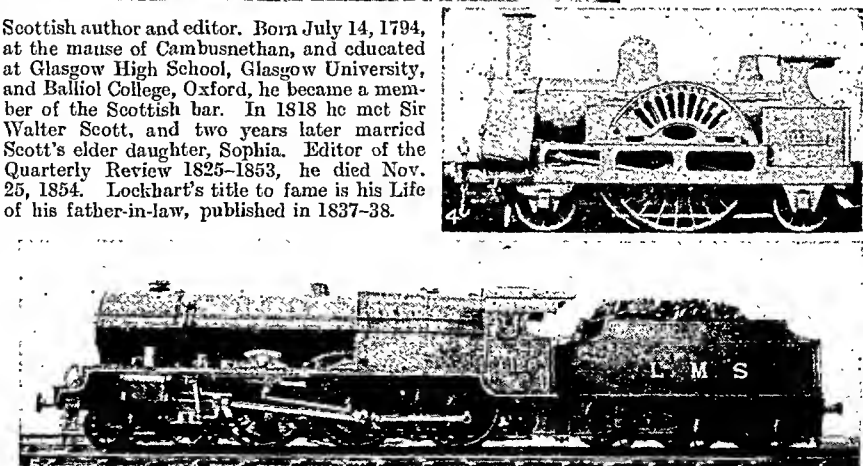
LOCKJAW or **TETANUS** (Gr. *teincin*, to stretch). Acute infectious disease caused by the *Bacillus tetani*. This micro-organism and its spores are very widely distributed in the soil of gardens and fields. Infection may occur through a wound in the hand, and in civil life the disease is frequently found among gardeners. The injection of a preventive dose of the anti-tetanic serum into all who had been wounded proved the means of saving many thousands of lives during the Great War.

LOCKWOOD, WILLIAM (b. 1868). English cricketer. Born March 25, 1868, he played first for Nottinghamshire, and then for Surrey, for which county he did good work, especially as a bowler. In 1891, playing against Warwick at the Oval, he captured four wickets with successive balls, and in 1899 and 1900 he made well over 1,000 runs and secured more than 100 wickets. He played for England against Australia in 1893, 1899, and 1902.

LOCKYER, SIR JOSEPH NORMAN (1836-1920). British astronomer. Born May 17, 1836, at Rugby, he became a clerk at the War Office in 1857, and devoted his leisure time to astronomy. Between 1870 and 1905 he led eight eclipse expeditions on behalf of the British government. In 1913 he became director of the Hill Observatory (now the Norman Lockyer Observatory) at Salcombe Regis, near Sidmouth. Knighted in 1897, Lockyer was president of the British Association in 1903-4, and died at Sidmouth, Aug. 16, 1920. It was in 1868 that Lockyer first made the discovery with which his name is always associated, a method of observing the prominences of the sun independently of the occurrence of an eclipse. He carried out many spectroscopic researches into the chemistry of the sun.



Norman Lockyer,
British astronomer
Russell



Locomotive. 1. Blenkinsop's Leeds locomotive, the first engine commercially used, 1812. 2. The Rocket, built by Stephenson, 1825. 3. Stephenson's North Star, 1837. 4. L.M.S. Rly. locomotive, built in 1847, which, after reconstruction, was still running in 1930. 5. Three-cylinder express locomotive of the Royal Scot class; its total weight is 127 tons 12 cwt., with boiler pressure of 250 lbs. per square inch. See p. 883

No. 5 by courtesy of the L.M.S. Railway

LOCOMOTIVE. Modern railway locomotives may be arranged in three groups: steam, internal combustion engine, and electric. Most locomotives now in use still belong to the first group, and are essentially similar to those built by the Stephenson, having the square firebox or furnace, long fire tubes, simple engines, and the steam blast in the chimney. Modern improvements have been directed to raising the steam pressure, lengthening the boiler, "compounding" the engines, that is, using the steam twice over in separate cylinders, pre-heating the feed water and superheating the steam. Others are the substitution of powdered coal, with mechanical stoking, or oil fuel, for lump coal, and, finally of water tube boilers for the old fire tube system.

The steam pressure of Stephenson's Rocket when it made its trials was 50 lbs. to the sq. inch. To-day pressures of 250 lbs. are common; a pressure of 850 lbs. with water tube boilers is in use in Germany, and pressures of 400 lbs. to 500 lbs. in the United States; while in Britain the L. and N.E. Rly. have a Yarrow type water tube boiler locomotive working at 450 lbs. The Rocket with its tender weighed about seven tons and drew a load of under 20 tons. A modern American locomotive weighs from 200 tons to 300 tons and draws a load of from 3,000 to 3,750 tons.

The Diesel type of oil engine is the form of internal combustion engine which is being used with more or less success on locomotives, though difficulties have yet to be overcome in its application.

Electric locomotives are of two classes. One consists of an electric motor, with its control apparatus, fixed in a special carriage and connected with the axle or axles of the carriage. The necessary current is picked up either from a rail on the track or from a wire overhead; in some electrically driven trains the power units are housed in one end of a passenger coach.

In the other class of locomotive the electric current is generated in the carriage itself, a Diesel oil engine being chiefly used for this purpose. An attempt is also being made to combine steam and electricity in the same locomotive, using water tube boilers and steam turbines, with powdered coal or oil-fired boilers. See illus. p. 882.

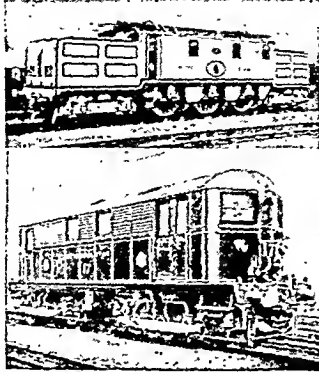
LOCOMOTOR ATAXIA or **TABES DORSALIS.** Disease due to changes in and degeneration of the nerve tissues and cells in the spinal cord. The real cause is syphilis, but the precipitating cause may be worry, physical stress or strain, or exposure to cold and wet. The disease is more common in men than in women. The symptoms may not appear until 20 or 30 years after the original infection. After the disease has persisted for a variable period, which may extend to several years, the patient becomes paralysed, and death usually occurs from pneumonia or tuberculosis.

LOCUST. Large species of short-horned grasshopper (Acridiidae). In hot climates locusts multiply at an alarming rate; and the nymphs, or immature locusts, which cannot fly, march steadily across country, devouring every green thing. In recent years tremendous damage has been

caused by locust plagues in the Southern Sudan, Kenya, and Palestine. In 1930 a wall of zinc sheeting was erected as a barrier along 20 m. from Beersheba to the coast. Pits are dug into which the locusts are driven, and aircraft and flame-throwers have been employed in fighting the pest. Much is done by collecting and destroying the eggs.

Locust Bean. A name for the pod of the carob tree. See Carob.

LODDON. River in the S. of England. It rises near Old Basingstoke, Hampshire, and flows 31 m. N.E. through S.E. Berkshire to the Thames at Wargrave.



Locomotive. Modern type of electric locomotive on Metropolitan Rly. Top, electric locomotive on L.N.E.R.

LODGE, HENRY CABOT (1850-1924). American statesman. Born at Boston, May 12, 1850, and educated at Harvard, he became a barrister in 1876. Sent in 1880 to the House of Representatives of Massachusetts, in 1887 he was elected a member of Congress. Eight years later he became a senator, being re-elected in 1899, 1905, 1911, and 1917, and becoming Republican leader in the Senate. He wrote *Lives of Washington, Hamilton, and Webster*; *One Hundred Years of Peace, 1913*, and edited the *Life and Letters of George Cabot*. He died Nov. 9, 1924.

LODGE, SIR OLIVER JOSEPH (h. 1851). British scientist. Born June 12, 1851, at Penkhill, Staffs, he was educated at Newport Grammar School and University College, London, where he was made assistant professor of applied mathematics in 1879. Professor of physics in University College, Liverpool, 1880-1900, he was principal of the university of Birmingham, 1900-20. In 1913 he was president of the British Association. He was made a knight in 1902, and his many other honours include the F.R.S.

Lodge's great work was done in examining the nature of ether and in wireless telegraphy. His scientific works include *Modern Views of Electricity*, 1889, rev. ed. 1907; *Life and Matter*, 1905; *Man and the Universe*, 1908; *Modern Problems*, 1912; *Ether and Reality*, 1925; *Relativity*, 1925; and *Science and Human Progress*, 1927.

Lodge devoted much time to the study of psychical research, and was president of the society, 1901-04. He wrote *Raymond, or Life and Death*, 1916, Raymond being his son, killed in the Great War, and *Why I Believe in Personal Immortality*, 1928.

LODGE, THOMAS (c. 1558-1625). English dramatist. The second son of Sir Thomas Lodge (d. 1584), lord mayor of London, he passed from Merchant Taylors' School to Trinity College, Oxford, and was a student at Lincoln's Inn. From his *Rosalynde*, a euphuistic romance, founded on the 14th century tale of Gaimyn, Shakespeare drew the plot of *As You Like It*. He collaborated with Robert Greene in *The Looking-Glass for London and England*, in which the



Locust. Specimen of migratory locust, *Schistocerca peregrina*

Biblical story of Nineveh is applied to the English capital, and composed a satire, *A Fig for Momus*, directed against critics.

LODGER. In English law, a tenant of a room or rooms, furnished or unfurnished, in the house of another person. The latter retains general control over the house as its master, while granting exclusive possession of the part to his tenant.

The Representation of the People Act, 1867, conferred the lodger franchise upon occupiers of lodgings in boroughs of the yearly value of £10 if let unfurnished and without attendance, and this franchise was extended to lodgers in the counties by the Act of 1884. The Franchise Act of 1918 reduced the qualifying period to six months. See Reform Acts.

LODI. City of Italy, in the prov. of Milan. It stands on the river Adda, 20 m. by rly. S.E. of Milan. Its fine cathedral dates from the 12th century. Pop. 20,000.

At the bridge of Lodi, on May 10, 1796, Napoleon defeated the Austrians, and marched to Milan. It was at Lodi that Napoleon was first called Le Petit Caporal.

LODY, CARL (d. 1914). German spy. A lieutenant in the German naval reserve, he constantly visited British ports before the Great War under the guise of a guide. After the outbreak of the war he was in London and at Rosyth. He was responsible for the sinking of the British cruiser *Pathfinder* by forwarding a telegram. From London he moved to Liverpool and Killarney, where he was arrested. Lody was shot in the Tower, Nov. 6, 1914, the first German spy executed in Great Britain during the war.

LODZ. Town of Poland. It is in the government, and 30 m. N.W., of Piotrkow, 75 m. S.W. of Warsaw, on the Lodka, and the headquarters of the textile industries of Poland. Other industries are brewing, distilling, the making of bricks steam boilers, and machinery. Pop. 597,000.

In the Great War an assault was made by the Germans on the town on Nov. 27-28, 1914, but was repulsed with heavy losses to them. About Dec. 2-3 a determined effort was made to take it by storm from Zgierz, but the attackers were driven back by fierce Russian counter-attacks. As, however, the German pressure increased, it was decided to evacuate the town, and this was effected on the night of Dec. 5 without loss.

LOEFFLER, FRIEDRICH (1852-1915). German bacteriologist. Born at Frankfurt-on-Oder, June 24, 1852, he was educated at Würzburg and Berlin universities. In 1882 he announced the discovery of the bacillus of glanders, and in 1884 the bacillus of diphtheria, his most notable discovery. With other investigators he carried out a series of researches into foot and mouth disease and malaria. He died April 8, 1915.

LOESS (Ger.). Fine-textured siliceous and calcareous earth, in some instances transported by the aid of water, in others by wind. A large part of N. China is covered by loess deposits. Large deposits are also found in Central U.S.A. and Central Europe. Included in the latter are the famous Black Earth Lands of S.W. Russia. Pron. lō-ess.

LOFODEN ISLANDS. Two groups of islands off the N.W. coast of Norway, to which they belong. Andø, Langø, and Hindø are sometimes known as the Vesteraalen Islands, and Moskenäsö, Flakstadö, and E. and W. Vaagö, Lofotodden, Vaerö, etc., as the Lofoden Islands proper. Between Lofotodden and Vaerö is the Maelström. The islands are mountainous and deeply indented. Dried fish is exported. Total area, 1,565 sq. m. Pop. 47,000.

LOFTUS or **LOFTHOUSE.** Urban dist. of Yorkshire (N.R.). It is 11 m. from Whithy, on the L.N.E.R. There are iron works and stone quarries. Pop. 9,012.

LOFTUS, MARIE CECILIA (b. 1876). British actress, popularly known as Cissie Loftus. Born in Glasgow. Oct. 22, 1876, she first appeared on the stage at Belfast in 1892, and in 1893 came to London, achieving great success by her impersonations of actors and actresses. In 1900 she toured in America, and in 1902 played at The Lyceum, London. In 1903 she rejoined Sothern's company in the U.S.A., but returned to England in 1915.

LOG. Apparatus used to measure the speed of a ship through the water. The early form consisted of a triangular piece of wood known as a chip. This was attached to a line knotted in spaces of 50 feet and thrown into the water, the speed being estimated by the number of knots paid out on the line when a sandglass, of the same proportion to an hour that 50 feet is to a mile, had emptied. The modern device spins, the rope rotating pointers on a dial or dials.

The speed of the vessel is entered in a hook called the log hook, in which are also recorded wind direction, weather, misdemeanours on the part of the crew, and other nautical data. The use of the log is first known from the writings of Purchas in 1607. See Knot.



Loganberry. Leaves, fruit, and (inset) flower of the shrub

LOGANBERRY. Hardy fruit-bearing shrub of the natural order Rosaceae. The berries are brownish red, and the plant is a hybrid between blackberry and raspberry. James H. Logan, its producer, died at Oakland, California, Aug. 3, 1928.

LOGGIA. Open gallery embodied in the side of a building so as to form a shelter. In combination with column and open arch it is a characteristic feature of Italian architecture, medieval and modern, and is frequently employed by the designers of country houses. A verandah is a form of loggia. See Architecture.

LOGIA (Gr. sayings). Name given to several fragmentary "Sayings of Jesus," on 3rd cent. papyri, found in Egypt by B. P. Grenfell and A. S. Hunt in 1897 and 1903. Whether authentic or not, they preserve an early tradition.

LOGIC (Gr. gathering, reasoning). Science of the laws of thought. As a systematic study, logic began in Athens in the 5th century B.C., and the Greek logicians had in mathematics a standard of exact knowledge which they could contrast with the belief or opinion imparted by the orator. But regarding logic as an inquiry into the nature of knowledge, we cannot study it without also studying metaphysics, an inquiry into the general nature of what is known.

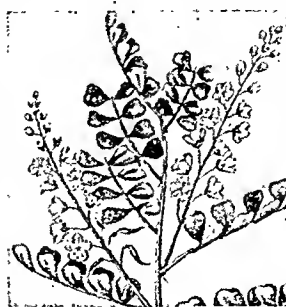
Aristotelian logic laid down a certain type of reasoning, called syllogistic, the deduction of a conclusion from given premises. Modern logic concerns itself firstly with a study of the method of the different sciences, and must pass from a consideration of method, which is its primary task, to a consideration of the ultimate nature of reality, and the relation of mind to the rest of reality, inquiries which are properly called metaphysical. See Aristotle; Metaphysics.

LOGONE. River and native state of Africa. The river rises in Cameroons (q.v.) and forms the boundary between Cameroons and French Equatorial Africa.

Formerly a vassal state of Bornu, the state of Logone now forms part of Cameroons. The native capital is at Birni Logone. The administrative centre is Küsseri.

LOGWOOD OR **CAMPEACHY WOOD** (Haematoxylon campechianum). Evergreen tree of the order Leguminosae. A native of Central America and W. Indies, its

leaves are divided into three or four pairs of egg-shaped leaflets, and the yellow flowers are produced in long sprays. The fruit is a thin pod. The heart-wood is brownish-red in colour, hard and heavy. Cut into chips, it furnishes, in combination with indigo and other materials, a fine black dye.



Logwood. Foliage and flowers of the American evergreen tree

LOHENGRIN (i.e. Garin of Lorraine). In medieval German romance, one of the heroes of the Grail cycle. The son of Parsifal and a knight of the Holy Grail, he was conveyed by a swan through the air to rescue Elsa, daughter of the duke of Brabant. Overcoming her enemy, he married Elsa, who was not to inquire of him as to his origin. She persisted in doing so, and when he was persuaded to tell her, the swan carried him away again to the Grail. Wagner took this legend as theme for his opera, Lohengrin, 1848.

LOHR, MARIE (b. 1890). British actress. Born in Sydney, July 28, 1890, she appeared on the stage in that city when quite a child. In 1901 she made her first appearance in London and acted with Sir H. Beerhohn Tree and Sir John Hare. From 1918 to 1925 Miss Lohr was manager of the Gaiety Theatre, London, producing L'Aiglon and other plays.

LOIRE. Longest river of France. It rises in the Cévennes, and flows some 610 m. to the Atlantic at St. Nazaire. It is subject to sudden floods. On its banks are Orléans, Blois, Tours, Angers, and Nantes. For small vessels the Loire is at times navigable for a great part of its course, but for safety there are a number of canals, some of which are cut parallel to the river, which they rejoin.

Loki. In Scandinavian mythology, giant of a race that reigned before the gods, the personification of fire as a destructive agent.

LOLLARDS. Name given in England in the 14th and 15th centuries to the followers of John Wycliffe (q.v.). It is derived from the Dutch lollen, to sing in an undertone, the name Lollard having been applied to the members of an association for burying the dead, founded at Antwerp about 1300. The Lollards attacked ecclesiastical endowments, the hierarchy, clerical celibacy, the Mass, and prayers for the dead; charged the clergy with immorality, and denounced war and capital punishment. Generally the Lollards were a poor and an unlettered people, and though repressed after 1401 by Church and State, they prepared the way to some extent for the Reformation. Part of Lambeth Palace is called the Lollards' Tower. See Lambeth.

LOMBARD, PETER (c. 1100-60). Italian schoolman. Born at Novara, Lombardy, he was educated at Bologna and Reims, and in 1159 became bishop of Paris. His theological

manual, *Libri quatuor sententiarum* (Four Books of Sentences), collated from the Scriptures and the works of the early fathers, served for a long time as the basis of all theological literature in Europe. A Commentary on the Psalms and Commentaries upon all the Pauline epistles are attributed to him. He died in Paris, July 20, 1160.

LOMBARDS. Ancient people of Europe. The Lombards or Langobardi, whose name perhaps means the men of the long axes, were Teutonic tribes who lived on the lower Elbe in the 1st century of the Christian era, burst into N. Italy, 568, and became masters of the plain of the Po, making Pavia their capital. The region they acquired received the name of Lombardy. They extended their conquests over half Italy as far as the southern duchy of Benevento. From the middle of the 7th till the middle of the 8th century Lombard dukes and kings were a perpetual menace to the papacy. Pepin began their subjugation, which was completed in 774 by his son, Charlemagne.

LOMBARD STREET. London thoroughfare running from the Bank of England to Gracechurch Street, across which it is continued by Fenchurch Street. It derives its name from the Lombards who settled here as money lenders about the 12th century. Some of the great British and foreign banks have their offices here.

LOMBARDY. Territorial division of N. Italy. It borders on the Swiss and Austrian frontiers, and embraces the provs. of Bergamo, Brescia, Como, Cremona, Mantua, Milan, Pavia, and Sondrio. Except in the N. the surface is virtually a fertile and well-cultivated plain. The division is well watered by the rivers Po, Adda, Oglio, Ticino, etc., and is well canalised and irrigated. The beautiful lakes of Como and Iseo are wholly within Lombardy. The climate is very hot in summer and cold in winter. Silk is manufactured, and the mulberry tree cultivated, while rice, maize, flax, hemp, wine, fruit, and nuts are grown. The chief town is Milan. Lombardy was named after the Lombards (q.v.), and incorporated in the new kingdom of Italy 1861. Its area is 9,190 sq. m. Pop. 5,400,263.

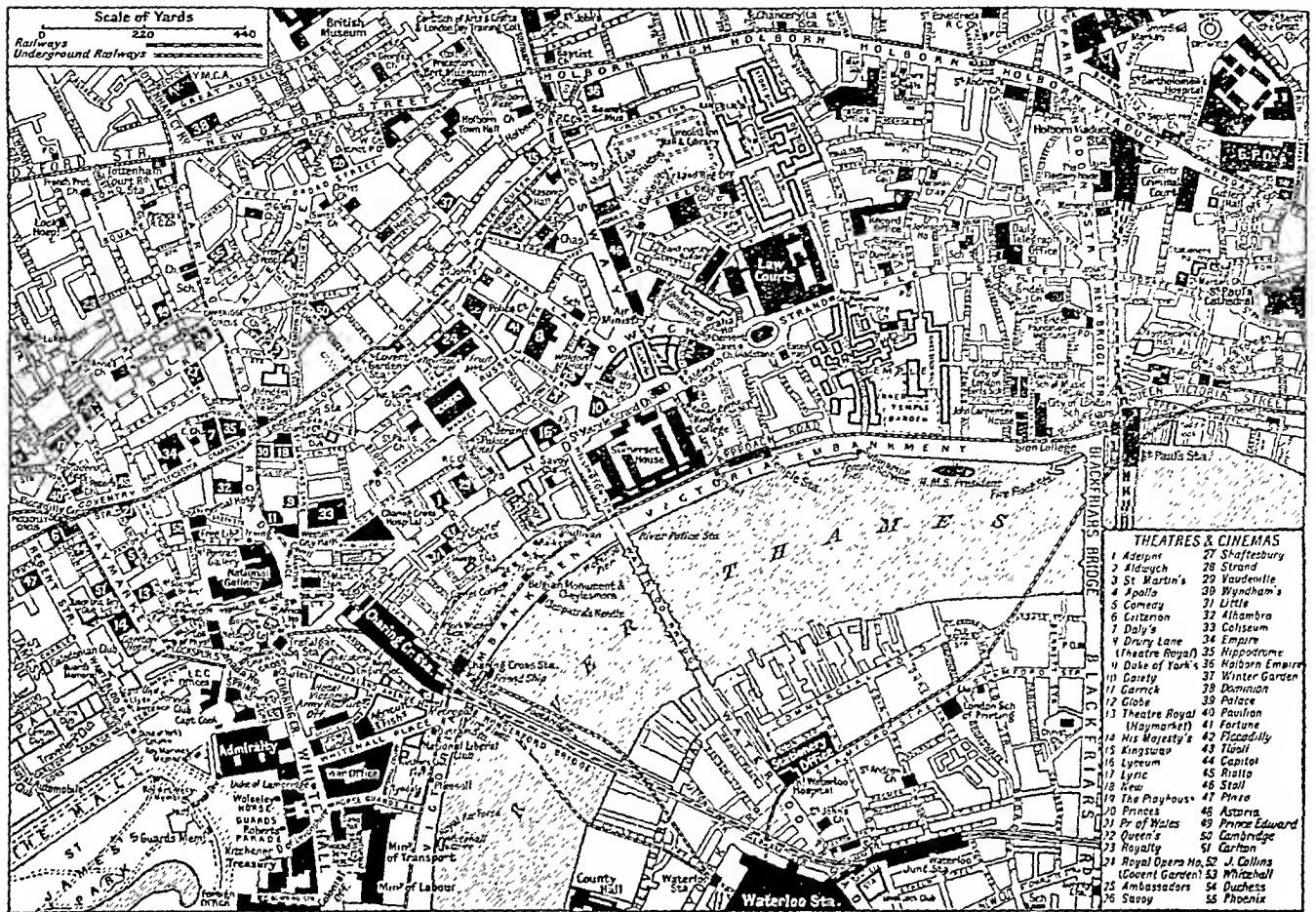
LOMBARDY POPLAR (*Populus italica* or *pyramidalis*). Tall-growing tree much used for ornamental purposes. It is of hybrid origin, one of the parents being the black Italian poplar (*P. nigra*), and attains a height of from 100 to 150 ft.

LOMBOK. Island of the Dutch E. Indies. A mountainous volcanic island of the Sunda group, it culminates in a peak 12,379 ft. high. The fertile valleys yield rice, maize, tobacco, sugar cane, and indigo. The chief towns are Mataram and Ampanam. Dutch control dates from 1894. Its area is 3,060 sq. m. Pop. about 470,000.

LOMBROSO, CESARE (1836-1909). Italian criminologist. Born Nov. 18, 1836, he became an army surgeon, 1859, professor of mental diseases at Pavia University, 1862, and professor of forensic medicine and psychiatry at Turin. In 1875 he published his monumental work *L'uomo delinquente* (The Criminal), in which he promulgated the theory that there is a definite criminal type which can be distinguished from the normal type both anatomically and psychologically. He also wrote



Lombardy Poplar in winter, showing vertical direction of branch growth



London. Plan of the central district from S. Paul's Cathedral (top right) to Piccadilly Circus, showing the churches, public buildings, theatres, etc.

The Man of Genius (Eng. trans. 1891), Crime, its causes and remedies (Eng. trans. 1911). He died Oct. 19, 1909.

LOME. Seaport of French Togoland. Under the German administration it was the capital of the country. Lome was captured by a British force on Aug. 7, 1914. Pop. 9,400. The name is also that of a district with 119,000 inhabitants. See Togoland.

LOMOND. Scotland's largest loch. It covers 27 sq. m. and has a length (between Ardlui and Balloch) of 23 m. and a breadth of 5 m. It lies between Stirlingshire and Dumbartonshire, amid fine scenery. It receives the Endrick, Luss, Arklet, and other streams, and its waters pass by the Leven and the Clyde to the sea. On the E. side is Ben Lomond (q.v.). In 1930 the property of the duke of Montrose here was offered for sale.

LONDON. Capital, chief seaport and airport of England, capital of the British Empire, and the largest city in the world. It borders the Thames from Kew to Barking. Greater London covers 700 sq. m. and its population in 1930 was estimated at over 8,000,000. The administrative county covers 116 sq. m. The postal area covers 240 sq. m.

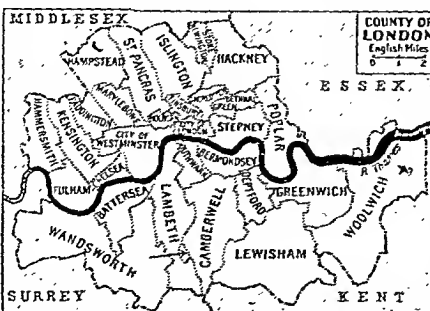
Till the 19th century London meant the historic square mile which is still called the city of London. Greater London is the result of the linking of surrounding villages and towns with the centre for common purposes. It includes the ancient city, the county of London, and parts of Kent, Surrey, Middlesex, Essex, and Herts which lie outside the administrative county. The total rateable value is put at £78,000,000. A great and growing industrial area, and the most important retail centre in the country, London is also the world's chief financial centre.

The city, which was granted its first charter in 1079, and has a history dating back to A.D. 64, is governed by a lord mayor 25 aldermen, and a common council of 206; it has its own police force of 1,100 and controls most of the markets. The county, created in 1888, and embracing 28 bors., set up in 1899 (one of which became the city of Westminster), is, in regard to its common interests, under the control of the London County Council which administers an extensive tramway service, the London fire brigade of 2,000, the elementary and many secondary schools and polytechnics, and the asylums and poor law institutions. The Thames below Teddington is under the control of the Port of London Authority. The Metropolitan water board provides an annual supply of 1,722,600,000 gallons apart from that derived from private wells. The board serves an area of 574 sq. m., and the net water rental is about £4,700,000. The Metropolitan Police under the Home Office, numbers 20,000 with an auxiliary reserve of a like

number. Ecclesiastically London has been a diocese since A.D. 604 and has more than 1,500 churches and chapels.

Among the chief buildings are Westminster Abbey, S. Paul's Southwark, and the Westminster (Roman Catholic) cathedrals; the Tower, Buckingham, S. James's, Hampton Court, Kensington, Lambeth and Fulham palaces; Marlborough House, Houses of Parliament, Bank of England, Guildhall, Mansion House, Royal Exchange, Monument; British, London, and United Services Museums and an extensive group of museums at S. Kensington; Imperial Institute; National, National Portrait, and Tate Galleries; Hertford House (Wallace Collection), Burlington House, General Post Office, Chelsea and Greenwich Hospitals for service pensioners, halls of the livery companies, Inns of Court, the ancient city churches, Charterhouse, Law Courts, Old Bailey, Admiralty War Office, and other Government buildings in Whitehall, and the London County Hall. Notable recent additions are Australia House (q.v.), Canada House and India House.

Places of amusement include the Crystal and Alexandra Palaces, Covent Garden Opera House, Albert and Queen's Halls, and numerous theatres, cinemas, and concert halls. There are many free libraries. In the W. vast new stores and palatial hotels and flats and in the E. imposing new business premises have been built in recent years. In addition to Hyde, Regent's, S. James's, and the Green parks, Kensington Gardens, Epping Forest, and Burnham Beeches, there are more than 100 parks, commons, and open spaces. In Regent's Park are the Zoological Gardens; at Kew the Botanical Gardens and meteorological observatory, at Greenwich is the astronomical observatory. There are about 200

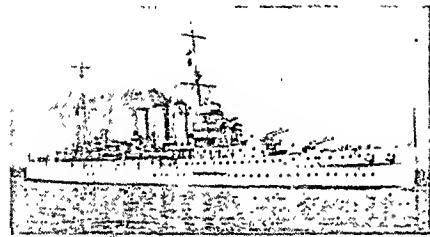


London County. Plan showing the disposition of its 28 component boroughs, created in 1899

hospitals and asylums and allied institutions. The chief markets are Covent Garden, Smithfield, Leadenhall, Billingsgate, Spitalfields, Shadwell, Caledonian, and Borough. The educational establishments are numerous. Several old public schools have migrated to the country, but Westminster, St. Paul's (now at Hammersmith), and Merchant Taylors' remain.

All the great rly. lines have terminal stations in London. Within the area are over 700 m. of passenger lines, mainly electric, including the Underground and Tube systems, carrying 600,000,000 passengers a year, between 5,000 and 6,000 motor buses, carrying over 1,900,000,000; 356 m. of tramways, which carry over 900,000,000; large numbers of taxi-cabs; and many fleets of motor coaches which compete with the railways for long-distance traffic. The airport of Croydon, reconstructed and reopened in 1928, is the finest in the world. See Waddon.

LONDON. City and port of Ontario. In Middlesex co., it stands on the Thames, 119 m. from Toronto. It is served by the C.N. and C.P. and other rlys. Agricultural implements, machinery, chemicals, furniture, leather, etc., are made, and there are petroleum refineries and railway works. Electric power is obtained from Niagara. Pop. 67,000



H.M.S. London, name-ship of a class of cruisers. She was completed in 1929
S. Cribb: Southsea

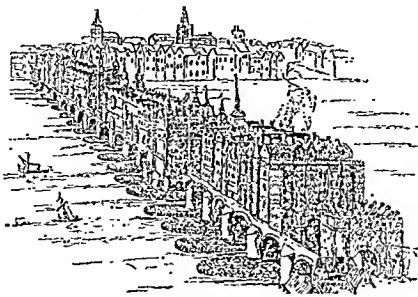
LONDON. Name-ship of a class of cruisers. Begun in 1926 and completed in 1929, she displaces 10,000 tons, or with a full load 14,000 tons. Her principal armament is 8-8 in. guns and her extreme length is 633 ft. She can steam 32-25 knots and is built to burn oil fuel. The other ships of this class are Devonshire, Shropshire, and Sussex.

LONDON, DECLARATION OF. International agreement about naval prize law. It was agreed to in 1909 by an international naval conference held in London, on the invitation of the British government. It consisted of 71 articles, in which was embodied international law relating to naval warfare, as then understood by international lawyers in most countries. When the Great War broke out, in 1914, the declaration had not been ratified by the powers and it broke down.

LONDON, PORT OF. Name given to the lock area of London and adjacent parts of the Thames under the Port of London Authority. It extends between Havengore Creek, Essex, and Teddington. The docks are:

Victoria and Albert .. .	1,020 acres
Tilbury .. .	716 "
Surrey Commercial .. .	380 "
W. India .. .	241 "
Millwall .. .	231 "
King George V .. .	186 "
London .. .	100 "
E. India .. .	68 "
S. Katherine's .. .	231 "

The authority consists of a chairman, a vice-chairman, and 28 members, chosen by the L.C.C., Board of Trade, City Corporation, Trinity House, Admiralty, and the traders using the port, the trade of which in 1930 was valued at £700,000,000. The water area of the docks is 720 acres with 45 miles of quays. In 1929-30 the authority made great improvements in its docks at Tilbury. The offices are in a fine building in Trinity Square, E.C.



London Bridge. Left, old London Bridge; it had 19 arches, wooden houses along each side, a chapel, and fortified gates at each end. Right, the present bridge, designed by Rennie and opened in 1831

LONDON, TREATY OF. Name given to several treaties signed in the English metropolis. One, signed Jan. 14, 1814, established the kingdom of the Netherlands, with the prince of Orange as king. Another, in 1839, declared Belgium neutral. This was the treaty violated by Germany in 1914. The term treaty of London is given to the secret agreement signed April 28, 1915, between Great Britain, France, and Russia on the one hand, and Italy on the other. See London Naval Treaty.

LONDON, JACK (1876-1916). American novelist. Born at San Francisco, Jan. 12, 1876, he had an adventurous and roving life, chiefly in America. He died in California, Nov. 22, 1916.

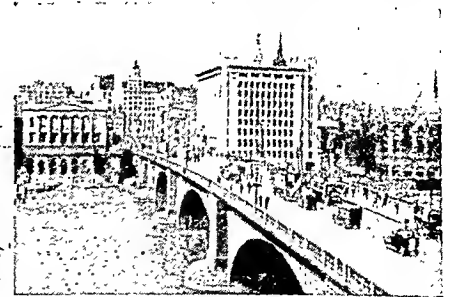
Of his books of adventure the best known are *A Daughter of the Snows*, 1902; *The People of the Abyss*, 1903; *The Call of the Wild*, 1903; *The Sea Wolf*, 1904; *The Moon Face*, 1906; *White Fang*, 1907; *Burning Daylight*, 1910; *Martin Eden*, 1910; *The Mutiny of the Elsinore*, 1914; *The Valley of the Moon*, 1914; and *The Night-Born*, 1916.

LONDON BRIDGE. One of the Thames bridges in London. Designed by John Rennie (d. 1821), it extends from Adelaide Place and King William Street, E.C., to High Street, Southwark, S.E. William IV opened the bridge, Aug. 1, 1831. Built of granite, it is 928 ft. long and 63 ft. wide. London Bridge Southern Rly. station is on the S. side and Adelaide House on the N.

Its immediate predecessor, also of stone, was built on the site of a wooden bridge. Completed in 1209, old London Bridge stood E. of the existing structure. On fortified gates at each end heads of traitors were exposed on spikes. The wooden houses on each side were removed in 1758. Between the 13th and 14th piers from the city side was a drawbridge. In the centre was a chapel to S. Thomas of Canterbury.

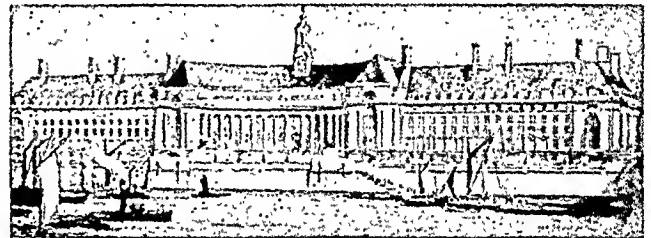
LONDON COUNTY COUNCIL. Administrative body set up in 1888 to manage the affairs of the newly created county of London. It consists of a chairman, 20 aldermen and 124 councillors. The term of office for aldermen is 6 years; for councillors, 3 years. The Offices are at the County Hall, Westminster Bridge, S.E.1, and the Old County Hall, Spring Gardens, S.W.1.

The council spends over £20,000,000 a year and has a net debt of over £73,000,000. It looks after tramways, drainage, housing, etc., but not after the supply of gas, water, and



electricity. Since 1902 it has been responsible for both elementary and secondary education within the county, and the estimate for this for 1929-30 was £12,250,955. The council has not quite the same authority within the city of London as it has in other parts of the county. The members of the council are divided into progressives, municipal reformers or moderates, and labour, and the elections are usually fought on party lines.

LONDONDERRY. County of Northern Ireland. With a coastline on the N., it has an area of 816 sq. m. The chief rivers are the Roe, Bann, Foyle, Moyola, and Faughan. The surface is level near the coast, rising to



London County Hall, Westminster. River front of the building

considerable heights in the S., where are the Sperrin Mts. (1,200 ft.). Londonderry, or Derry, is the chief town; other places include Coleraine, Limavady, Dungiven, Moneymore, and Magherafelt, and the watering places of Port Stewart, Castlerock, and Downhill. The county took the prefix



Londonderry. Map of the county on the north coast of Ulster

of London when, in 1609, much of the land was made over to the corporation of London. Pop. 94,534.

LONDONDERRY. City, county borough, and seaport of co. Londonderry, Northern Ireland, also the county town. Known also as Derry, it stands on a hill near where the river Foyle falls into Lough Foyle, 95 m. from Belfast, on the G.N. Rly. of Ireland. The city is still surrounded by walls with gates. S. Columba's, the Protestant cathedral, dates from the 17th century. The Roman Catholic cathedral of S. Eugenius is modern. Foyle College dates from 1617. The chief industries are flour-milling, distilling, tanning, bacon curing, and linen manufacture. The hishopric is known as Derry and Raphoe. Pop. 45,159.



Londonderry. Guildhall and Ship Quay Gate

The siege of Londonderry was an enterprise of James II and the Irish Jacobites in 1689. James began siege operations on April 19. In mid-June a relieving fleet entered Lough Foyle with provisions, but they waited six weeks outside the harbour. Ordered at last to attack, the ships broke the boom, June 30, and raised the siege, which had lasted 15 weeks. Its hero was George Walker, a clergyman.

LONDONDERRY, MARQUESS OF. British title borne by the family of Vane-Tempest-Stewart. There was an earl of Londonderry in the 17th century, but the title had twice become extinct when in 1789 Robert Stewart, M.P. (1739-1821), of Mount Stewart, co. Down, was made Baron Londonderry, in 1796 earl of Londonderry, and in 1816 marquess. His son was prominent under the courtesy title of Viscount Castlereagh. Castlereagh's half-brother, Charles William, the 3rd marquess (1778-1854), was a soldier and a diplomat. He married the heiress of the two families of Vane and Tempest, and obtained through her rich estates in Durham.

Charles Stewart Vane-Tempest-Stewart (1852-1915) became the 6th marquess in 1884. He was successively lord-lieutenant of Ireland, postmaster-general, and president of the board of education. He was also lord president of the council, 1903-05. Charles, the 7th marquess (b. 1878), was M.P. for Maidstone 1906-15, and in 1921 under-secretary for air. He was minister of education, Northern Ireland, 1921-26, and first commissioner of works, 1928-29, in the Baldwin ministry. The family seats are Wynyard Park, Durham, and Mount Stewart, co. Down.

LONDON GAZETTE, THE. Official organ of the British Government and the appointed medium for all official documents. It is published on Tuesdays and Fridays, similar publications for Ireland and Scotland being The Irish Free State Gazette, published in Dublin; The Belfast Gazette; and The Edinburgh Gazette.

LONDON MUSEUM. Institution formed to show the history of the English metropolis. It was founded in 1911 to commemorate the coronation of George V. King George, in addition to being a contributor, made over a set of apartments at Kensington Palace as a temporary home for the nucleus of the collection, and formally opened it in person, March 21, 1912. Lancaster House, presented to the nation in 1912 by Sir W. H. Lever (later Lord Leverhulme), was taken over by the government in 1913, and the museum was reopened there in 1914. The exhibits are arranged in chronological order.

LONDON NAVAL TREATY. Treaty signed in London, April 22, 1930, by the British Empire, U.S.A., Japan, France, and Italy in connexion with naval disarmament. It was concerned exclusively with naval material; personnel not entering into the negotiations. By it a stated number of capital ships were to be scrapped or disarmed without replacement. Britain agreed to four battleships and one battle-cruiser, the U.S.A. to three battleships, and Japan to one battle-cruiser to be scrapped or modified.

Other reductions were in connexion with tonnages of other vessels permitted up to Dec. 31, 1936; for example, Britain being allowed 146,800 tons for cruisers with guns above 6.1 in., the U.S.A. of similar craft up to 180,000 tons, and so on. Under the treaty Japan was allowed 105,500 tons in destroyers, as against Britain's 150,000 tons. On the major provisions the five powers were unanimous, but Italy and France disagreed on the question of their naval tonnage. See Cruiser; Five-Power Naval Treaty; Navy.

LONDON PRIDE. (*Saxifraga umbrosa*.) Perennial evergreen herb of the natural order Saxifragaceae. It is a native of Spain, Portugal, Corsica, and Ireland. The leathery, broad, oval leaves grow in a rosette, from which the branched, leafless flowering stem arises. The small flowers have reddish sepals and white petals dotted with red. London Pride is also called None-so-pretty and S. Patrick's cabbage.



London Pride, spray of flowers

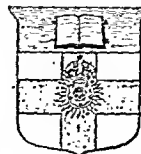
LONDON REGIMENT. Unit of the British army. It consists of two regular battalions of the city of London regiment (Royal Fusiliers) and a number of territorial ones which were united together in 1907.



London Regiment. Above, badge of London Scottish; below, of London Rifle Brigade

Of these the 5th is the London Rifle Brigade, the 13th the Kensingtons, the 14th the London Scottish, the 16th the Queen's Westminster, the 18th the London Irish Rifles, and the 28th the Artists' Rifles. These and also the other battalions of the regiment have a fine record of service in the Great War. The London Scottish, formed in 1859, was known until 1907 as the London Scottish Rifle Volunteers.

LONDON UNIVERSITY. British educational body. It was founded in 1836 for the purpose of examining and conferring degrees only. It was unsectarian. In 1858 its degrees, which had previously been confined to members of colleges affiliated to it, were thrown open to all. From that time dates their great popularity. In 1808 the university began to send a member to Parliament. In 1900 it was reconstituted, and again in 1929. London university now consists of incorporated colleges and departments, schools of the university, and institutions having recognized teachers. In addition there is a general organization which has its headquarters at South Kensington, S.W.7.



London University arms

The incorporated colleges are University, King's, and King's College for Women. The departments include the Goldsmiths' College at New Cross, and the Bartlett School of Architecture. The schools of the university, a feature dating from the reorganization of 1900, include the Imperial College of Science and Technology, the School of Oriental Studies, East London College, London School of Economics and South-Eastern Agricultural College, and three colleges for women—Bedford, Royal Holloway, and Westfield. In addition there are a number of theological colleges, the medical schools attached to the great London hospitals, and other institutions. A site for new buildings has been acquired in Bloomsbury.

LONG. Loch of Scotland. An arm of the firth of Clyde, it extends for 17 m. N.N.E. between Argyllshire and Dumbartonshire. Its extreme breadth is about 2 m.

LONG, WALTER HUME LONG, 1ST VISCOUNT (1854-1924). British statesman. Born July 13, 1854, in 1880 he was elected Conservative member for N. Wiltshire. From 1885 he represented the Devizes division of Wiltshire; from 1892 the West Derby division of Liverpool; from 1900 South Bristol; from 1906 South Dublin; from 1910 the Strand; and from 1918-1921 the St. George's division of Westminster. Long was made parliamentary secretary to the local government board in 1886; he was president of the board of agriculture 1895-1900, and of the local government board 1900-5, then becoming chief secretary for Ireland. From 1916-18 Long was at the colonial office, and in 1919 he became first lord of the admiralty. He resigned in Feb., 1921, and was created a viscount. He died Sept. 26, 1924.

LONG ASHTON. Village of Somerset. It stands on the Avon, just outside Bristol, on the G.W. Rly. Here the university of Bristol has an agricultural research station.

LONGBENTON OR BENTON. Urban district of Northumberland. It is 4 m. N.E. of Newcastle, on the L.N.E.R. There are collieries and stone quarries. Pop. 13,750.

LONGBOW. Military weapon from the time of Edward II until the introduction of firearms. The national weapon of the English, it was made generally of yew or ash. See Archery; Bow.

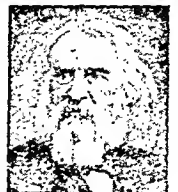
LONGCHAMPS OR LONGCHAMP. French racecourse and review ground. It is in the Bois de Boulogne, to the west of Paris. Near by are the remains of the abbey of Longchamps.

LONG EATON. Urban dist. and market town of Derbyshire. It is 7 m. from Nottingham and 7 m. from Derby, on the L.M.S. Rly. The chief industries are the manufacture of lace and wagons. Market day, Sat. Pop. 22,144.

Little Eaton is a village, 2½ m. from Derby, on the L.M.S. Rly.

LONGFELLOW, HENRY WANSWORTH (1807-82) American poet. Born at Falmouth, now Portland, Maine, Feb. 27, 1807, he spent some time in travel in Europe. In 1829 he was made professor of foreign languages at Bowdoin, and in 1836 he became professor of modern languages and literature at Harvard. He retired in 1854. He died at Cambridge, Mass., March 24, 1882.

Longfellow's work was many-sided and voluminous. It included the writing of textbooks, and was marked throughout by a deep sense of his mission as a teacher. His lyrical gift is remembered best by such poems as Hymn to Night, A Psalm of Life, The Wreck of the Hesperus, The Village Blacksmith, Excelsior, etc. His skill in narrative verse is



Henry W. Longfellow. American poet

seen in *The Courtship of Miles Standish*. Of his longer works, the more notable are *Evangeline* (see illus. p. 673); and the *Song of Hiawatha*, an epic of the red man. His dramatic works include *The Spanish Student*. The *Golden Legend* is the best part of the long dramatic poem *Christus: a Mystery*. His translations include a metrical version of the *Divina Commedia*.

LONGFORD. County of the Irish Free State, in the prov. of Leinster. Wholly inland, its area is 421 sq. m. The surface is level, except in the N.W. There is much bog land. The chief rivers are the Shannon, on the W. boundary, Inny, and Camlin. It has many lakes, including Lough Ree, on the border, and Gowna. Horses and cattle are reared, and there are dairy farms. Longford is the county town. Granard and Ballymahon are other towns. The county is served by the G.S. Rlys. Longford was formerly known as Annaly. Under Henry II it was occupied by the English and was for a time part of Meath, then of Westmeath. Pop. 39,847



Longford. Map of the inland county of Leinster

LONGFORD. Urban dist. of co. Longford, Irish Free State, also the county town. It stands on the Camlin, 76 m. from Dublin, on the G.S. Rlys. The Roman Catholic cathedral of S. Mel is a fine modern building. The industries include trade in agricultural produce, tanneries, and corn mills. Longford is the seat of the bishop of Ardagh. Pop. 3,685.

Earl of Longford is an Irish title borne since 1785 by the family of Pakenham. The earl's seat is Pakenham Hall, co. Westmeath, and his eldest son is known as Lord Silchester.

LONGFORD. Village of Wiltshire. On the Avon, 3½ m. S.E. of Salisbury, it contains a castle, seat of the earl of Radnor, built in 1591 and since much enlarged. It contains a magnificent collection of pictures.

LONGHORN. Breed of British cattle, distinguished by the great length of the widely branching, drooping horns. Before the development of the shorthorn, this was the principal British breed. Its great value is for the production of cheese, as its milk is richer in curd than that of most dairy breeds. Apart from its great horns, it closely resembles the shorthorn in general build and colour. A white line down the back is another distinguishing point. See Cattle.

LONGICORN or **LONGHORNED BEETLE.** Beetles of the family Cerambycidae. Representatives are found all over the world; it receives its name from its very long antennae, which, in the male, often exceed the length of the body. Beetles of this family are brightly coloured. The larvae cause great damage to fruit and timber trees, feeding on the wood.

LONG ISLAND. Island of U.S.A., forming the S.E. end of New York State. Separated from the New York mainland and Connecticut by Long Island Sound, it is 118 m. long by 13 m. to 23 m., and covers 1,682 sq. m. At its W. extremity are the borough of Brooklyn and Long Island City—a separate city until 1898, when it became part of the borough of Queens, New York City. Coney Island is a popular summer resort, and Sheephead Bay has a racecourse. On Aug. 27, 1776, the British defeated the Americans in the battle of Long Island.

Longitude. Distance of any place on the earth's surface E. or W. of a given meridian. See Latitude.

LONGLEAT. Seat of the marquess of Bath, 3 m. from Warminster in Wiltshire. The house was begun in 1667 at the cost of Sir John Thynne and after designs by John of Padua. It was completed about 1680, and later Wren added something to it. In the 19th century it was improved by Wyatt. Built in the Italian style, it has a collection of portraits by Holbein, Reynolds, Lely, Kneller, Van Dyck, and others.

LONG PARLIAMENT. Name given to the English Parliament which met on Nov. 3, 1640, sat almost continuously until 1653, and was revived in 1659. It secured the expulsion of bishops from the House of Lords, and from 1642 to 1649 conducted the Civil War. In December, 1649, some of its members, 143 Presbyterians, were forcibly excluded, but the remainder, called in derision the Rump, continued in session. They set up the court for the trial of the king, abolished the House of Lords, and carried on the Government until April, 1653, when Cromwell turned them out. In May, 1659, the Rump was restored. On March 16, 1660, the Parliament passed an Act declaring itself dissolved. From 1640 to 1653 its speaker was William Lenthall, while Pym, Hampden, Cromwell, and Hyde were prominent members of it. See Cromwell, Oliver.

LONGPORT. Type of English porcelain. Earthenware was manufactured at Longport, near Burslem, Staffordshire, 1773. In 1793 Davenport produced a porcelain with hard, transparent body. His shapes and decorative treatment were good, and he produced many important royal table services.

LONG PRIMER.

Name of a size of printing type. Known also as 10 point, it is a size larger than bourgeois and a size smaller than small pica, or about 7½ lines to an inch. Great primer, or 18 point, is four sizes larger.

This line is set in long primer.

LONGREACH. Town of Queensland. It is 248 m. W. of Rockhampton on the Barcoo River. Its artesian bore makes it the chief stock-watering centre of the surrounding district. Pop. 2,500.



Longicorn. Specimen of *Leptoderia fimbriata*

LONG SERVICE MEDAL. Name of a decoration given to men of the navy, army, and air force and also to members of the

auxiliary forces. It bears the inscription "For long service and good conduct," and to qualify for it a man must have served for at least 18 years. The medal was instituted in 1830. See Medal.



Long Service Medal. Reverse of naval medal

LONGSHIPS. Number of rocks off Land's End, Cornwall. On one stands Longships lighthouse, with an occulting light visible for 16 m.



Longleat, Wiltshire. South front of the mansion of the marquess of Bath

LONGWOOD. Name of the residence at St. Helena where Napoleon passed the last years of his life. It obtained its name from the Longwood Plains situated in the N.E. of the island. See Napoleon.

LONGWY. Town of France. It is 40 m. N.N.W. of Metz, on the Belgian frontier, and consists of a walled upper town on a steep rock, and a lower industrial one. Commanding the approach of the Chiers valley from Luxemburg, it is on a strategic railway which the Germans seized at the outbreak of the Great War, and possessed a fort, one of a chain designed for the protection of the N.E. frontier of France. After a bombardment of some days it capitulated to the German crown prince, Aug. 28, 1914. Pop. 12,101.

LONSDALE, EARL OF. British title borne with a short interval since 1784 by the Lowthers. The family dates back to the time of Edward I or earlier, but the existing branch is descended from Sir Christopher Lowther (d. 1617). Sir James Lowther (1736-1802), a baronet, inherited the great wealth of Viscount Lonsdale and of other Lowthers. He was made an earl in 1784, but the earldom died with him. A kinsman, Sir William Lowther, Bart., became Viscount Lowther, and was made an earl in 1807. He built Lowther Castle (q.v.), Penrith, the chief seat of the family. In 1882 Hugh Cecil (b. 1857) became the 5th earl, and won a reputation as a patron of sport.



5th Earl of Lonsdale, British sportsman Russell

LONSDALE, FREDERICK (b. 1881). British dramatist. Born Feb. 5, 1881, he made his name as a dramatist with *The King of Cadonia*. His other successful plays include *The Best People*; *Maid of the Mountains*; *Spring Cleaning*; *The Last of Mrs. Cheyne*; *The High Road*; and *Canaries Sometimes Sing*.

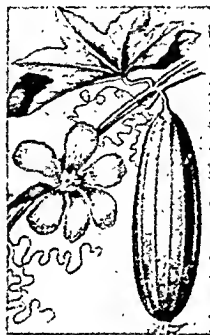
LOO. Card game. Three card loo may be played by several persons. Three cards, one at a time, are dealt to each player. An extra hand,

termed a miss, is also dealt, which the eldest player may exchange for his own, but if he looks at the miss he must take it or be looted. So long as the miss remains on the table any player may take it in his turn. Each dealer puts a certain stake into the pool. The card left at the top of the pack is turned for trumps.

Each player in turn either decides to play his own cards, take the miss, or drop out. The eldest hand then leads a card, and the next player must head the trick, if possible, either by a higher card or trump. Each player's card is left in front of him as played: the winners taking a third of the pool for each trick and those players who have not won a trick are looted, having to pay a certain stake into the next pool.

LOOE. Seaport, watering place, urban district, and market town of Cornwall. It stands on Looe Bay, 16 m. from Plymouth, on the G.W. Rly., and is divided by the river into East Looe and West Looe. The buildings include the parish church of S. Martin, with a Norman doorway, the restored chapel of S. Nicholas, and the old town hall. Market day, last Mon. in month. Pop. 2,890.

LOOFAH (*Luffa aegyptiaca*). Climbing herb of the order Cucurbitaceae. A native of Africa, it has long stems that climb by means of tendrils. The fruit is long, like a cucumber, but stouter. The flesh is permeated by a network of tough fibres, and when the flesh is macerated this is left intact and forms the bath loofah, which is used as a sponge.



Loofah. Leaf, flower, and fruit

LOOM. Apparatus for weaving cloth. In its simplest form the horizontal loom provides for tethering a bar carrying the lengthwise warp threads to a stake in the ground. A bar at the farther end is secured to the weaver, who has thus a straight set of warp threads through which to cross and interlace the weft threads. A comb-like implement serves to beat up the weft threads closely together after being interlaced. A device called a heddle enables alternate warp threads to be raised, so forming a shed or opening between the raised and the unraised groups, through which the weft thread can readily be passed.

Later the apparatus was improved to include a frame, a warp beam, and a cloth beam on which to roll the woven fabric. The weft was contained in a spool within a shuttle. In 1733 John Kay of Bury invented his fly-shuttle. The weaver was then enabled to throw his shuttle by jerking a cord instead of passing it through more laboriously by hand. Robert Kay, in 1760, invented the drop-box loom, enabling a second, third, or fourth colour or kind of weft to be used at will. Cartwright patented his power loom in 1785-87. Later, Jacquard invented his arrangement for permitting an individual set of warp threads to be lifted at one time automatically. See Weaving.

LOOS. Village of France, in the dept. of Pas-de-Calais, 3 m. N.W. of Lens. Before the Great War it was a busy mining centre. Situated in a slight hollow, it is overlooked on the S.E. by Hill 70, and on the N. by a long ridge extending toward La Bassée.

BATTLE OF LOOS. This was an offensive undertaken by the British and French armies in 1915. At dawn on Sept. 25 the 8th division of the 3rd British corps advanced against Bridoux and carried some trenches, but the force was later withdrawn. After attacks elsewhere the

position about noon was that the British had broken deep into the German front from Haines southwards and driven a large salient into it. Meantime strong German reserves had arrived on the scene. The corresponding French attack gained ground about Souchez, but the village itself was not carried.

On Sept. 26 the British were counter-attacked by the Germans, who reached and held the western edge of the Quarries, and the British 24th division, attempting an advance on Hulluch, were beaten back with heavy losses. On this day the French fought their way through Souchez. On the following day the Germans renewed the offensive, recovered Fosse 8 and forced their way into the Hohenzollern Redoubt. Heavy fighting also took place on Hill 70, but by the evening the battle had come to a standstill. On Sept. 29 the British repelled two heavy attacks on the redoubt. For some days the battle fluctuated, until on Oct. 8 the British Guards more than held their own against a great German attack N. of Loos. After a determined but costly British attack from the Hohenzollern Redoubt southwards on Oct. 13, trench warfare supervened. The net result of the battle was the gain of a salient driven into the German front N. of Lens. The British losses exceeded 60,000 and those of the French were very heavy.

LOOSESTRIFE. Name applied to several plants, but belonging properly to *Lysimachia*, once thought to have the power of taming wild beasts. The common loosestrife (*L. vulgaris*) is an erect perennial herb of the order Primulaceae, a native of Europe, N. Africa, and N. Asia. It has a creeping root-stock and broad, lance-shaped leaves; the yellow flowers grow in clusters at the top of the stem. The purple loosestrife is *Lythrum salicaria*, belonging to the order Lythraceae.



Loosestrife. Flower spray of purple loosestrife

LOPE DE VEGA (1562-1635). Spanish poet and dramatist, whose full name was Lope Felix de Vega Carpio. He was born in Madrid, Nov. 25, 1562. As a soldier he took part in the Armada expedition against England, belonging to the same regiment as Cervantes. In 1614 he took holy orders, became a member of the order of S. Francis, and was a familiar of the Inquisition. He amassed honours and wealth and enjoyed universal popularity. He died at Madrid, Aug. 27, 1635.



Lope de Vega, Spanish poet

Lope de Vega wrote nearly 2,000 plays, religious dramas, and interludes, of which 430 plays and 50 autos, or religious dramas, are extant. Chief founder of the national drama of Spain, his best-known plays include *La Carbonera*, *Bella Aurora*, *Noche de San Juan*, and *Por el Puente de Juna*. His other works embrace epics, poems, and prose romances, including a long continuation of Ariosto's *Orlando Furioso*.

LOQUAT (*Photinia japonica*). Japan quince or medlar. An evergreen shrub or small tree of the order Rosaceae, it is a native

of Japan and S. China. Its large, ohlong, wrinkled leaves are downy on the underside. The white flowers are in drooping sprays, and the orange-red, downy fruit hangs in clusters. Its flavour is much like that of a sharp apple, but the fruit is not edible until about May.

LORAINÉ, ROBERT (b. 1876). British actor and airman. Born at New Brighton, Jan. 14, 1876, he made his first stage appearance in the provinces in 1889, settling in London in 1894. He played many popular parts in London, and toured in America, achieving great success as John Tanner in *Man and Superman*. Two outstanding performances were that of *Cyrano de Bergerac* in 1919, and in Strindberg's *The Father* in 1927. Early interested in aviation, in 1910 he was the first to fly the Irish Sea, and during the Great War served in the R.A.F., gaining the D.S.O.

LORCA. Town of Spain. It stands on the river Sangonera, 41 m. by rly S.W. of Murcia. The old section of the city, largely Moorish in character, is crowded on the slope of a hill; the modern part, with broad streets and fine squares, lies on the plain. Gunpowder, chemicals, porcelain, woollens, and leather are manufactured; there is trade in agricultural produce and cattle. In the vicinity are silver and lead mines. Lorca figured prominently in the wars of the Moors. In 1802 it suffered severely through the hursting of its irrigation reservoir. Pop. 74,696.

LORD. Originally, master of a household, hence generally master, ruler, nobleman, or man of high official rank. It is applied to peers of the realm (lords temporal and spiritual), and may be substituted for the legal or courtesy titles marquess, earl, viscount, or baron. By courtesy it is prefixed to the Christian and surnames of younger sons of dukes and marquesses. The equivalent feminine titles are lady, countess, viscountess, etc. See Baron; Marquess.

LORD CHAMBERLAIN. Chief officer of the British royal household and the second dignitary of the court. The symbols of his

office are a white staff and a key. He is in charge of all the household above stairs, and appoints the royal physicians and tradesmen. All state ceremonies are in his care. With some exceptions he licenses the London and metropolitan theatres, and those at Windsor and Brighton, and at other places when visited by the sovereign. In 1624 the lord chamberlain replaced the master of the revels as licenser of plays. See Censorship; Chamberlain; Royal Household.



Lord Chamberlain in court uniform

LORD CHANCELLOR. Highest judicial functionary of Great Britain. He is a cabinet minister, a privy councillor, and relinquishes office on a change of government. He is keeper of the great seal, issues the royal commissions for the opening and proroguing of parliament and for giving assents to bills, and reads the king's speech when the sovereign is not present. The chancellor appoints all justices of the peace, certain of the high court and all county court judges, and issues all writs. He is president or speaker of the House of Lords, his seat being known as the woolsack. He receives a salary of £10,000 per annum, and is entitled to a pension of half that amount on relinquishing office. When out of office he is ex-officio a judge of the House of Lords. Scotland had a lord high chancellor until 1707, and Ireland until 1922. See Chancellor; Chancery.

LORD CHIEF JUSTICE. Name given to the judge who in England presides over the king's bench division of the high court of justice. In the legal hierarchy he ranks next to the lord chancellor. See King's Bench.

LORD GREAT CHAMBERLAIN. The sixth great officer of state in England. He has charge of the palace of Westminster and of the arrangements when the sovereign opens parliament and is in evidence at a coronation. The office is hereditary. For the reign of George V it fell to the marquess of Lincolnshire. On his death, in 1928, without sons, it was decided that his son-in-law, Viscount Lewisisham, should discharge the duties.

LORD - LIEUTENANT. Official representing the sovereign. There is one for every county of the United Kingdom, usually a nobleman with estates therein. He is appointed by the sovereign. He is usually *custos rotulorum*, or keeper of the records, for the county, and recommends the names of persons for appointment as magistrates. He is also president of the county association of the territorial force. The lord-lieutenant of Ireland, an office abolished in 1922, was the head of the executive government.

LORD MAYOR. Title of the chief magistrate of the city of London and of other English cities. The lord mayor of London is elected at Michaelmas, and sworn into office on Nov. 8. He is addressed as the right honourable, and is usually made a baronet on retirement. The mayor's court, a survival of the courts of record, was absorbed into the city of London court in 1920. Other English cities in which the mayor is known as the lord mayor are York, Birmingham, Bradford, Bristol, Hull, Leeds, Leicester, Liverpool, Manchester, Newcastle-upon-Tyne, Norwich, Nottingham, Portsmouth, Sheffield, and Stoke. The day of the formal installation of the lord mayor of London (Nov. 9), when he proceeds in state to and from the law courts to receive the sovereign's assent to his election, is known as Lord Mayor's Day. The first lord mayor's show was held in 1215. The corresponding title in Scotland is lord provost. See Mayor; Provost.



The robes of the Lord Mayor of London

election, is known as Lord Mayor's Day. The first lord mayor's show was held in 1215. The corresponding title in Scotland is lord provost. See Mayor; Provost.

LORD PRESIDENT. In Great Britain one of the great officers of state, in full the lord president of the council. Since 1680 the office has been a permanent one, held by a member of the party in power, who is usually a leading member of the Cabinet. At one time a number of duties were attached to the office, but with the establishment of new departments of state these have been reduced. The office is now usually held in conjunction with another, or, as in the Labour Ministry of 1929, by the leader of the Government in the House of Lords. The salary is £5,000.

LORD PRIVY SEAL. In the United Kingdom, a high officer of state. Probably as early as Norman times the English kings had their privy seal as well as the great seal, and for this also there was a keeper. In 1834 legislation altered the method of affixing the seal, and the work came to an end. The office, however, still remains. Its holder ranks as the fifth great officer of state. It is held by a politician of cabinet rank, sometimes with another office. See Chancellor.

LORDS, House of. Term first used in 1544 to describe those councillors, hereditary and other, whom the crown was accustomed to summon by special writ to Parliament. Later it was applied to the great council chamber of the palace of Westminster in which they sat. The House of Lords was thus originally the king's council in Parliament, and its members sat in Parliament solely in virtue of a special summons from the crown.

Edward I established the custom of also summoning to Parliament, besides the representatives of shires, boroughs, and lower clergy, a number of great tenants-in-chief of the crown, such as the archbishops, earls, and bishops, and some barons and abbots selected by the crown. These constituted the House of Lords when Parliament was divided into two chambers.

With the dissolution of the monasteries the abbots disappeared, and in the reign of Charles I the crown was finally denied the right of either omitting to summon a peer who had once been summoned before, or of refusing to summon the successor to a peerage. The only means left to the crown of influencing the composition of its council in Parliament was the creation of peers, and an attempt to limit this prerogative by the Peerage Bill of 1719 was frustrated. There were 44 temporal peers in 1529, and about 60 at the end of Elizabeth's reign. In 1707 16 Scottish peers were added, in 1800 28 Irish ones, while year by year new creations increased the membership of the House. In 1707 it numbered 178, but in 1893 it had grown to 567. In 1930 the total was about 760, including two archbishops and 24 bishops.

The House of Lords still remains the supreme court of appeal, but the Parliament Act of 1911 has restricted its legislative powers.

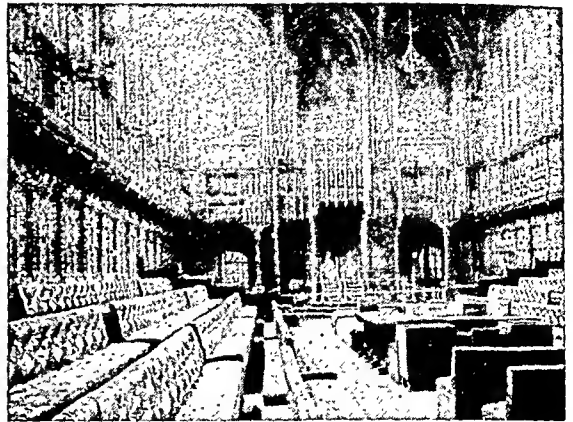
LORD'S CRICKET GROUND. Headquarters of the Marylebone C.C. and of cricket generally. It is in St. John's Wood, London, N.W. Its founder, Thomas Lord (1757-1832), a native of Thirsk, was groundsmen at the White Conduit Club, London, 1780, later had charge of a cricket ground for the earl of Winchester, and in 1787 started a ground of his own on the site of what is now Dorset Square. In 1811 he moved the turf to a new site close to the Regent's Canal, whence, in 1814, he transferred it to its present position.

LORD'S PRAYER. Prayer given by Christ to His disciples on the Mount (Matt. 6, 9-13; Luke 11, 2-4). Different versions are given by the two evangelists and in the Book of Common Prayer. The Teaching of the Twelve Apostles, which is attributed to the 1st century A.D., directed that the prayer should be said three times a day by all Christians. The Doxology ("For thine is the kingdom," etc.), a liturgical addition, is Jewish in origin.

LORD STEWARD. Officer of the royal household. He is the first great officer of the court. He has authority over all the royal officers and servants except those of the chamber, the chapel, and the stable. Since 1924 the office has been of a non-political character. Many of the steward's duties are actually carried out by a permanent official called the master of the household. This official should be distinguished from the lord high steward. This is an ancient office now only revived for a coronation or the trial of a peer.

LOREBURN, ROBERT THRESHIE REID, EARL (1846-1923). British politician. Born April 3, 1846, he was educated at Cheltenham

and Balliol College, Oxford. He was called to the bar in 1871, and became a Q.C. in 1882, having in 1880 been chosen M.P. for Hereford.



House of Lords. Interior of the chamber, looking towards the thrones. Left, government benches; right, opposition

He represented Dumfriesshire continuously from 1886 until 1905. In 1894 he was made solicitor-general, and in the same year attorney-general. In 1898 he represented his country in the dispute over the boundary of Venezuela. In 1905, when the Liberals returned to power, he was made lord chancellor and a peer. He retired in 1912. In 1911 he was made an earl, and he died Nov. 30, 1923.

LORELEI. Rocky eminence on the right bank of the Rhine, near St Goar, noted for its remarkable echo. According to the legend, it is haunted by a siren who lures boatmen to their doom. A railway tunnel pierces it.

LORETO. City of Italy. On the slopes of a hill, 3 m. from the Adriatic, and 15 m. by rly. S. of Ancona, it is one of the leading places of pilgrimage for Catholics, who are attracted to the Santa Casa or Holy House, in which it is said the Virgin Mary lived when at Nazareth. According to legend it was carried by angels to Dalmatia, and thence to its present site. It is a small, stone building, encased by a marble screen, designed by Bramante. A Renaissance church was built over it. Pop. 7,100.

LORETTO SCHOOL. Scottish public school. It is situated at Loretto, about 6 m. from Edinburgh, and owes its origin to H. H. Almond, headmaster from 1861 to 1903. He held unconventional ideas about the food, clothing, and exercise of boys, and at Loretto the boys habitually wore shorts and loose flannel shirts. The school has classical and science sides, and accommodates about 210 boys.

LORIENT. Town, seaport, and naval station of France. Near the junction of the Scorff and Blavet, 30 m. W.N.W. of Vannes, it has state docks, shipbuilding yards, and magazines. Guns and naval armour are made. There is also a commercial harbour. Lorient is a fishing centre for oysters and sardines. It long flourished as a station of the French East India Co., whence its name of l'Orient. In 1770 the dockyards were taken over by the government. Pop. 46,314.

LORIMER, JOHN HENRY (b. 1856). Scottish painter. Born at Edinburgh, he studied at the R.S.A. schools, and under Carolus-Duran in Paris. Lorimer was elected an associate of the R.S.A. in 1882, and a member in 1900. He began as a painter of portraits and flowers, but later took up figure work.

LORIMER, SIR ROBERT STODART (1864-1929). Scottish architect. Born Nov. 4, 1864, he was educated at Edinburgh University and became an architect. In 1911 he was knighted; in 1920 he was made A.R.A., and in 1921 was elected to the Scottish Academy. His work was mainly domestic architecture, but he was

responsible for the Scottish national war memorial on Edinburgh (q.v.) Castle Rock, and the new chapel for the Knights of the Thistle in S. Giles' Cathedral. He died Sept. 13, 1929.

LORIQUET. Popular name for certain genera of small parrots. Allied to the lories, they are found in the E. Indies and Australasia, except New Zealand. One of the largest is Swainson's loriquet, which is 6½ ins. long in body, with a tail of almost equal length. Its general colour is green, with a purple head and blue underparts, the under-wing coverts being red. It has a red beak with a yellow tip, lives mainly on honey, and generally congregates in large flocks in the forests. See Lory.



Lorquet. Scaly-breasted variety
Trichoglossus chlorolepidotus

LORIS. Name applied to a group of small lemurs found in tropical Asia. They have usually little or no tail, while the index finger of the hand is extremely small and feeble. They are nocturnal in habit, and move with such slowness and stealth as to be called the slow lemurs. The eyes are round and very conspicuous. One species, the slender loris, is remarkable for its extremely slim limbs.

LORNE. District of Argyllshire, Scotland, between Loch Awe and the coast. The marquess of Lorne is one of the titles of the duke of Argyll (q.v.), being borne as a courtesy title by his eldest son. The firth of Lorne is a strait separating Lorne from the island of Mull.

LORRAINE. District of France. Between Luxembourg on the N. and Alsace on the S., it covers about 2,400 sq. m. The old duchy of Lorraine was larger than the present district, as it included Nancy and the country round. Its chief rivers are the Moselle and Saar.

At first there were two Lorraines, Upper and Lower, but soon Lower Lorraine became known as Brabant, and the name was confined to Upper Lorraine, the country of the Moselle. From about 1050 this Lorraine was ruled by powerful dukes, nominally vassals of the German kings. In 1542 Duke Anthony made Lorraine independent of Germany. The French, however, obtained an increasingly firm hold upon Lorraine, and in 1736 secured the duchy for Stanislaus, the exiled king of Poland. In 1766, when Stanislaus died, Lorraine became part of France and remained so until 1871. By the treaty of peace it was reduced in size. Nancy, hitherto the capital, was kept by France, but most of Lorraine was transferred to the conqueror and with Alsace became the imperial province of Alsace-Lorraine (q.v.). France recovered it in 1919.

LORY. Family of beautifully coloured parrots, found only in Australasia. There are about ten species, and all of them have rather long tails. The long tongue is provided with a brush with which it gathers the nectar on which the birds largely feed. They also eat fruit, and usually congregate in small flocks. Lorries readily learn to talk, and for this reason are in demand as pets. See Loriquet.

LOS ANGELES. City of California, U.S.A. It stands on the Los Angeles river, about 18 m. from its mouth, and is served by the Atchison, Topoka, and Santa Fé and other rlys. It is the seat of the university of Southern California. Los Angeles is the leading business and

industrial centre of Southern California. The district is largely devoted to fruit-growing. An extensive export trade is carried on in oranges, lemons, grapes, figs, and other fruit, cattle and oil also being shipped, and the city is the centre of an important mining district, petroleum being

obtained from wells within the city. Los Angeles is also the centre of the American cinematographic industry. Pop. 1,343,923. See Cinematograph; Hollywood.

LOSSIEMOUTH. Burgh, seaport, and watering place of Elginshire (Moray), Scotland. Standing at the mouth of the Lossie, 5 m. from Elgin, on the L.N.E.R., it has a harbour and some fishing and shipping, and good golf links. The burgh was founded in the 19th century from the three villages of Lossiemouth, Branderburgh, and Stotfield. Near are Kinnedar Castle and Spynie Palace. J. Ramsay MacDonald (q.v.) was born here. Pop. 4,166.

LOST TRIBES, THE. Term used for the N. branch of the Hebrew race, which disappeared about 140 years before the dispersion of the Jews. This disappearance has in modern times become a matter of anxiety, especially to those who look for a restoration of the Jewish kingdom, in which the ten tribes ought to be represented, as well as Judah and Benjamin, to which the present Jews mainly belong. About 1644 Antonio de Montezinos (Aaron Levi) announced that some Israelite tribes existed in America. In 1649 John Sadler suggested in his Rights of the Kingdom that the English were of Israelitish origin. The suggestion was developed by Richard Brothers (1757-1824) in many volumes, and was adopted by John Wilson (1840), Edward Hine (1871), and many subsequent writers.

LOSTWITHIEL. Borough and market town of Cornwall



Los Angeles City Hall; at the top of the tower is a beacon for the guidance of aviators. See below

It stands on the Fowey, 23 m. N.E. of Truro, on the G.W.Rly. The chief buildings are the church of S. Bartholomew and the duchy house, a 14th century building. Its 14th century bridge gave the town its strategic importance in the days before railways. In the Middle Ages markets and fairs were held at Lostwithiel, and it became an important place under the earls of Cornwall. In Sept., 1644, the parliamentary forces under the earl of Essex surrendered to the royalists at Lostwithiel, with the exception of Essex and the horsemen who escaped. Market day, alternate Tues. Pop. 1,288.

LOT. Son of Haran and nephew of Abraham. He accompanied Abraham from Mesopotamia to Canaan, but later was assigned the Jordan valley as his country, making his home at Sodom. He was visited by mysterious messengers at Sodom, who rescued him and his family from the destruction of the city by fire. The story of Lot's wife has been connected with the fantastically shaped masses of rock-salt found S.W. of the Dead Sea.

LOTHIAN. Dist. of Scotland which stretched originally from the Cheviot Hills to the Forth, including the counties of Berwick, Roxburgh, Haddington, Edinburgh, Linlithgow, and probably Selkirk. It was included

in the 7th century in the English kingdom of Northumbria. At present the Lothians include the three shires of Haddington or East Lothian, Edinburgh or Midlothian, and Linlithgow or West Lothian. See Scotland.

The Scottish titles of earl and marquess of Lothian are borne by the family of Kerr, Mark, the first earl, belonged to the noted border family of Ker of Cessford. William Kerr, the 3rd earl, took part in public life in England, dying in 1675. His son Robert, the 4th earl (1636-1703), was made a marquess for his services to William III in 1701. In 1930 Philip Henry Kerr (b. 1882), known as a writer and politician, became the 11th marquess. The family seat is Newbattle Abbey, near Edinburgh.

Lothian Regiment is an alternative name for the Royal Scots (q.v.), who are recruited mainly in Edinburgh and the Lothians.

LOTI, PIERRE (1850-1923). Pen name of the French novelist, Louis Marie Julien Viand. Born at Rocbefort, Jan. 14, 1850, at the age of seventeen he entered the French navy, becoming captain in 1906. He published his first story, Aziyadé, in 1879. In 1880 came Barahu, reprinted in 1882 as Le Mariage de Loti, the story of an Englishman and a Tahitian girl, which won him instant popularity. Other books include Le Roman d'un Spahi, 1881; Mon Frère Yves, 1883; Le Pêcheur d'Islande, 1886; Madame Chrysanthème, 1887; Les Desenchantées, 1906. He died June 10, 1923.



Pierre Loti
French novelist

LOTTERY. In English law, a distribution of prizes by lot or chance. In Tudor and Stuart times lotteries were popular in England.

The law on the subject of lotteries is involved and obscure, but certain points are clear. The test to be applied is whether the competition is "a scheme by which men risk money, and, if successful, gain money by chance." The sale of a newspaper containing an entrance coupon is the sale of a ticket, and where there are several equally suitable solutions, of which only one is adjudged successful, the element of chance is the deciding one, and the contest is a lottery. Raffles and sweepstakes, however innocent, are lotteries in the strict legal sense; and art unions are only protected by special statutes in their distribution of prizes. In certain countries it is still lawful to raise money by state lotteries. See Betting; Sweepstake.

LOTUS. Genus of herbs and sub-shrubs of the order Leguminosae, world-wide in distribution. Five species are recognized as British. The bird's-foot trefoil (*Lotus corniculatus*), known locally as lady's slipper, is abundant in every pasture and waste. The clusters of bright yellow, pea-like flowers are succeeded by slender, curved pods which resemble the toes of a bird. The lotus of the lotus-eaters is supposed to be the jujube-tree, a species of Rhamnaceae. The sacred lotus of the Egyptians was a water-lily, while the tamara or sacred lotus of India, China, and Tibet is the *Nelumbium speciosum*. Unlike other water-lilies, neither the leaves nor the flowers of the latter float on the surface, but are raised on long stalks above the water.



Lotus. Flowers and circular leaves of the sacred lotus of India and China

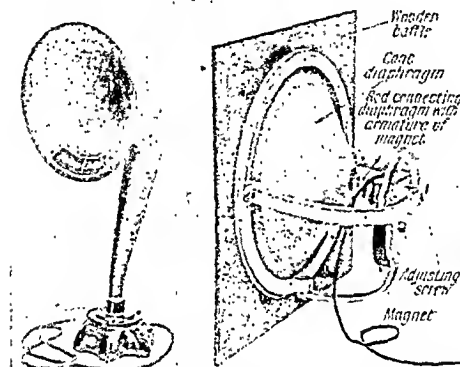
LOTUS EATERS (Gr. Lotophagi). In Greek mythology, a people whom Odysseus came across in his wanderings. They were accustomed to eat of a fruit called the lotus, which caused those who did so to lose all desire to return to their native country. It has been identified with various plants, more particularly with the jubebe. The legend is the subject of Tennyson's poem *The Lotus Eaters*.

LOUBET, ÉMILE (1838-1929). French statesman. Born at Marsanne, Drôme dept., Dec 31, 1838, he studied law in Paris. Ad-



mitted to the bar, he began practice at Montélimar, and became mayor of that town. In 1876 he was elected to the Chamber of Deputies and in 1885 to the Senate. In 1887-88 he was minister of public works, and in 1892 was prime minister. In 1895 he was chosen president of the Senate, and from 1899-1906 was president of the republic. He died Dec. 20, 1929.

LOUD SPEAKER. Development of the loud-speaking telephone, used in conjunction with broadcast receiving apparatus. It is employed also to amplify speech, music, etc.,



Loud Speaker. 1. Horn type of apparatus, developed from the telephone receiver, and now largely displaced by other types. 2. Cone type, with large conical diaphragm. 3. Electro-dynamic or moving-coil loud speaker

at concerts or public meetings, and in connexion with the sound reproduction of talking pictures. The earliest type consisted essentially of a horn attached to the ear-piece of a telephone receiver. Unless a horn of considerable length is used, the lower notes are not faithfully reproduced. In the cone type of instrument the movement of a reed or a pivoted armature attracted by the electro-magnet is communicated to a large shallow cone-shaped diaphragm of paper or parchment, and thus to the air.

The dynamic or moving-coil loud speaker employs a floating cone, loosely attached at its mouth, and bearing at its apex a coil wound on a paper collar. The cone-coil is free to move in the field of a powerful electro-magnet as the current in the latter's coil is varied by incoming impulses, and so the cone itself is made to vibrate.

LOUGHBOROUGH. Borough and market town of Leicestershire. It stands on the Soar, 10 m. from Leicester and 110 from London, on the L.M.S. and L.N.E. Rlys. The old church of All Saints has a fine tower. In Queen's Park is a war memorial tower with a carillon of 47 bells. The industries are the making of hosiery and electrical apparatus; dyeing and bell-founding are also carried on. Market days, Thurs. and Sat. Pop. 25,874.

LOUGHREA. Town of co. Galway, Irish Free State. It stands on Lough Rea, 18 m. S.W. of Ballinasloe and 118 from Dublin, on

the G.S. Rlys. The chief building is the cathedral of the diocese of Clonfert. Pop. 2,805.

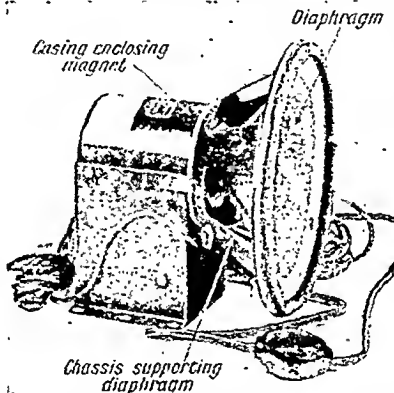
LOUGHTON. Urban district and parish of Essex. It is on the L.N.E.R., 11½ m. from Liverpool Street, on the borders of Epping Forest. The Public (or Lopping) Hall was erected in 1883. Loughton Hall, 1879, stands on the site of a Tudor mansion. Pop. 5,749.

LOUIS or **LOUIS D'OR.** French gold coin. It was minted by Louis XIII in 1640, and continued in use till after the Revolution. It was worth about 16s., and half and double louis were also coined. The name is also given colloquially to the 20-franc piece or napoleon.

LOUIS. Name of four German kings and Roman emperors, also known by the German form of the name, Ludwig. Louis I, the only surviving son of Charlemagne, became emperor on his father's death in 814. He reigned until his death, June 20, 840.

Louis II was a grandson of Louis I, being a son of the emperor Lothair. He became emperor in 855 and spent most of his time in Italy. He died Aug. 12, 875. Louis III, a grandson of Louis II, was crowned emperor in 901. In 905 he was deposed and blinded.

Louis IV was a son of the duke of Bavaria, a title which he inherited. In 1314 he was chosen emperor by a faction, another faction choosing Frederick, a Hapsburg prince. He



defeated his rival, and in 1328 was crowned emperor in Rome. He reigned until Oct. 11, 1347, when he was killed while hunting.

LOUIS. Name of 18 kings of France. The emperor Louis I ranks as the first, as France as well as Germany was in his empire. Louis II was the son of the emperor Charles the Bald. He ruled over the West Franks, as the French were then called, from 877 to April, 879. Louis III, a son of Louis II, reigned with his brother Carloman over the Franks from 879 to Aug., 882.

Louis IV was king from 936 to 954. A son of Charles III, he spent his boyhood in England and was called outremere, or beyond the sea. Louis V, the last of the Carolingian kings, only reigned from 986 to 987.

Louis VI, a son of Philip I, was king from 1108 to 1137. He was succeeded by his son Louis VII, who married Eleanor, the heiress of Aquitaine. Later he divorced her, and she married Henry, who became king of England as Henry II. Louis died Sept. 18, 1180.

Louis VIII became king in 1223, but before then he had invaded England as a rival to John. After John's death he was defeated and left the country. His eldest son and successor was S. Louis.

LOUIS IX (1214-70). King of France, known as Saint Louis. Born at Poissy, April 25, 1214, he was the son of Louis VIII and Blanche of Castile. His father died in 1226, and his mother, acting as regent, did much to curtail the power of the nobles. In 1242 Louis forced Henry III of England to renounce his claims to Normandy, Anjou, Maine, and Poitou, and in 1248 directed the seventh crusade, during which he was taken prisoner. Returning to France in 1254, he made preparations for another crusade, the objective of which was Tunis. But when besieging that city in 1270 he fell a victim to the plague, and died Aug. 25. A man of great personal piety, he was canonised in 1297.

Louis X reigned only from 1314 to June 5, 1316. He succeeded his father Philip IV and was followed by his brother Philip V. A weak prince, he was controlled by his uncle, Charles of Valois, and was powerless against the turbulent nobles.

LOUIS XI (1423-83). King of France. The son of Charles VII, he was born at Bourges, July 23, 1423. The story of his reign is that of the consolidation of modern France. Having embittered the last years of his father's life by his continual intrigues, he succeeded in 1461. Pitiless taxation brought about a general revolt in 1465, which resulted in the remission of certain burdens. Louis was made prisoner by his powerful rival, Charles, duke of Burgundy, while on a visit to that ruler in 1468, and only escaped execution by dint of many promises. He died Aug. 30, 1483.

LOUIS XII (1462-1515). King of France. A son of Charles, duke of Orleans, the poet, he was descended from Charles V, but did not become heir to the throne for some years. He married Jeanne, a daughter of Louis XI, and as duke of Orleans was an active personage during the reigns of that king and of Charles VIII. In April, 1498, he became king on the failure of direct heirs to Charles VIII. Asserting his right as heir to the Two Sicilies and as grandson of Valentina Visconti to Milan, Louis invaded Italy in 1499 with Ferdinand of Spain, a project which led to a prolonged rivalry between France and Spain. He secured the adherence of a province of doubtful loyalty by his marriage with Anne of Brittany, the widow of his predecessor, divorcing his first wife for this purpose. Louis took as his third wife, Mary, sister of Henry VIII, but survived the wedding by only three months, dying Jan. 1, 1515. In 1506 he had



Louis, kings of France. Left to right, Louis XI, 1461-83; Louis XII, 1498-1515; Louis XIII, 1610-43; Louis XIV, 1643-1715; Louis XV, 1715-74; Louis XVI, 1774-92; Louis XVII, titular king, 1793-95; Louis XVIII, reigned de facto, 1814-24

received by public acclamation the title of father of his people, proof that despite military misfortunes he was appreciated by his subjects.

LOUIS XIII (1601-43). King of France. The son of Henry IV and Mary de' Medici, he was born Sept. 27, 1601, and came to the throne on the murder of his father in 1610. His mother acted as regent until 1617, when Louis himself took control of affairs and sent her from the capital. The result of this and other factors was civil war, which continued until Richelieu became chief minister. He remained in power until his death in 1642. Louis, except on one occasion, being content to leave home and foreign policy in his hands. The king died May 14, 1643. He left two sons, Louis XIV and Philip, duke of Orleans.

LOUIS XIV (1638-1715). King of France. A son of Louis XIII and Anne of Austria, he was born Sept. 5, 1638, and became king on his father's death in May, 1643. In 1660 he really began to rule, in the same year marrying Maria Theresa, a Spanish princess. Louis reigned for 72 years, one of the most glorious periods in the history of France. For much of it her armies were invincible, but it was more notable for its art and literature, while the influence of the court on manners and taste can hardly be exaggerated. Of all the national activities, Louis was the centre. His hand was in almost every move of European politics; he also found time to build palaces, to encourage literature and art, and to take his fill of pleasure. He carried on a series of wars, the main object of which was to make him the dictator of Europe. By 1678 he had achieved a great measure of success, but afterwards he was less fortunate, and his last peace treaty (1713) was a deep humiliation to France.

After the death of Maria Theresa, in 1683, Louis married his mistress, Madame de Maintenon. His earlier mistresses included Mademoiselle de la Vallière and Madame de Montespan. His son Louis, and his grandson, the duke of Burgundy, died before him, leaving his great-grandson, afterwards Louis XV, his heir. Louis died Sept. 1, 1715.

LOUIS XV (1710-74). King of France. Son of Louis, duke of Burgundy, he was the great-grandson of Louis XIV, to whose throne he became heir in 1712. Born Feb. 15, 1710, his mother was a princess of Savoy. In Sept., 1715, he became king and in 1723 was declared of age, but the conduct of affairs was not in his hands until 1743, and then only partially. His long reign was one of misfortune for France. He had a succession of mistresses, of whom Madame de Pompadour and Madame du Barry are the best known, while stories are told of his seraglio in the Parc aux Cerfs. He married in 1725 Marie Leeczynska, daughter of Stanislaus, the deposed king of Poland. He died May 10, 1774.

LOUIS XVI (1754-93). King of France. Born at Versailles, Aug. 23, 1754, the son of Louis, the dauphin, and a grandson of Louis XV, he became heir to the throne in 1765 and in May, 1774, became king. For fifteen years he ruled, while the condition of the country grew steadily worse, and then, in 1789, came the revolution. In June, 1791, he fled to Varennes, but he was brought back to Paris, where he took an oath to reign as a constitutional king. In Sept., 1792, the kingly office was abolished. Louis Capet, as he was called, was tried, found guilty, and on Jan. 21, 1793, was guillotined, and his wife, Marie Antoinette, a Hapsburg princess, whom he had married in 1770, shared his fate. Their elder son died before his parents, a son and daughter remained—the titular Louis XVII,

and Marie Thérèse, who survived the horrors to which she was submitted, and died in 1851.

Louis XVII was imprisoned in the Temple, and his death was announced in June, 1795. See French Revolution.

LOUIS XVIII (1755-1824). King of France. Grandson of Louis XV and brother of Louis XVI, he was born at Versailles, Nov. 17, 1755. He remained in Paris until the flight of Louis XVI when, more fortunate than his brother, he succeeded in making his way to Coblenz. Here he figured as the head of the Royalists, declared himself regent after the execution of Louis, and on the death of the dauphin, in 1795, proclaimed himself king as Louis XVIII. In 1807 Louis went to England, where he remained until the victory of the Allied armies in 1814 opened the way to Paris. He entered his capital May 2, but was obliged to take flight on Napoleon's escape from Elba. Again, after Waterloo, he returned to Paris, July 8, 1815, and reigned until his death, Sept. 16, 1824.

LOUIS. Name of three kings of Bavaria. Louis I (1786-1868), born Aug. 25, 1786, succeeded his father Maximilian as king in 1825. At first he proved an enlightened ruler, but he became less so as the years advanced. In 1846 he formed a connexion with the dancer Lola Montez, who used her influence especially against the dominant Catholic party. This was followed by the unrest of 1848, and the king's abdication on March 20.

Louis lived until Feb. 28, 1868.

Louis II (1845-86) was the eldest son of King Maximilian II, and became king in 1861. In June, 1886, after a reign passed in eccentricities and extravagance, he was declared incapable of ruling. His uncle Luitpold became regent on June 10, and on June 13 the king and his doctor were drowned in the lake of Starnberg.

Louis III (1845-1921) was a son of Prince Luitpold and a grandson of King Louis I. On the death of his father, Dec. 12, 1912, he succeeded him as regent of Bavaria, King Otto being insane. Proclaimed king Nov. 3, 1913, he abdicated Nov. 9, 1918, and died Oct. 17, 1921. See Bavaria.

LOUISBURG. Town and seaport of Cape Breton, Canada. It is 40 m. from Sydney by railway and has a good harbour.

In 1713 France gave up Nova Scotia to Great Britain, but retained Cape Breton. Here the French built a strong fortress called, after their king, Louisburg. This was attacked and taken by British colonists in 1747, but was restored to France in 1748. In 1758 it was again taken, and in 1763 became British.

LOUISE (b. 1848) British princess, known also as the duchess of Argyll. The sixth child and fourth daughter of Queen Victoria and Prince Albert, she was born March 18, 1848, and baptized Louise Caroline Alberta. She was educated privately, and on March 21, 1871, was married to the marquess of Lorne, afterwards 9th duke of Argyll. She accompanied him to Canada when he was governor-general. The princess, who had no children, was left a widow in 1914.

Another Princess Louise, eldest daughter of Edward VII, now known as the Princess Royal, married the 1st duke of Fife (q.v.).

LOUISIANA. State of the U.S.A. It has an area of 48,500 sq. m. The coast region is swampy. The N and N.E. portions of the state are upland, whence the surface gradually slopes to the S. The state contains immense forests. Agriculture is an important industry, maize, rice, cotton, and cane sugar are the chief crops cultivated. Besides the waterways, transport facilities are provided by nearly 9,000 miles of rly. There are a state and other universities. Baton Rouge is the capital, but New Orleans is the largest city. The latter is a favourite winter resort and is noted for the annual Mardi Gras, a popular attraction. There is a fine deep water harbour at Lake Charles, opened in 1926.

Louisiana was part of a French colony called by that name in honour of Louis XIV. It became a French possession in 1682, and was later handed over to the Mississippi Co. In 1763 it was ceded to Spain, but was regained by France in 1800. In 1803 it was sold to the United States for £3,000,000. Pop. 1,950,000.

LOUIS PHILIPPE (1773-1850) King of the French. The eldest son of Louis Philippe, duke of Orleans, known as Philippe Egalité, he was born Oct. 6, 1773.

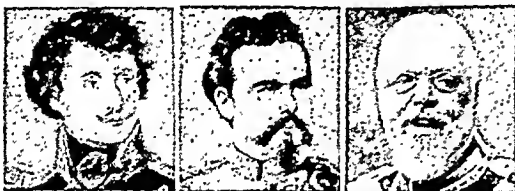
Like his father, he professed revolutionary principles, repudiated his titles, and became a colonel in the revolutionary army, fighting at Valmy and Jemappes. After his father's execution he became head of the Orleans branch of the Bourbons. The government having ordered his arrest, he spent many years wandering about Europe. At Palermo, in 1809, he married a daughter of Ferdinand, king of the Two Sicilies. Reinstated in 1814, he was driven from France by the hostility of Louis XVIII, and lived at Twickenham until 1827.

His opportunity came with the revolution of 1830. He accepted the throne, and by steering a middle course between democracy and privilege, and by various more or less doubtful expedients, managed to keep it until the revolution of 1848, when he fled to England. He died at Claremont, Surrey, Aug. 26, 1850. His eldest son, Louis, duke of Orleans, had died in 1842, leaving a son, known as the count of Paris, who inherited his grandfather's claims.

LOUIS STYLE. Term applied to four styles of French furniture, and named after Louis XIII, XIV, XV, and XVI. Louis Treize chairs were small, rectangular in contour, with slight wood frames concealed by well-padded velvets, tapestries, and embroideries. Louis Quatorze (XIV) was a heavy classic style, but florid; the furniture being

overloaded with carvings, rich inlays, and heavy, carved metal mountings.

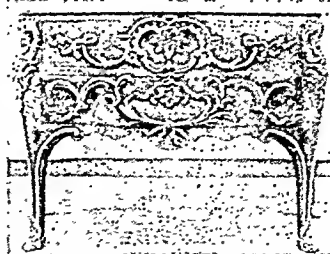
Louis Quinze (XV) is the florid rococo style. Wood was heavily carved, or covered with moulded composition. Most of this was gilded, or painted in delicate tints. Couches and chairs had sweeping, curved backs. Louis Seize (XVI) is a more chaste version of the Renaissance, presenting rectangular panels with simple mouldings and fluted columns. See Chair; Furniture.



Louis, kings of Bavaria. Left to right, Louis I, Louis II, and Louis III



Louis Philippe, King of the French



Louis Style. Commode with overlaid marquetry of mahogany, and mounted with chased ormolu; period, Louis XV Jones Bequest, S. Kensington Museum

LOUISVILLE. City of Kentucky, U.S.A. Situated below Cincinnati, 130 m. by river and 110 m. by rail from that city, it is a river port on the Ohio. Here obstructed by rapids, which give it the name "Falls City." The university is the chief of a large number of educational institutions. The city is a great railway junction and a leading centre of the tobacco industry, and among its other activities are slaughtering and meat packing, petroleum refining, and the manufacture of machinery, leather, and timber goods. It became a city in 1828. Pop. 305,935.

LOURDES. Town of France, in the dept. of Hautes-Pyrénées. It lies 12 m. by railway S.S.W. of Tarbes. The town relies almost entirely on the constant stream of pilgrims to the grotto of Our Lady of Lourdes. The basilica, 1876, and the church of the Rosary, 1889, are close by the shrine, as also is the Hospice de Notre Dame des Douleurs. The pilgrimage arose from the alleged



Lourdes. The Basilica, in front of which is the Chapel of the Rosary

appearances of the Virgin Mary to a peasant girl named Bernadette Soubirous (1844-79) in 1859. Pop. 8,736.

LOURENÇO MARQUES or **LORENZO MARQUES.** City of Mozambique. On the harbour of Delagoa Bay, it is the capital of the province and the terminus of the most direct and shortest railway route to the Transvaal, from which country it derives the bulk of its transport trade. Pop. 37,301. See Delagoa Bay.

LOUSE. Name applied to a group of small, parasitic wingless insects. The mouth parts are developed into a hooked tube, with which they bore into the skin and suck the blood of their hosts. The eggs are deposited on the hairs, hatch out in a few days, and reproduce their species in about a fortnight. There are at least forty species, parasitic on various hosts. The plural form is lice.

LOUSEWORT (*Pedicularis sylvatica*). Perennial herb of the order Scrophulariaceae, native of Europe. It has a short root-stock and branching leafy stems a few inches high. The narrow oblong leaves are deeply cut into segments from the sides. The tubular two-lipped flowers are rose-coloured. It is a parasite upon the roots of other plants. The marsh lousewort (*P. palustris*), grows in bogs. It is an annual with more erect stems and the leaf-segments rounded.

LOUTH. County of the Irish Free State. In the prov. of Leinster, it has an area of 316 sq. m. The coastline on the Irish Sea is broken by Carlingford Lough, Dundalk Bay, and the estuary of the Boyne. The chief rivers are the Lagan, Glyde, and Dee. The Boyne flows along the S. boundary. The surface is flat, except in the N.E., where are the Carlingford Mts., and the S.W. The chief industries are agriculture and fishing including the culture of oysters. The principal towns are Dundalk, the county town Drogheda and Ardee. Carlingford and Greenore are watering places. Louth, from which the county takes its name, is a decayed town 5½ m. from Dundalk. Pop. 62,739.

LOUTH. Borough and market town of Lincolnshire. It stands on the Ludd, 31 m. from Lincoln on the L.N.E.R. A canal connects it with the Humber. The large and beautiful perpendicular church of S. James is

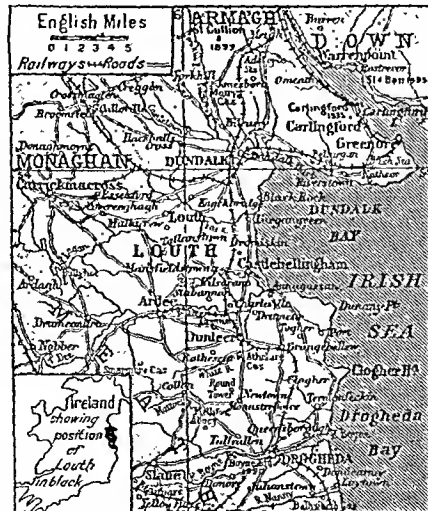
notable for its spire. Louth is the trading centre for an agricultural district. Its industries include brewing and malting. Market days Wed. and Fri. Pop. 9,544.

LOUVAIN (Flemish. Leuven). Town of Belgium. It lies on the river Dyle, 19 m. by railway E.N.E. of Brussels, and is an important railway junction. The chief industries are brewing, lace-making, and printing.

Louvain suffered severely in the Great War, and was awarded the Croix de Guerre. After the entry of the German troops on Aug. 19, 1914, a large part of the town was burnt or otherwise damaged. The roof and interior of the collegiate church of S. Pierre were seriously injured, and the library of the university, founded in 1426, together with its priceless treasures, was burnt. The magnificent hôtel de ville escaped. In 1923 the new university library, the gift of the U.S.A., was opened. Pop. 40,000.

LOUVOIS, FRANÇOIS MICHEL LE TELLIER, MARQUIS DE (1641-91). French statesman. Born in Paris, Jan. 18, 1641, he was trained for public life, and soon attracted the attention of Louis XIV. In 1666 he became minister of war, and rapidly brought the French army to a high state of efficiency. This was proved when war broke out in 1672, and during the next 18 years Louvois was one of the directors of the policy of France, both military and civil. He died July 16, 1691.

LOUVRE, THE Old palace of the kings of France, in Paris. It now contains a great museum of art and antiquities. Situated on the right bank of the Seine, the building, with its courts, occupies an area of about 34,432 sq. yds.



Louth. Map of the maritime county of Leinster



Louvain. Hôtel de Ville, a remarkable 15th cent. building

Napoleon filled the galleries with a priceless collection of works of art obtained from foreign capitals, and although much of this loot was subsequently restored, the collection remains one of the finest in the world. Its sculpture includes the Winged Victory of Samothrace and the Venus of Milo, and among the world-famous pictures here are Leonardo's Virgin of the Rocks, the Mona Lisa, and other Italian masterpieces, and an unrivalled collection of the French school. The Salle Rubens, filled with the series of allegorical paintings executed for Catherine de' Medici, the Salle Van Dyck; the Salon Carré, which contains the greatest masterpieces of various schools; and the Grande Galerie are among the more famous of the Louvre's many galleries.

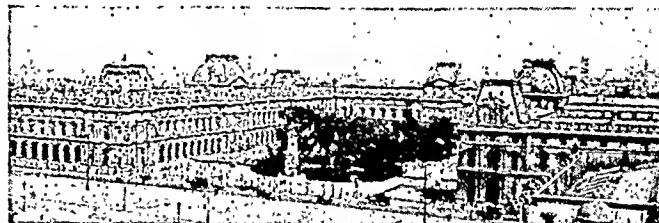
LOVAGE (*Ligusticum scoticum*) Perennial herb of the order Umbelliferae, a native of N. Europe, N. Asia, and N. America. It has a stout branched root-stock and large, much divided leaves. The branches bear umbels of small white or pink flowers. The root is aromatic, and the leaves are used as a potherb.

LOVAT, BARON. Scottish title borne by the family of Fraser, with an interval, since about 1458. Hugh Fraser, who was made a lord of parliament, took the title of Lord Lovat, or Lord Fraser of Lovat, this being the name of his seat in Inverness-shire. The title passed from one descendant to another until it came to Simon Fraser, the Jacobite, who was captured after Culloden and executed in 1747.

The title became extinct in 1815. In 1837 a kinsman, Thomas Alexander Fraser, a



Simon Fraser, Lord Lovat. Portrait by Hogarth. Nat. Port. Gallery



Louvre. The palace from the west, showing the two great projecting wings built under Napoleon III. In the foreground is the Place du Carrousel

descendant of the 2nd baron, was created Baron Lovat, and in 1887 his descendant, Simon Joseph (b. 1871), became the 14th baron. In South Africa he served with The Lovat Scouts, a force raised by himself. The family seat is Beaufort Castle, Beauly, and the estates are mainly in Inverness-shire.

LOVE BIRD. Name popularly given to a small parrot of the genus *Agapornis*. There are about nine species, all natives of Central and S. Africa. They fly in flocks, feed on berries and seeds, and take possession of the nests of other birds instead of building for themselves. Their handsome appearance and pretty ways make them favourites for the aviary, but they are apt to prove very delicate. The rosy-faced love bird is the hardiest.

LOVE-IN-A-MIST (*Nigella damascena*). Annual herb of the order Ranunculaceae, a native of S. Europe. The alternate leaves are divided into thread-like segments, and the large blue or white flowers are surrounded by moss-like bracts. It is also called devil-in-the-bush and fennel-flower.

LOVELACE, RICHARD (1618-58). English poet. He was the eldest son of Sir William Lovelace of Woolwich. For presenting to the

Long Parliament the Kentish petition on behalf of the king, he was imprisoned in the Gatehouse, Westminster, where he wrote his



Richard Lovelace.
English poet

LOVE-LIES-BLEEDING (*Amarantus caudatus*). Annual herb of the order *Amarantaceae*. A native of India. It has alternate, undivided leaves, and minute dark purple flowers, densely clustered in long drooping spikes, like catkins.

LOVER, SAMUEL (1797-1868). Irish novelist and song writer. Born in Dublin, Feb. 24, 1797, he was by turns miniaturist, song writer, novelist, and dramatist. He was associated with Dickens in the establishment of *Bentley's Miscellany*, 1837. He gave recitals, called *Irish Evenings*, in London and in Canada and the U.S.A., 1846-48. Lover died at St. Helier, Jersey, July 6, 1868. Among his ballads are *Rory O'More*, *The Low-backed Car*, *The Angel's Whisper*, *The Four-Leaved Shamrock*, *Molly Bawn*, and *Widow Machreeo*. He wrote music for his songs. His humorous story *Handy Andy* appeared in 1842.

LOVING CUP. Large cup filled with wine or punch, and passed from hand to hand at state banquets, civic feasts, and university gatherings to pledge health. The custom of drinking from one cup was observed at the ancient Jewish paschal supper. See *Eucharist*.

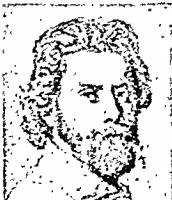


Loving Cup presented by Samuel Pepys to the Clothworkers' Company of London

LOWE, SIR HUDSON (1769-1844). British soldier. He was born at Galway, July 28, 1769, joined the army in 1787, and served with distinction against the French, especially during the Egyptian campaign of 1801. In 1815 he was appointed custodian of Napoleon at St. Helena. He died Jan. 10, 1844.

LOWELL. City of Massachusetts, U.S.A. At the junction of the Merrimac and Concord rivers, 26 m. N.W. of Boston, it is well served by rlys. and obtains power chiefly from the Merrimac. Cotton and woollen goods are largely produced, besides machinery, tools, and foundry and machine-shop products. Pop. 110,296.

LOWELL, JAMES RUSSELL (1819-91). American poet, essayist, and diplomat. He was born at Elmwood, Cambridge, Massachusetts, Feb. 22, 1819, of Puritan descent. He became editor of *The Pennsylvania Freeman*, in which, influenced by his wife, Maria White, he took the side of the abolitionists; lectured on poetry at the Lowell Institute, Boston, 1854-55; was professor of belles-lettres at Harvard, 1855-77; edited



J. R. Lowell,
American writer

The Atlantic Monthly, 1857-61; and, with C. E. Norton, *The North American Review*, 1864-72. He was U.S. minister in Madrid,

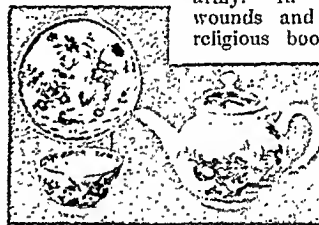
1877-80 and in London, 1880-85. He died at Elmwood, Aug. 12, 1891.

Lowell's first volume, *A Year's Life and Other Poems*, appeared in 1841; his last, *Heartsease and Rue*, in 1888. A number of poems in Yankee dialect which began in *The Boston Courier* in 1846, inspired by opposition to the Mexican war, were published as *The Biglow Papers* in 1848. His prose works include *My Study Windows*, 1871; and *Among My Books*, 1870-76.

LOWELL, PERCIVAL (1855-1916). American astronomer. Born March 13, 1855, in Boston, he was educated there and at Harvard. After some years in Japan and Korea he devoted his energies to the erection of the Lowell Observatory at Flagstaff, Arizona, and the prosecution of researches there. In 1902 he was made non-resident professor of astronomy at the Massachusetts institute of technology, and devoted himself especially to researches on planetary markings. He wrote *Mars and Its Canals*, 1906; and *Mars as the Abode of Life*, 1908. He died Nov. 13, 1916. See *Mars*.

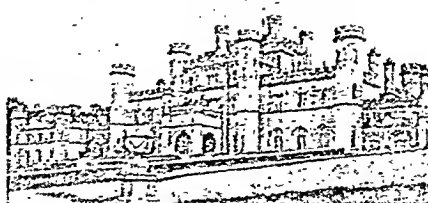
LOWESTOFT. Borough, seaport, and watering place of Suffolk. It stands at the mouth of the Waveney, 16 m. by rail from Great Yarmouth and 118 m. from London, on the L.N.E. and L.M.S. Rlys. The chief church is St. Margaret's, a Perpendicular building. Public parks and open spaces include Belvedere Park, the Denes, and the Sparrow's Nest. The narrow streets leading down to the sea are called the scores. There are an inner and an outer harbour, with good accommodation for shipping, and a large fish market. Lowestoft is a fishing centre, and boat-building and sail-making are carried on. A naval base during the Great War, Lowestoft was bombarded by the Germans in 1916. Pop. 46,150.

Lowestoft ware is the name of a hard paste china made at Lowestoft 1775-1802. It has a good body and an Oriental character, with decorations in blue and white. Polychrome was afterwards used for scenery and figure painting. An earlier soft-paste porcelain and an earthenware were made at Lowestoft from 1756.



Lowestoft. Specimens of the china-ware formerly made at Lowestoft. From Herbert Allen collection, Victoria and Albert Museum

LOWTHER CASTLE. Seat of the earl of Lonsdale (q.v.). It stands above the village of Lowther, 4 m. from Penrith. The present castle is in the baronial style of the 14th cent.; the N. front is 420 ft. long and the S. front 280 ft. It has a central tower, grand staircase, and magnificent reception rooms, with fine paintings, beautiful and spacious gardens, and a large park through which the river Lowther flows. St. Michael's Church in the village contains memorials of the Lowthers.



Lowther Castle, Penrith. Front and main gateway of the seat of the earl of Lonsdale

LOWTHER HILLS or **LEADHILLS**. Range of hills in Scotland, on the borders of Lanarkshire and Dumfriesshire. Green Lowther (2,403 ft.) and Lowther Hill (2,377 ft.) are the loftiest summits.

LOYAL REGIMENT. Regiment of the British Army. Known until Dec., 1920, as the Loyal North Lancashire Regiment, its official title is The Loyal Regiment (North Lancashire). The 1st battalion was raised in Scotland in 1740, and had no connexion with Lancashire until 1782. The 47th regiment of the line, it was sent to Nova Scotia about 1758, and fought with Wolfe. The old 81st,



Loyal Regiment badge

now the 2nd battalion, made a name at the battle of Maida in 1806. Both the 47th and 81st took part in the Peninsular War. The regiment served with distinction in the Great War. The regimental depot is at Preston.

LOYALTY. Group of French islands in the Pacific Ocean. They form one of the dependencies of New Caledonia. Area, 800 sq. m. Pop. 11,200.

LOYOLA, IGNATIUS (1491-1556). Spanish divine and founder of the Society of Jesus. Inigo Lopez de Recalde, as he was called in Spanish, was born Dec. 24, 1491, at the family castle of Loyola, in the Basque prov. of Guipuzcoa, Spain. He became a page at the court of Ferdinand and Isabella, and then an officer in the army. In 1521, while recovering from wounds and illness, the reading of some religious books led to his conversion and renunciation of the world.



Ignatius Loyola,
Spanish divine
After Rubens

After a period of ruthless asceticism, in the course of which he wrote the *Spiritual Exercises*, he spent some years in study. In 1534 Loyola and six companions dedicated themselves to the service of suffering Christians and the conversion of unbelievers, at the same time vowing absolute obedience to the pope. Loyola was ordained priest in 1537, and in 1540 Pope Paul III accepted the services of the company and authorised the foundation of the order, of which, in 1541, Ignatius was elected the first general. He died at Rome, July 31, 1556. Loyola was canonised in 1622. Pron. Lō-yō-lā. See *Jesuits*.

LOZENGE. In heraldry, a diamond-shaped charge. A lozenge may be pierced; if the hole is circular, the charge is called a *rustre*; if the hole is square, it is described as *square-pierced*; if lozenge-pierced, showing a narrow band, it is called a *mascle*, and is supposed to represent a link of chain armour. The word is also used for a small tablet.

LÜBECK. City and seaport of Germany, also a free state of which it is the capital. The city stands on the Trave about 10 m. from its mouth, 40 m. from Hamburg, and 178 from Berlin, on the Elbe-Trave canal. There is a channel from Lübeck Bay on the Baltic to Lübeck, which is an important trading port. Among the chief objects of trade are wine, timber, and tar. It is an important rly. junction and industrial centre. Pop. 120,788.

Lübeck has preserved its mediæval aspect more than most N. German cities. It is dominated by a number of lofty spires, and contains many fine old houses with gabled brick fronts. The cathedral, founded in 1173, has an altar-piece by Memling. St. Mary's Church, built 1276-1310, has lofty twin spires and a Dance of Death. The Rathaus is of the 13th-16th centuries. The Hospital of the Holy Ghost, an almshouse dating from 1286,

has an early Gothic chapel. The house of the Shipmen's Guild dates from the 16th century.

The territory of the republic extends up the Trave valley from its mouth for about 18 m., having part of Oldenburg on the N., Holstein W. and S., and part of Mecklenburg-Strelitz E. It includes a number of detached portions. The only towns are Lübeck and Travemünde. A new constitution was adopted in 1925. The senate of 11 members is the executive. The area is 115 sq. m. Pop. 127,971.

LUCAN (A.D. 39-65). Roman poet whose full name was Marcus Annaeus Lucanus. He was born at Corduba in Spain, a nephew of Seneca. Owing to the latter's high position at the court of Nero, Lucan started his career under the best auspices, and first attracted notice by a panegyric of the emperor. Later he incurred the jealousy of Nero, and with others he formed a conspiracy to assassinate the emperor. This conspiracy was discovered, and Lucan was compelled to commit suicide at the age of 26. His *Pharsalia*, an epic dealing with the fall of the Roman republic, abounds with passages of brilliant rhetoric.

LUCAS, EDWARD VERNALL (b. 1868). British writer. He joined the staff of *Punch* in 1902; and wrote in conjunction with C. L. Graves *Wisdom While You Wait*, 1903, and a number of similar skits. His works include *Highways and Byways in Sussex*, 1904; *A Wanderer in Holland*, 1905; *A Wanderer in London*, 1906; *Over Bemerton's*, 1908; *A Wanderer in Rome*, 1926, and many others. His biography of Charles Lamb, 1905, new edition, 1921, and his edition of the *Works and Letters of Charles and Mary Lamb* are standard works, while *The Open Road*, 1899, started a new fashion in anthologies.

LUCAS, JOHN SKYMOOR (1849-1923). British painter. Born in London, Dec. 21, 1849, he was apprenticed to a wood carver and sculptor, and his earliest artistic efforts were in this medium, but in 1870 he entered the Royal Academy schools, and henceforth devoted himself to painting. He first exhibited at the R.A. in 1872, was elected A.R.A. in 1886, and R.A. in 1898. Engravings after his historical paintings are popular. He died May 8, 1923.

LUCCA. City of Italy. It stands on the river Serchio, 15 m. by rly. N.E. of Pisa. The 11th cent. cathedral is rich in sculptures, paintings, stained glass, etc.; there are many old and interesting churches and several fine palaces. The old ducal palace, now used as a town hall, contains a picture gallery. There are remains of a Roman amphitheatre. Silk and other textiles are manufactured. A few miles up the valley are the famous hot baths. Lucca was a republic from 1369 to 1797, when it was taken by the French. Pop. 80,565.

LUCE BAY. Bay in the S. of Wigtownshire, Scotland. It runs 16 m. inland and measures 18 m. across the entrance from the Mull of Galloway to Burrow Head.

LUCERNE OR ALFALEA (*Medicago sativa*). Species of medick (q.v.). It is a deep-rooted perennial leguminous plant, with racemes of purple flowers. When sown by itself, or with a corn crop, preferably the former, it stands for several years, and is tolerant of thin, calcareous soils. It is most valued for fattening stock, being cut in the green state and given to cattle.

LUCERNE. City of Switzerland, capital of the canton of Lucerne. It stands on the N.W. arm of Lake Lucerne, where the river Reuss leaves it, 25 m. S.S.W. of Zürich, at an alt. of 1,500 ft. Dominated by the Rigi and Pilatus amid lovely scenery, Lucerne is one of the chief tourist centres of Switzerland. It is the starting point of the St. Gotthard Rly. The principal church, S. Leodogar or Ledger, was part of a Benedictine monastery rebuilt about 1633-35. The town hall, in part early

16th cent., contains the cantonal museum. In the Glacier Garden is the Lion of Lucerne. The city is said to be named after its old water tower, once a lighthouse (lucerna). Pop. 46,150.

The lake of Lucerne is 23 m. long and covers 44 sq. m.

LUCIAN (c. A.D. 120-180). Greek satirist. He was born at Samosata, on the Euphrates, in Syria. He became a travelling rhetorician, giving lectures and teaching in various cities in Asia Minor, Greece, Italy, and Gaul. Towards the end of his life he received an official appointment in Egypt, where he died.

A septic by temperament, Lucian tilted against old faiths, philosophies, and conventions in the most audacious manner. His varied writings, grave as well as gay, afford a valuable picture of the manners of his age. His *True History*, which was written to travesty the artificial romances of the period, anticipates such works as *Gulliver's Travels*, *Rabelais' Voyage of Pantagruel*, and *Cyrano de Bergerac's Journey to the Moon*.

LUCIFER (Lat. light-bringer). Name given to the planet Venus as the morning star; in mythology, the son of Aurora. In the O.T. (Isa. 14, 12) it is found as the translation of a Heb. word, *helel*, which means literally "shining one," a term used as an epithet of the king of Babylon. A misinterpretation of this passage in connexion with Luke 10, 18, Rev. 9, 1-11, led to the identification of Lucifer with Satan.

LUCKNOW. City of India, formerly capital of Oudh, now of the Lucknow division of the United Provinces of Agra and Oudh. Most of the city lies along the right bank of the Gunt. From a distance its minarets appear magnificent.



Lucknow. 1. Ruins of the Residency, destroyed in the Mutiny. 2. Left, Mausoleum of Asaf-ud-daula; right, Huseinabad mosque

or Agra. Among modern institutions is the university, founded in 1920.

Lucknow is an important rly. centre. Native industries include the making of articles in silver, gold, ivory, silk, muslin, and glass. There are railway workshops. Pop. 240,566.



Lucerne. Lake bridge at the point where the Reuss leaves the lake

and the small garrison. The place was at once besieged by mutineers.

On Nov. 16 Sir Colin Campbell relieved the

Alm Bagh, and the residency, Nov. 16, but his force was not sufficient to dislodge the rebels, so he took away the garrison, with its women and children. Campbell regained Lucknow in 1858.

LUCRETIA. In Roman legend, wife of Lucius Tarquinius Collatinus. Inflamed by her beauty, Sextus Tarquinius, son of King Tarquinius Superbus, forced her to yield to his desires. On the following day Lucretia stabbed herself, whereupon Junius Brutus, cousin of Tarquinius, seized the dagger and raised it as a standard of revolt.

LUCRETIVS (c. 98-55 B.C.). Roman poet and philosopher, whose full name was Titus Lucretius Carus. He was a contemporary of Cicero and Caesar, but hardly anything is known of his life, although his great philosophical poem in six books, *De Rerum Natura* (*On Nature*), ranks as one of the world's masterpieces. It is an attempt to express the author's system of Epicurean philosophy and thus to afford his fellow men a rational explanation of life and matter destined to free them from the terrors and cruelties springing from superstition and ignorance, especially, in his view, from belief in divine intervention. Though Lucretius was not a scientist in the modern sense, many of the theories he propounds anticipate the discoveries of modern times.

LUCULLUS, LUCIUS LICINIUS (c. 110-57 B.C.). Roman soldier and epicure. In the third Mithradatic War, which began in 74, he was in chief command for some eight years, and succeeded in driving Mithradates out of his kingdom of Pontus. In 69 he defeated Tigranes, king of Armenia, and overran Mesopotamian Armenia, but soon retired and devoted his days to the gratification of his luxurious tastes by means of the vast wealth amassed in Asia. He was, however, a generous patron of art and letters, and collected a fine library. His gardens on the Pincian Mt. and his villas at Tusculum and Neapolis were famous. Known as an epicure, his banquets became proverbial.

LUCY, SIR HENRY WILLIAM (1845-1924). British journalist. Born at Crosby, he began his journalistic career as chief reporter of *The Shrewsbury Chronicle*, and later became the best known parliamentary press writer in England. His chief work was done for *The Daily News*, his connexion with which began in 1873, and *Punch*, of which he was Toby, M.P., from 1881 until his retirement in 1916. In addition to a parliamentary handbook, he was the author of *Memories of Eight Parliaments*, 1908; *Sixty Years in the Wilderness*, 1909-12; *Nearby Jordan*, 1916; and *The Diary of a Journalist*, 1921. He was also successful as a lecturer. He was knighted in 1909, and died Feb. 20, 1924.

LUDDITES. Name given to bands of rioters who appeared in the midland counties of England in 1811. Industrial distress was acute, and bodies of unemployed went about breaking machinery, which they regarded as the cause of their misfortunes, especially in Nottinghamshire and Leicestershire. The riots continued in 1812, and broke out again in 1816, extending into Lancashire, Yorkshire, and other parts of the country. By accident the rioters became known as Luddites, from Ned Ludd, a boy living in a Leicestershire village.



E. von Ludendorff, German soldier

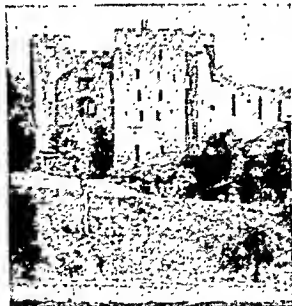
LUDENDORFF, ERNST VON (b. 1865). German soldier. Born April 9, 1865, in the prov. of Posen, he entered the infantry in 1882, and in 1898 joined the general staff, acting as lecturer in the military academy, Berlin,

1906-8, and working, 1904-13, in the operations section which planned the violation of Belgian neutrality. On the German mobilisation he was a major-general and joined the staff of Bülow's 2nd army. He took part in the attack on Liège, receiving the surrender of the citadel. On Aug. 22, 1914, he was sent as Hindenburg's chief of staff to the Russian front, where he was mainly responsible for the victory of Tannenberg and for the successes of 1915. On Aug. 29, 1916, with Hindenburg, he was placed in virtually supreme command of the German forces. He reorganized the German army and planned the strategy which conquered Rumania, while he held the French front defensively. He devised new methods of attack in 1917, employed gas-shells on a great scale, and supported the assault of picked shock troops by trench-mortars, field guns and machine guns. He planned the German offensives of 1918, but these failed and the successes of the Allies followed, and Ludendorff was dismissed on Oct. 26, 1918.

He wrote *My War Memories*, 1919; *The General Staff and Its Problems*, 1920; *Warfare and Politics*, 1922. See Aisne; Marne; consult also *My Married Life with Ludendorff*, by Margarette Ludendorff, 1930.

LUDGATE. Gate of old London. It stood on the W side of the wall, near the Old Bailey. According to tradition it was built by King Lud, but its name is derived by modern authorities from a Saxon word meaning postern. Ludgate Hill extends E. from Ludgate Circus (1864), where it is crossed by a viaduct of the Southern Rly., to S. Paul's Churchyard. In 1928 Ludgate Hill station (Southern Rly.) was closed. In 1930 a system of controlling traffic by means of coloured lights was introduced at Ludgate Circus, a very busy centre at the foot of the Hill.

LUDLOW. Borough and market town of Shropshire. It stands on the Teme, where it is joined by the Corve, 27 m. from Shrewsbury, and is served by a joint line of the G.W. and L.M.S. Rlys. The church of S. Lawrence, Decorated and Perpendicular, has a fine tower. The castle ruins include the Norman keep, the great hall, Mortimer's Tower, and a Norman chapel. Broad Gate, one of the town gates, still stands. Of the old houses the most notable is an inn, The Feathers. Market days, Mon. and Sat. Pop. 5,677.



Ludlow, Shropshire. Ruins of the castle from the north-west

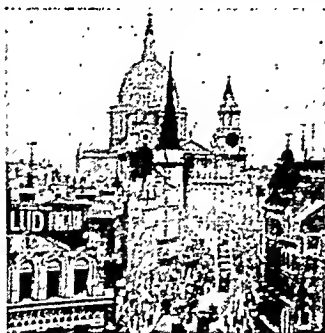
division of the Silurian rocks in Great Britain. Typically developed near Ludlow, they consist mainly of shales, passing gradually into the Old Red Sandstone. See Silurian.

LUDLOW, EDMUND (c. 1617-98). English politician and author. Born of a Wiltshire family, he joined the parliamentary army when the Civil War broke out. In 1646 he entered Parliament, succeeding his father, Sir Henry Ludlow, as M.P. for Wiltshire. He was a member of the court that tried Charles, and signed the death warrant. A member of

the council of state, he went to Ireland in 1651, and after Ireton's death was for about a year in command there. Becoming an opponent of Cromwell, he retired from public life, but returned to it in 1659. At the Restoration Ludlow escaped to Switzerland, and at Vevey passed most of the rest of his life. His *Memoirs* are valuable for the history of the time.

LUDWIG, EMIL (h. 1881). German writer. Born at Breslau, Jan. 25, 1881, he was educated there and at Heidelberg. His first writings were plays, among them a trilogy, *The Renaissance*, and later he wrote novels and essays. His reputation was made by his biographies, the characters being analysed and presented to the world by a fresh and fearless mind. These lives include Goethe, 1920; Napoleon, 1925; William II, 1925; Bismarck, 1926; and Beethoven, 1929.

LUDWIGSHAFEN. Town of Bavaria. Founded by Louis I (Ludwig), king of Bavaria, in 1843, it stands on the Rhine opposite Mannheim, with which it is connected by bridges and ferries. It has a good harbour and a large river trade, chiefly in timber, coal, and agricultural products. Its chemical factories, which make soda, dyes, fertilisers, etc., have a world-wide reputation. Other industries are the making of flour and beer, sawmilling and ironfounding. In the Great War it was an important aircraft centre, and was bombed by the Allies. Pop. 101,869.



Ludgate Hill, surmounted by S. Paul's. Centre, S. Martin's, a Wren church

LUGARD, FREDERICK DEALTRY LUGARD, 1ST BARON (h. 1858). British administrator. Born Jan. 22, 1858, he became a soldier. In 1888 he led an expedition against the slave-traders on Lake Nyasa. The British East Africa Co. made him administrator of Uganda, and in 1897 the British Government appointed him a commissioner in W. Africa, where he raised and commanded the W. African Frontier Force. In 1900 he was made high commissioner for Northern Nigeria and, after serving as governor of Hong Kong, 1907-12, he became governor of both Northern and Southern Nigeria in 1912, and after their union was the first governor-general, resigning in 1919. Lugard, who was knighted in 1901 and created a baron in 1928, married the writer and traveller, Flora Shaw (d. 1929), who was formerly head of The Times colonial department. She undertook special commissions for that paper in Australia and Canada, and wrote *A Tropical Dependency*, 1905.



Lord Lugard, British administrator

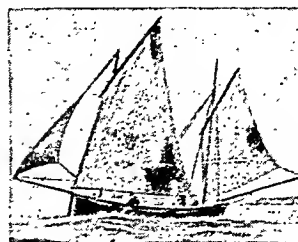
LUGG or LUG. River of England and Wales. It rises in Radnorshire and flows through Herefordshire to the Wye, which it enters 5 m. below Hereford. Leominster is on its bank.

LUGGER. Craft carrying lug sails. Luggers may be one, two, or three masted.

Sometimes they are also fitted with top sails. Owing to their extreme handiness luggers are much used, and they were a favourite craft of the old-time Channel smugglers.

LUKE.

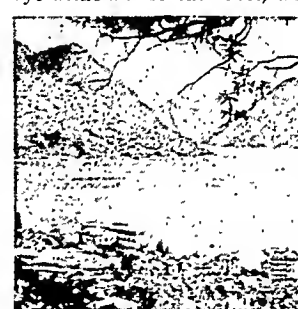
One of the four Evangelists. He is believed to have been a physician of Antioch, one of the early members of the Church of Antioch, and author of the Third Gospel and of the Acts of the Apostles. A follower of Paul and his companion in his missionary journeys, he is said to have died or to have been martyred in Bithynia at the age of 74. According to tradition he was a painter, and he is regarded as patron saint of the fine arts. His festival is held on Oct. 18.



Lugger of the type used by fishermen round the British coast

LUKE, THE GOSPEL OF. The traditional view which ascribes the authorship to Luke, the companion of S. Paul and the beloved physician, is accepted by the majority of modern scholars, mainly on the ground that it is the only theory which satisfactorily explains the critical data of Acts. Luke, as he tells us in the preface, obtained his information from eye-witnesses of the facts, and from written accounts. The Gospel, however, is not merely a compilation from earlier sources and it bears in a marked degree the impress of the writer's own personality. It shows clearly the universal scope of Christ's teaching.

LUKE BURGAS. Town of Greece, in Thrace. On the Karagach, about 35 m. S.E. of Adrianople, it is a commercial centre. It was the scene of a Bulgarian victory over the Turks in the first Balkan War, Oct. 28-Nov. 2, 1912. Pop. about 10,000.



Lugano. View of the north end of the lake, near Porlezza

LULLY or LULLI, JEAN BAPTISTE (1633-87). French composer. By birth an Italian, Lully entered the service of Louis XIV as a violinist. He was made conductor of the king's orchestra, given charge of the opera, and made music master to the royal family. He composed, in 1672, *Les Fêtes de l'Amour et de Bacchus*, which marks the beginning of French opera, following up this with about 20 operas. He died March 22, 1687.

LULLY, RAYMOND (1235-1315). Spanish philosopher and missionary. Also known as Ramon Lull, he was born in Majorca. In 1265 he resolved to devote himself to the conversion of the Saracens. Believing that the truth of Christianity could be demonstrated by reason, he devised the so-called Lullian method for the solution of all problems. He also acquired proficiency in Oriental languages, for the study of which he established chairs at Paris, Oxford, and Salamanca. After journeys in Asia and Africa, on the occasion of a third missionary visit to Tunis, he was stoned and died of his wounds on June 30, 1315.

LULWORTH. Two villages of Dorset. West Lulworth is 8 m. from Wareham, and near is Lulworth Cove, a bay about 500 yds. across almost enclosed by hills. Three miles away is East Lulworth, where stood the 16th

century Lulworth Castle, burned down in 1929. Pop., W. Lulworth, 797; E. Lulworth, 300.

LUMBAGO (Lat. lumbus, loin). Painful inflammation of the muscles of the loins and their tendons, due to inflammatory changes in the fibrous tissue or fascia which surrounds the muscles. The affection may follow a strain in lifting heavy weights, while exposure to cold and wet is a frequent exciting cause. Rest of the muscles is the most important part of the treatment. The back should be protected from cold by covering with flannel, and the application of blisters frequently gives relief.

LUMPSUCKER (Cyclopterus lumpus). Family of short, thick fishes found around the coasts of the Northern seas. One species is common in British waters. On the under side these fishes have an adhesive disk by which they attach themselves to rocks. They are usually about a foot in length. The males have bright red and yellow sides. They watch over the eggs during the breeding season.

LUNACY (Lat. luna, the moon). Term equivalent to insanity. It is derived from the fact that it was formerly believed that the insane were influenced by the moon, or were moonstruck. The lunacy laws deal with the care of the insane.

A lunacy commissioner is an official appointed and removable by the lord chancellor. There are ten in England, seven of whom, three medical and four legal, are salaried, while the other three are unpaid. In Scotland one paid and two unpaid commissioners constitute the board of lunacy. They visit and examine all lunatic asylums, public and private, grant licences to proper persons to open houses for the reception of the insane, and secure the care and treatment of the patients therein.

In Great Britain there are the following types of mental hospitals, as asylums are now known. Public asylums are large county or borough institutions, maintained out of the rates. They are mainly for pauper patients. Registered hospitals for mental diseases are managed by committees, and are maintained by payments from the patients, subscriptions, and endowments. Private asylums are specially licensed institutions which admit mainly well-to-do patients. See Insanity.

LUNDY (Old Norse, grove island). Island off the N.W. coast of Devonshire, 12 m. N.N.W. of Hartland Point. Almost entirely surrounded by cliffs, the island possesses many antiquaries, including the remains of Marisco Castle. From granite quarried here part of the Thames Embankment was constructed. There are two lighthouses. Owned from 1836-1916 by the family of Heaven, Lundy was purchased by Augustus Langham Christie in 1917, and later passed to M. C. Harman. It was long the headquarters of the family of Marisco, famous for their piracies. Its area is about 1,150 acres. Lundy island is 3 m. long and about 1 m. wide.

LUNDY'S LANE. Roadway in Canada, $1\frac{1}{2}$ m. from Niagara Falls. It is famous for an engagement, July 25, 1814, between the British and the Americans. The battle was indecisive, but the Americans abandoned the invasion of Canada.

LUNE. River of England. It rises in the S.E. of Westmorland and flows S. and S.W. through Lancashire to Lancaster Bay. It is 45 m. long. On its banks stands Lancaster.

LUNenburg. Town and seaport of Nova Scotia, Canada. It is 70 m. from Halifax, on the C.N.R. The chief industry is fishing. Pop. 2,792.

LUNETTE (Fr. little moon). Term in architecture denoting a round or oval window in a ceiling, flat or domed. The term is also applied to a picture enclosed by an architectural circular or oval frame in the ceiling of a building.

In military engineering the word is applied to a defensive position having four faces. The two centre ones form an obtuse salient towards the front and the side ones are arranged to afford fire to the flanks.

LUNG. Organ of respiration. In man the two lungs occupy almost the whole of the thorax. Each lung is conical in shape, and is free except at its root, where it is attached to the bronchus or air passage, and where the blood vessels pass between it and the heart. Except at its root it is covered with a delicate serous membrane, the pleura. The left lung is divided into two lobes. The right lung is larger, though rather shorter, and is divided into three lobes. The lobes are subdivided into a large number of small parts known as lobules, each of which consists of a number of minute air sacs. The bronchus, on entering the lung, divides up into a number of smaller branches, which again divide and subdivide, and eventually terminate in the air sacs, which also contain the ultimate ramifications of the blood vessels.

The function of the lungs is to bring about the gaseous interchange with the atmosphere, the oxygen in the inhaled air being taken up by the minute vessels in the air sacs, whilst the carbon dioxide passes out of the blood plasma and is exhaled from the lung. See Phthisis; Pleurisy; Pneumonia; Respiration.

LUNGS OF OAK OR **THREE LUNGWORT** (*Stictia pulmonacea*). Large lichen. It grows chiefly upon the bark of old trees, particularly the oak. It is brownish, and the margins are deeply lobed. The depressions and net-like markings of the under surface suggested a resemblance to the lungs, and it was formerly used as a remedy for pulmonary troubles. Its real value is to the dyer, to whom it is one of the Crotches, and applied to the dyeing of yarn and woollen goods.

LUNGWORT OR **JERUSALEM COWSLIP** (*Pulmonaria angustifolia*). Perennial herb of the order Boraginaceae, native of Europe.

It has a stout creeping root-stock, and lance-shaped leaves which are often spotted with pale green. The funnel-shaped flowers are at first pink, then turn blue, and are clustered at the ends of the bristly branches. The garden plant of the same folk-name is *P. officinalis*, with broader leaves, always spotted, and pale purple flowers.



Lungwort. Leaves and flower clusters

LUNN, LOUISE KIRKBY (1873-1930). British singer. Born in Manchester, Nov. 8, 1873, she gained a scholarship at the Royal College of Music, London, and while a student there made, in 1893, a successful debut in Schumann's *Genoveva*. This opened a big career

for her, and she sang in opera and, in addition, on the concert platform both in England and America during the next 25 years, touring at one time with the Carl Rosa Company. She died Feb. 17, 1930.

LUPERCALIA.

Ancient Roman festival. It was held in honour of the god Lupercus, on Feb. 15. It was originally pastoral and centred round the idea of the fruitfulness of the earth and of nature.

LUPIN. Genus of leguminous plants (*Lupinus*), cultivated for their flowers. They are hardy and half-hardy annuals and perennials, natives of America and S. Europe, ranging in height from 6 ins. to 5 ft., and bearing white, yellow, pink, or blue flowers.

LUPUS (Lat. wolf).

Term applied to several distinct forms of disease of the skin, of which two may be noted.

Lupus vulgaris, generally spoken of simply as lupus, is due to infection with the bacillus of tuberculosis. It usually attacks the nose, cheek, and ears, and begins with the formation of a little yellow spot, which slowly spreads over the surrounding area. Ulceration of the tissues may occur. Treatment consists in building up the general constitution of the patient and removing the affected tissue. Treatment by the Finsen light process and X-ray treatment have proved valuable.

Lupus erythematosus is an inflammatory disease of the skin, the exact cause of which is unknown. It usually begins with the appearance of flat red spots. The bridge of the nose and the cheeks are the areas most often affected. Quinine, salicin, and arsenic have proved useful medicines in treatment of the disease.

LURCHER. Cross between a greyhound and a sheepdog. This breed possesses wonderfully keen sight and scent, and is quick to perceive and obey the slightest sign of its master. It is a born poacher.

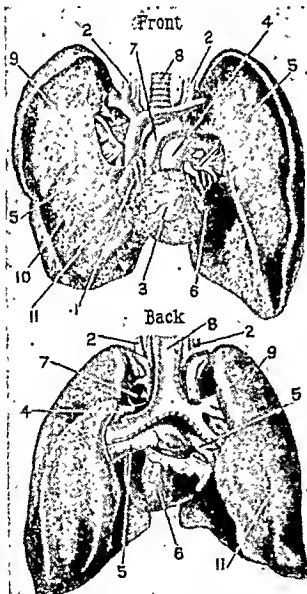
LURGAN. Urban dist. of co. Armagh, Northern Ireland. It is 29 m. from Belfast, on the G.N. of I. Rly. The chief industry is the manufacture of linen; another is that of tobacco. Near is Lough Neagh. The barony of Lurgan, dating from 1839, is held by the Brownlows, and Lurgan Castle, a fine modern building, is Lord Lurgan's seat. Pop. 12,553



Lupin. Flower spikes of *Lupinus roseus*

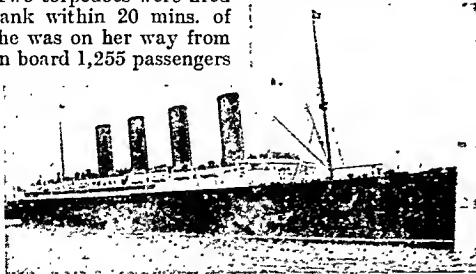


Lumpsucker. Specimen of the species found on British coasts



Lung. Front and back views of the organ. 1. Right auricle. 2. Internal jugular veins. 3. Right ventricle. 4. Pulmonary arteries. 5. Pulmonary veins. 6. Left ventricle. 7. Aorta. 8. Trachea. 9. Upper lobe; 10, middle lobe; 11, lower lobe, right lung

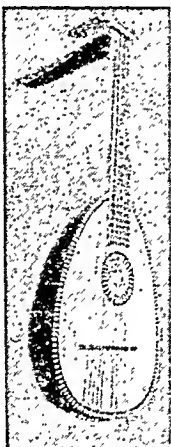
LUSITANIA. Cunard liner, torpedoed and sunk by a German submarine off the Old Head of Kinsale, May 7, 1915. She was one of the world's largest liners, her tonnage being 31,500 gross. Two torpedoes were fired at the ship, which sank within 20 mins. of being first struck. She was on her way from the U.S.A., and had on board 1,255 passengers and 651 crew. Of these 1,198, including 124 Americans, were either drowned or killed. The name Lusitania comes from the Iberian tribe Lusitani and was given to the part of Spain in which they lived.



Lusitania. The Cunard liner lying at anchor

LUSTRUM. Religious ceremony for the purification of the people of ancient Rome. It was conducted by one of the censors just before the expiration of his term of office. This term became fixed at five years, and by a natural transition the word lustrum came to be applied to that period of time.

LUTE. Stringed instrument of Eastern origin, the lute was in vogue from the earliest times to the 18th century. The body is usually pear-shaped, built up with staves of wood like a cask, and often highly decorated. It has a long neck and finger-board with frets. They were of many sizes, e.g. treble, small mean, great mean, counter tenor, tenor, and bass. A larger type of lute, known as the theorbo or arch-lute, had some extra, deep strings, tuned to some of the principal scale notes. The tuning of these bass strings had to be altered when the music changed its key, and the lute family thus had an important influence on musical form, it being the custom, for the sake of convenience, to write all the movements of a suite in the same key.



Lute, inlaid with ebony and ivory, French 17th cent. Victoria and Albert Museum

LUTECIUM. Rare earth metal. Its symbol is Lu; atomic weight 175; atomic number 71. In 1907 Urbain succeeded in separating ytterbium into two elements, which he named neoytterbium and lutecium respectively. The designation ytterbium has been retained for the former. See Ytterbium.

LUTHER, MARTIN (1483-1546). German reformer. He was born at Eisleben, Germany, Nov. 10, 1483, and took his master's degree at the university of Erfurt in 1505. He entered a monastery at Erfurt in that year, was ordained priest in 1507, and in 1508 was transferred to the university of Wittenberg, where he taught and preached with great



Martin Luther, German reformer. Portrait by Holbein et Windsor Castle

power. The ecclesiastical crisis of his life was precipitated by the appearance in Wittenberg in 1517 of a friar, John Tetzel, selling indulgences under the papal authority. Luther publicly protested against the practice by posting up on the church door his 95 theses, and their appearance marks the actual beginning of the Reformation. When,

in 1520, a papal bull condemned his views he publicly burned it in Wittenberg.

Luther was summoned to the diet at Worms in 1521. Faced by both imperial and papal power, he would retract nothing, and he left the city in 1522 under warning of outlawry. Carried off secretly to the castle of the Wartburg in the Thuringian Forest, he remained there in safety for a year, writing his great German translation of the Bible and many hymns. He

then returned to the battle of the Reformation and the task of organizing the German Protestant Church. His work was disastrously complicated by the outbreak of the Peasants' War. Luther, who never was really a democrat, urged the princes to put down the rising with relentless severity, and thus lost popular sympathy for the Protestant cause. His later life was engrossed with ecclesiastical and theological discussion. He died Feb. 18, 1546. See Reformation; consult also Luther and the Reformation, J. Mackinnon, 4 vols., 1925-30

LUTHERANISM. Form of religious faith based on the teaching of Martin Luther. It was organized by the reformer after his breach with Rome and soon had attracted to it a large body of adherents.

The two characteristic features of Lutheran church worship are the place given to preaching and the congregational singing of hymns. Theologically, the fundamental standard of the Lutheran Church is the Confession of Augsburg of 1530.

After its formation period, Lutheranism suffered from a period of theological strife and sank into a moribund orthodoxy. It was largely delivered from this by the movement known as pietism, beginning in the latter part of the 17th and continuing up to the middle of the 18th century. Under Frederick William III, king of Prussia, efforts were made to reorganize the Church in Germany with a view to a union between the Lutheran and the Calvinistic Confessions, both of which had their adherents.

Various unions were realized in the smaller German states, and in Prussia, in 1817, one was accomplished under the name of the Evangelical United Church, which is now the one Lutheran Church for all Germany. This has a semi-Presbyterian constitution, with the supreme supervision resting in the hands of a general superintendent and consistory.

Two tendencies may be noted in modern Lutheranism: one, to increase the power of the synods; the other, to vest in a single official the spiritual control of the Church.

Lutheranism has now about 60,000,000 adherents throughout the world. About 40,000,000 of these are in Germany, and others are in the three Scandinavian countries—Denmark, Norway, and Sweden—where it is the state religion. It is also strong in the United States and Canada, where it has over 2,500,000 communicants. In 1923 the first world convention of all the Lutheran churches was held at Eisenach.

LUTON. Borough and market town of Bedfordshire. It stands near the source of the Lea, 30 m. from London, on the L.M.S. and L.N.E. Rlys. St. Mary's Church is a large and beautiful cruciform building with several interesting features, including a hexagonal baptistry. Part of it is Early English. The town has engineering works, and makes motor cars. It is a centre of the hat industry. Market day, Mon. Pop. 63,830.

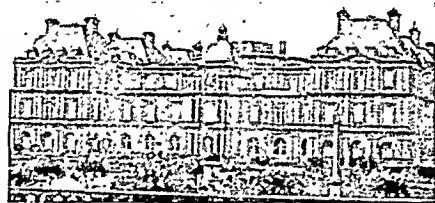
LUTTERWORTH. Market town of Leicestershire. On the Swift, 7 m. from Rugby and 90 m. from London, on the L.M.S. and L.N.E. Rlys., it is chiefly famous for its associations with John Wycliffe, who was rector here, 1374-84. There is a monument to his memory. Market day, Thurs. Pop. 2,092. See Wycliffe, John.

LUTYENS, SIR EDWIN LANDSEER (b. 1869). British architect. Born in London, March 29, 1869, he became both architect and artist, his work winning for him an associateship of the R.A. in 1913 and full membership in 1920. In 1918 he was knighted. In 1912 he was appointed to advise the government of India about the site of the new Delhi, being also the architect for some of the buildings. He was responsible also for the design of the cenotaph in Whitehall, London. See Cenotaph; Delhi.



Sir E. L. Lutyens, British architect Russell

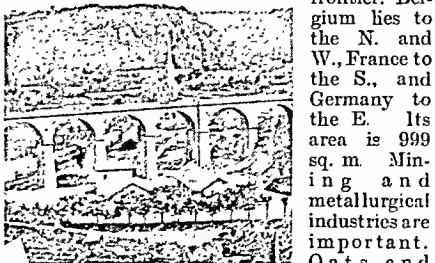
LÜTZEN. Town of Prussian Saxony, S.E. of Merseburg. Pop. 4,469. It is famous for two great battles fought in its vicinity. On Nov. 16, 1632, Gustavus Adolphus, king of Sweden, defeated the Imperialists under Wallenstein, but was himself killed. On May 2, 1813, Napoleon defeated the Prussians and Russians. The second battle is sometimes called the battle of Gross Görschen, after a village near which it was fought.



Luxembourg, Paris. South front of the palace. The east wing houses a famous collection of modern art

LUXEMBOURG. French palace, situated on the left bank of the Seine in Paris. It was designed in 1615 by Jacques de Brosse, for Marie de' Medici. The queen adorned the palace in the costliest manner, but after her death it was neglected. In 1836 the palace was almost entirely remodelled by A. de Gisors. The Musée du Luxembourg, famous for its collection of modern works of art, is on the E. side of the building. The Luxembourg Gardens, originally laid out by Jacques de Brosse, are extensive and beautiful.

LUXEMBURG. Grand duchy of Europe. It comprises the S. portion of the Ardennes Highlands, draining to the Moselle, which



Luxembourg. Great viaduct, built in 1861 across the Pétrusse valley

forms its S.E. frontier. Belgium lies to the N. and W., France to the S., and Germany to the E. Its area is 999 sq. m. Mining and metallurgical industries are important. Oats and potatoes are the main crops. Luxembourg (pop. 55,000) standing on the Alzette, is the capital. Pop. 285,524.

Luxembourg originated in a county, created in the 11th century. In 1444 the duchy, as the county had been since 1354, became part of Burgundy and passed to the emperor Charles V. It was a possession of his descendants

from 1555 to 1713, when it passed to Austria. The French conquered it in 1795.

In 1815 Luxembourg was made a grand duchy and united with the new kingdom of the Netherlands. This union lasted until King William died in 1890. Luxembourg was not inherited by his daughter Wilhelmina, but passed to another branch of the house of Nassau. From 1815 to 1867 the grand duchy was a member of the German Confederation. In 1867 it was declared neutral and independent. In 1919 Charlotte became grand duchess, and in 1922 the country entered into an economic union with Belgium. It is governed by a small cabinet and a chamber of deputies. It was occupied by the Germans, 1914-18.

LUXEMBURG, Rosa (1871-1919). Polish socialist. Born May 5, 1871, in Poland, of Jewish parents, she studied in Germany and became a lecturer on economics in Warsaw. Her opinions got her into trouble with the authorities, and she avoided banishment by escaping to Berlin. There she became a lecturer on economics, and was associated with the socialist movement, for which she spoke much. In 1919, with Karl Liebknecht, she organized the Spartacist rising, and was killed during a riot in Berlin, Jan. 15, 1919.

LUXOR (Arab. el-Kusur, the palaces). Town of upper Egypt. On the E. bank of the Nile, 418 m. by rail from Cairo, it is a winter resort for invalids, and the tourist centre for visitors to the Theban plain. Pop. 13,000.

Luxor, with the adjacent Karnak, comprises the ancient city of Thebes. The Luxor temple, 852 ft. long, comprises a court with double rows of clustered papyrus-columns on three sides. Before the original fan Ramesses II erected a court, now encumbered in one corner by a

97; and Madagascar, 1897-99. He was again in Madagascar, 1900-2, and served in Algeria, 1903-11. He was made resident commissary-general in Morocco, 1912. In 1916 he became minister of war. From 1917 to 1928 Lyantey was resident general in Morocco where he did a great work in bringing peace and prosperity to the country. He was appointed a marshal of France in Feb., 1921.

LYCANTHROPY (Gr. lykos, wolf; an thropos, man). Term for the power popularly attributed in some countries to certain persons of turning themselves into wolves. In Great Britain in former times such persons were commonly known as werewolves.

LYCEUM. Gymnasium sacred to Apollo Lycius. Just outside the city of Athens on the S.E. side, it was famous as the place where Aristotle and his successors taught their philosophy. Hence the name was applied in later ages to the school in which Aristotelian philosophy was taught, and is now used for various educational institutions.

The Lyceum Club is a London club for women. It was founded in 1904 by Constance Smedley (Mrs. Maxwell Armfield). The club house is at 138, Piccadilly, W.

The Lyceum Theatre is a London playhouse in Wellington Street, Strand. The third to occupy the site, the present building opened in 1834 with opera. But the house is chiefly associated with Henry Irving, who was its manager from 1878-1902, and in conjunction with Ellen Terry made it famous by his Shakespearean

productions. The theatre was entirely reconstructed in 1902, and the new building, with the old facade preserved, was opened in 1904. Since 1907 The Lyceum has been the chief home of melodrama in London.

LYCH GATE (A.S. lie, body). Roofed gate at the entrance to a churchyard. At a funeral the coffin here awaits the officiating clergyman. A number of churchyards in England retain their old lych gates.

LYCURGUS (fl. c. 800 B.C.). Reputed founder of the constitution of Sparta. No really authentic facts are known about him, but the tradition was that, after acting as regent for his young nephew King Charilaus, he left Sparta and travelled extensively. On his return he was called upon by the citizens to rescue the state from the confusion into which it had fallen. This he did with signal success, left the country never to return, and was worshipped as a god.

Another Lycurgus (c. 396-323 B.C.) was an Athenian statesman and orator. With Demosthenes and Hyperides he belonged to the national party at Athens which opposed all encroachments on the part of Macedonia. For twelve years he administered Athenian public finance with conspicuous success.

LYDD, Borough of Kent. It is 3½ m. from New Romney, and 71 m. from London, on the Southern Rly. It is attached to the Cinque Port of New Romney. The church of All Saints is a beautiful Early English and Per-

pendicular building. Near the town is Dungeness. Lydd was originally on the coast, but the sea has receded. Pop. 2,256.

The name lyddite is taken from here, that explosive having been tested on the artillery and rifle ranges outside the town.

LYDFORD OR LIDFORD. Parish of Devonshire. It stands on the Lyd, 7 m. from Tavistock, with a station on the Southern Rly. also used by the G.W. Rly. After the Norman Conquest a castle was built here, Lydford became one of the stannary towns, the castle containing the stannary prison. Therein, too, were held the Dartmoor forest courts, at which summary justice is said to have been the rule. Lydford gorge is a beautiful ravine near. Pop. 2,232.

LYDGATE, JOHN (c. 1370-1451). English poet. Born at Lydgate, Suffolk, he joined the Benedictine order at Bury St. Edmunds, being ordained deacon in 1393 and priest in 1397. He was a poet at the royal court, and later prior of a house in Essex. He was buried at Bury St. Edmunds.

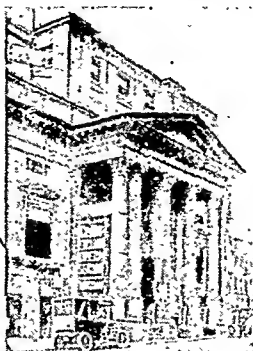
Lydgate wrote poems, songs, fables, and allegories. The Troy Book, first printed in 1513, he translated from the Italian Historia Trojana of Guido delle Colonne; The Story of Thebes, first printed c. 1500, is an abbreviation of Statius' Thebais; The Falls of Princes, first printed 1494, is a translation, through the French, of Boccaccio's De Casibus Illustrium Virorum; The Temple of Glass is an allegory written in imitation of Chaucer's House of Fame.

LYDIA. Ancient country of Asia Minor. It was bounded N. by Mysia, E. by Phrygia, S. by Caria, S. and W. by the Aegean. In Homeric times it was known as Maeonia, but this name disappeared when, about 700 B.C., Gyges seized the throne. His dynasty lasted 150 years, during which period Lydia became a prosperous state. It reached its zenith with Croesus, under whom the Lydian empire extended from the Aegean Sea to the river Hnlys, and the Greek cities of Asia Minor were tributary. In 546 B.C. the country passed under the dominion of Cyrus. After the overthrow of the Persian empire by Alexander, Lydia became an independent kingdom again in 334 B.C., but later became subject to the kings of Syria, and then to those of Pergamum. In 133 it became part of the Roman empire. In the province of Asia. After the Persian conquest the national spirit of Lydia was lost, and the name of the Lydians became synonymous for luxurious effeminacy.

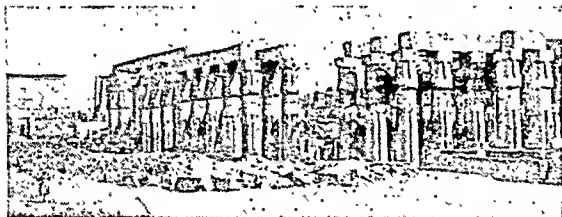
LYE. Name given to a solution of alkaline salts (usually caustic soda or potash) employed for cleansing purposes. Originally the term was applied to the liquid obtained on lixiviating wood-ashes, which was also known as soap-lye because it was used in the manufacture of soap. Lye is used in petroleum refining, tanning, in the textile industry, and for the removal of grease, etc.

LYE. District of Worcestershire, forming with Wollescote the urban dist. of Lye and Wollescote. A mile from Stourbridge, it has manufactures of iron goods. Around are collieries. Pop. 12,025.

LYELL, SIR CHARLES (1797-1875). British geologist. Born Nov. 14, 1797, at Kinnordy, Angus, he graduated B.A. at Oxford, and, after studying law, was called to the bar. Having become interested in science, he devoted himself to the study of geology. He travelled widely in Europe in 1824, and again in 1828-30. His Principles of Geology, 1830-33, won for him the title of the father of modern geology.



Lyceum Theatre, London. The old facade, preserved in the reconstruction of 1902-04



Luxor, Egypt. Colonnades in the court of Amenhotep III, who began the building of this great temple about 1400 B.C.

7th cent. tomb-mosque. Standing colossi of the king, in red and black granite, are placed between some of the columns, and seated figures of himself and his queen flank the portal to the colonnade. The pylon is sculptured with reliefs of the Hittite campaign and with the poetical narrative of the Kadesh battle. The temple walls bear reliefs of royal and religious scenes. In front of the pylon stood six colossal statues of Ramesses II, of which three are preserved. See Egypt; Karnak.

Lwow. Alternative name for the Polish town of Lemberg (q.v.)

LYALL, EDNA (1857-1903). Pseudonym of Ada Ellen Bayly, British novelist. Born at Brighton, March 25, 1857, she became an active social and religious worker. Among her novels are Won by Waiting, 1879; Donovan, the book which first made her name, 1882; In the Golden Days, 1885; Doreen, the hero of which is Michael Davitt, 1894; Wayfaring Men, 1897; and The Hinderers, 1902. She died Feb. 8, 1903.

LYAUTEY, LOUIS HUBERT (b. 1854). French soldier and administrator. Born at Naney, Nov. 17, 1854, he joined the French army as a lieutenant of chasseurs à pied in 1875. He was on active service in Algeria, 1880-82; Tongking, 1894-



L. H. Lyantey, French soldier



Sir Charles Lyell, British geologist

It demonstrated that the forces which produced geological conditions of the past were still going on. Lyell occupied the chair of geology in King's College, London, 1831-33, was twice president of the Geological Society, and president of the British Association. Knighted in 1848, and created a baronet in 1864, he died Feb. 22, 1875.

LYLY OR **LILLY**, JOHN (c. 1554-1606). English story writer and dramatist. A native of Kent, he settled in London about 1577. He became a familiar figure at court, where he supervised the court entertainments, 1578-98. He was M.P. for Hindon, 1589; Aylesbury, 1593 and 1601; and Appleby, 1597. He died Nov. 30, 1606.

Lyly is chiefly remembered as the author of *Euphues*, a work which gave the word euphuism to the English language. In two parts—*Euphues: The Anatomy of Wit*, 1579; and *Euphues and His England*, 1580—this work is composed in a style marked by erudite allusion, forced simile, and excessive antithesis, and vividly reflects the fashions of the time.

LYME REGIS. Borough and watering place of Dorset. On Lyme Bay, 23 m. from Dorchester and 150 m. from London, and on the Southern Rly., it is beautifully placed, with a fine expanse of sand for bathing. The church of S. Michael and All Angels is a fine Perpendicular building with a Norman tower. The curved pier, called the Cobb, is an interesting relic of the past. In 1685 the duke of Monmouth landed here. The name Lyme Regis was given to the place because about 1300 it became the property of the king. Pop. 2,883.

LYMINGTON. Borough, seaport, and market town of Hampshire. It stands near the mouth of the Lymington river, 18 m. from Southampton and 98 m. from London, on the Southern Rly. From here steamers go regularly to the Isle of Wight. It is a yachting centre. Market day, Sat. Pop. 4,600.

LYMM. Urban dist. of Cheshire. It is 5 m. from Warrington, on the L.M.S. Rly. and is mainly a residential suburb of Manchester. There is an old market cross. Pop. 5,288.

LYMPH (Lat. *lympa*, water). Fluid which exudes through the thin walls of the minute blood vessels and comes into intimate contact with the tissues, to which it conveys nutriment. The lymph also gathers up from the tissues the waste products of their activity and eventually re-enters the blood stream by the thoracic duct. Lymphatic glands are bodies through which the lymph vessels pass. Their function is to form some of the white corpuscles of the blood, and they also act in a sense as filters by which bacteria and their toxins may be separated. See *Blood*.

LYMPNE. Village of Kent. It is 2½ m. W. of Hythe, and is an important air port, much of the continental traffic to England passing by here. Lympe Castle, partly modern, includes remains of a 15th century building, and a central tower, of earlier date, said to have been built by Lanfranc. The parish church is a fine building. In the neighbourhood are remains of a Roman station. Pron. Lím. Pop. 592.

LYNCH LAW. Popular term for rough justice administered by a self-appointed tribunal of members of a community, acting in the absence of, or in defiance of, legally constituted authority. The name is variously explained, but generally traced to Charles Lynch, an 18th century farmer in Virginia, U.S.A., who appointed himself a hanging judge in the revolutionary interest. The

practice is now chiefly associated with the southern states of the American union, especially in connexion with crimes committed by coloured people against whites. See *Lydford*.

LYNDHURST. Parish of Hampshire. In the New Forest, 9 m. from Southampton, it is a centre for visitors to the forest. The church of S. Michael, containing a fresco of The Ten Virgins by Lord Leighton, is modern. There is a station on the Southern Rly. at Lyndhurst Road. Pop. 2,562

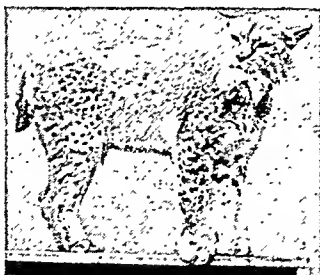


Lord Lyndhurst, British lawyer

Yarmouth in 1818, and afterwards represented Ashburton and Cambridge University. He first made a name by his defence of one of the Luddites (q.v.). In 1819 he was made solicitor-general in the Tory ministry, and in 1824 became attorney-general. In 1827 he was made lord chancellor and a peer. He held that office until 1830, and again 1834-35 and 1841-46. From 1830-34 he was chief baron of the exchequer. Lyndhurst died in London, Oct. 12, 1863.

LYNTON. Urban dist. and watering place of Devonshire. It stands on a cliff, 400 ft. above Lymouth, which is by the sea, a cliff rly. going from one to the other. It is 17 m. from Barnstaple, on the Southern Rly. From here coaches and motors go to places of beauty in the neighbourhood, such as Watcombe and the Valley of Rocks. Pop. 2,649.

LYNX (Lat.). Genus of the cat family, distinguished by its heavy build, short tail, tufted ears, and bearded cheeks. It occurs in many parts of Europe, in Tibet, and in North America. The northern lynx is found in Russia and Scandinavia, and rarely in Central Europe. It is a forest animal, and measures about a yard without the tail, which is about eight inches long. The thick and rather long fur varies from grey to fawn, and in summer is spotted with black. In disposition very savage, it preys on birds



Lynx. Specimen of European species

and mammals. The Mediterranean lynx, found from Spain to Turkey, is a lighter animal. The Canadian lynx ranges in colour from dark grey to almost white, and is found in the forests. See *Caracal*.

One of the constellations is known as the Lynx. Situated between the Great Bear and Cancer, it is very faint, and contains several well-known double stars. See *Constellation*.

Lynx was the name of a British destroyer, sunk in the North Sea by a mine, Aug. 9, 1915. She was a comparatively new boat, of the K class, displacing 950 tons, and was oil driven, having a speed of 31 knots.

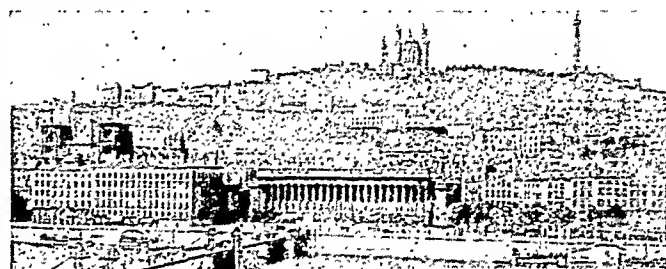
LYON. Old Scottish form of lion, used now in heraldry. The heraldic office for Scotland is called the Lyon Court, and its head is the Lyon king of arms, an office dating back

to 1371. The lord Lyon is assisted by three heralds, Rothesay, Marchmont, and Albany, and by three pursuivants: Falkland, Unicorn, and Carrick. All arms or alterations thereon in Scotland must be entered in the Lyon court, where pedigrees are also recorded.

LYONESSE. Name of a legendary country. It was believed to have lain off the coast of Cornwall, and to have disappeared under the sea; according to another legend it included Cornwall. Cornish and Breton folklore is full of references to this lost land, which also serves as the scene of events described in the Arthurian legends. See *Arthur*.

LYONS. City of France. It lies at the confluence of the Rhône and Saône, 317 m. by rly. from Paris. An important rly. and financial centre, a busy river port with a large shipping trade, the seat of an archbishop and of a university, it is the centre of the French silk industry.

Among noteworthy buildings are the cathedral of S. Jean, dating from the 12th-15th cent., with a fine choir, the chapel of S. Louis, and notable stained glass; the churches of Notre Dame de Fourvière, S. Martin d'Ainay, and S. Nizier; the hôtel de ville, the prefecture, and the Arts Palace,



Lyons, France. View from the left bank of the Saône, showing colonnade of the law courts and church of Notre Dame de Fourvière on the hill

formerly a Benedictine convent, now containing collections of art, antiquities, and science. Artificial silk is a growing industry. Other industries include engineering, brick-making, brewing, distilling, printing, and the manufacture of paper, hardware, pottery, glass, leather, and chemicals. The Lyons commercial fair, held twice yearly, was founded in 1916. Pop. 570,840.

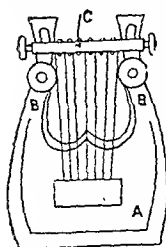
A very old city, as Lugdunum it was the capital of Roman Gaul. Later it became the capital of Burgundy, and its archbishop wielded temporal power until 1273.

LYONS, EDMUND LYONS, 1st BARON (1790-1858). British sailor. Born at Burton, Hants, Nov. 29, 1790, he went to sea in 1803. In 1828 he was sent to the Mediterranean, and in 1835 was appointed minister plenipotentiary at Athens. Transferred to Berne, 1849, and in 1851 to Stockholm, he was recalled in 1853 and sent to the Mediterranean as second in command of the fleet dispatched on the outbreak of the Crimean War. In 1855 he succeeded to the command of the fleet. He was created a baron in 1856, and died Nov. 24, 1858.

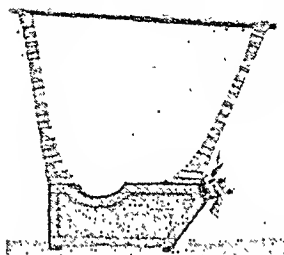
His son, Richard Bickerton Pemell Lyons, entered the diplomatic service in 1839, passed some years at Dresden, Florence, and Rome, and in 1858 was appointed ambassador to Washington. In 1865 he was transferred to Constantinople, and two years later to Paris, where he tried to avert the war of 1870. He represented Britain while the Third Republic was being established. He had been made an earl in 1887, but his titles became extinct on his death, Dec. 5, 1887.

LYONS, SIR JOSEPH (d. 1917). British business man. Born in London, he was educated at a Jewish school. With two friends Isidore and Montagu Gluckstein, he began

to cater for exhibitions and the like, and in 1894 the firm of J Lyons & Co. opened its first tearoom. Others followed, and before Sir Joseph died it was the largest business of its kind in the United Kingdom, with branches all over London and in many parts of the country. He was knighted in 1911, and died June 22, 1917.



LYRE. Musical stringed instrument, used in ancient and medieval times. It consisted of a hollow box or resonator



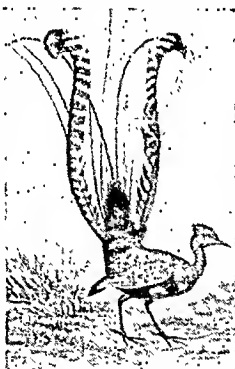
Lyre. Restoration of lyre discovered at Ur (about 3500 B.C.). It is decorated with mosaic and a bull's head in gold. Above, diagram of Greek lyre: A, resonator; B, horns or uprights; C, crossbar

Courtesy of Joint Expedition to Ur

LYRE BIRD. Genus of birds (*Menura*) found in the forests of Australia. In the males the two outer feathers of the tail are curved in the form of the frame of a lyre, while the intermediate ones are slender and provided with few barbs, suggesting the strings. The several species vary in the colour of their plumage; all of them spend most of their time on the ground, in the denser parts of the bush, where they feed upon snails, insects and worms.

LYS. River of France and Belgium. It rises in N.E. France, between Boulogne and Lille, and flows mainly E., joining the Scheldt at Ghent. The middle section of the valley is a densely peopled area. There are steel works in the French section of the valley, while the towns lower down are centres of the linen industry. The Ypres canal joins the Yser with the Lys at Comines. The Lys is 120 m. long, and was prominent throughout the Great War. See Flanders; Ypres.

LYSANDER (d. 395 B.C.). Spartan general and statesman. He rose to fame during the latter period of the Peloponnesian War (q.v.). As commander of the Spartan fleet, off the coast of Asia Minor, he ingratiated himself with Cyrus the Younger, and received from him considerable subsidies for the Spartans, which proved a potent factor in their triumph. In 405 B.C. his fleet defeated that of the Athenians at the decisive battle of Aegospotami. In the following year he took Athens, destroyed the famous Long Walls, and established the rule of the Thirty Tyrants. He was killed in 395.



Lyre Bird. Male specimen of the Australian bird

LYTHAM ST. ANNE'S. Borough and watering place of Lancashire. It stands at the mouth of the Ribble estuary, 6 m from Blackpool, on the L.M.S. Rly. Baths and golf links are among the many attractions. By a charter granted in 1922 the urban districts of Lytham and St. Anne's-on-Sea were incorporated into one borough. Pop 25,977.

LYTTELTON. Seaport of the district of Canterbury, New Zealand. It has a fine natural harbour, 10 m. by 2 m., encircled by steep hills tunnelled to give access by rly. to Christchurch, 7 m. distant. It exports frozen meat, wool, and grain. Pop. 3,800.

LYTTELTON, GEORGE **LYTTELTON, 1st BARON** (1709-73). British politician. The eldest son of Sir Thomas Lyttelton, Bart. of Hagley, he entered the House of Commons in 1735 as M.P. for Okehampton, and was made a peer in 1756. He died Aug. 22, 1773. His son, Thomas (1744-79), who succeeded him, was known as the bad Lord Lyttelton, in contradistinction to his father, the good Lord Lyttelton. On his death the barony became extinct, but it was revived in 1794 in favour of his uncle William Henry (1724-1808) who was succeeded by his two sons in turn.

George William, the 4th Baron (1817-76), succeeded his father in 1837. In 1846 he was made under-secretary for the colonies, but his main interests were outside politics. He joined in founding the Anglican settlement of Canterbury in New Zealand, a fact commemorated by the name of the borough of Lyttelton. From 1869-74 he was chief commissioner of endowed schools. He died April 19, 1876. Lyttelton married the younger daughter of Sir Stephen Glynne, whose elder daughter was the wife of W. E. Gladstone. Of their eight sons, one became Viscount Cobham, and others achieved distinction in various ways.

LYTTELTON, ALFRED (1857-1913). British politician and athlete. Born Feb. 7, 1857, the youngest son of the 4th Lord Lyttelton, he was called to the bar. In 1895 he was returned to Parliament as Unionist M.P. for Warwick and Leamington. He had acted as chairman of the Transvaal Concessions Commission in South Africa, and on his return in 1903 he succeeded Chamberlain as colonial secretary. In 1906 he lost his seat at Warwick, but was returned for St. George's, Hanover Square, which he represented until his death, July 5, 1913.

Lyttelton was a supreme athlete, being master of almost every ball game. At Eton and Cambridge he captained the cricket eleven, and he played for England, keeping wicket against Australia. He played association football also for England, raquets and football for Cambridge, and from 1882-95 was the amateur champion at tennis. He was twice married, first to Miss Laura Tennant, and secondly to Miss Edith Balfour, created G.B.E. in 1929, who wrote his Life, 1917.

LYTTELTON, EDWARD (b. 1855). British schoolmaster. Born in London, July 23, 1855, the seventh son of the 4th Lord Lyttelton, he was a fine cricketer, and captained the Cambridge eleven. He began his teaching career, in 1880, at Wellington College. In 1882 he went to Eton, and in 1890 was made headmaster of Haileybury, where he remained until 1905, when he was chosen head of Eton. He resigned in 1916, and from 1918-20 was rector of Sidestrand, Norfolk.

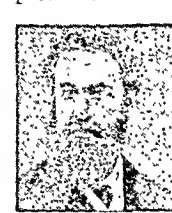
LYTTELTON, SIR NEVILLE GERALD (b. 1845). British soldier. Born Oct. 28, 1845, third son of the 4th Lord Lyttelton, he entered

the Rifle Brigade in 1865. He Fenian rebellion in Canada, Egyptian campaign, 1882, and expedition, 1898, in which he commanded the 2nd 4th division. He was commander in S. Africa, 1902-4, chief of staff 1904-8, and commander Ireland, 1904-12. He was knighted Lyttelton wrote *Eighty Years; Politics, Games, 1927*

LYTTON, EDWARD GEORGE **BULWER-LYTTON, 1st BARON** (1803-1907). Novelist, dramatist, and statesman. Born in London, May 25, 1803, the third son of General Bulwer, of Wood Dalling, Norfolk, his mother was a Lytton of Knebworth, Herts. He was Liberal M.P. for St. Ives, Huntingdonshire, 1831, and Lincoln 1832-41. He sat for Hertfordshire as a Conservative, 1852-66, and was colonial secretary 1858-59, displaying much administrative insight and ability. Made a baronet in 1828 created a baron in 1866. In 1827 he had an unhappy marriage with Rosina Doy (1802-82), herself a novelist, by whom one son, Edward Robert (1831-91) and one daughter, (1828-48). He died Jan. 18, 1873.

Of Lytton's many novels, which were tremendously contemporary vogue, notable are *Pelham*, 1828; *Paul Clifford*, 1830; *Eugene Aram*, 1832; *The Last of Pompeii*, 1834; *Rienzi*, 1835; *The Barons*, 1843; *Harold*, 1848; *The Rivals*, 1849. Of his plays, *The Lady of Lyons*, 1838; *Richelieu*, 1839; and *Money*, 1840, are still occasionally revived.

LYTTON, EDWARD ROBERT **EARL OF** (1831-91). British diplomat and poet. Born in London, Nov. 8, 1831, son of the 1st Baron Lytton, he was his diplomatic secretary from 1849 as private to his uncle, Sir Bulwer, British minister in Washington. He occupied positions of ambassador in Paris, The Hague, Athens, Lisbon, Madrid. In 1874 he was appointed ambassador to Lisbon, and in 1876 was appointed viceroy of India. On his resignation in 1880 he created an earl. From 1887-91 he was ambassador in Paris, where he died Nov. 24, 1891.



1st Earl of Lytton, British diplomatist

Known as an author by the pseudonym Owen Meredith, he wrote *Clytemnestra*, 1855; *The Wanderer*, 1856; *Lucile*, a tale in verse, 1860; *Glenarvon*, the *Metamorphoses*, 1885; *King Poppy*, 1886. His son, Victor, the 2nd earl (b. 1876), was a politician. In 1916 he became civil lord of the admiralty, and in 1917 additional secretary, returning to his position in 1919. He was under-secretary for India, 1920-2, governor of Bengal, 1921, and viceroy and acting governor-general of India in 1925. He wrote the *Life of the Lord Lytton*, 1913. His eldest son, Victor Knebworth, won a reputation as an author. The 2nd earl's sister, Lady Lytton (1869-1923), a strong advocate of women's rights, was four times imprisoned during the suffrage agitation, also attracting much attention. After release she wrote *Prisons and Prisoners*, 1904.

M. Thirteenth letter of the English and Latin alphabets. *M* always has the same sound, as in *mat*, *stem*. In words beginning with *mn*, derived from the Greek, as *mnemonics*, it is mute. As a symbol in Roman notation *M*=1,000, *M*=1,000,000, and as a contraction=Medicine in *M.D.*; Member in *M.P.*, member of Parliament. See Alphabet; Phonetics.

MAARTENS, MAARTEN. Pen-name of the Anglo-Dutch novelist, Joost Marius Willem van der Poorten Schwartz (1858-1915). Born at Amsterdam, Aug. 15, 1858, he began, in 1889, the publication of a series of novels in English, giving a graphic and realistic picture of peasant and bourgeois life in contemporary Holland. His principal works were *The Sin of Joost Avelingh*, 1890; *Gods' Fool*, 1892; *The Greater Glory*, 1894; *Dorothea*, 1904; *The Woman's Victory*, 1906; *The New Religion*, 1907; *Brothers All*, 1909; *Harmen Pils, Peasant*, 1910. He died Aug. 5, 1915.

MAAT, Egyptian goddess. Linked with Ra and Thoth, she personified physical and moral law, and as the goddess of truth was identified with the Greek Themis. Without temples or offerings, she presided in the judgement hall of Osiris when souls were weighed. Judicial officials were allegorically called priests of Maat.

MABINOGION, THE. Collection of ancient Welsh tales. They were first published in an English translation by Lady Charlotte Guest in 1838. The tales comprise eleven prose pieces from *The Red Book of Hergest*, and *Talesin*, which is largely in verse. They were edited by Prof. R. Williams, 1902.

MABLETHORPE. Urban district with Sutton and watering place of Lincolnshire. Situated 13 m. from Louth, on the L.N.E. Rly., it has good sands and bathing. Pop. 6,500.

MABUSE, JAN GOSSAERT DE (c. 1472-1532). Flemish painter. Born at Maubeuge, or Mabuse, in Hainault, he probably studied under Quinten Massys. He was employed by Philip of Burgundy, and visited Rome with him in 1508, where he studied Leonardo and Michelangelo. The chief works of his early pre-Italian period are *The Adoration of the Kings*, in the National Gallery, London, *Christ in Gethsemane*, and portraits of Philip the Fair and Joanna of Castile, at Brussels. Of his later works, the most important include a *Madonna and Child* at Brussels, *Virgin with the Grapes* in Berlin, about 1509, *S. Luke drawing the Madonna*. He died Oct. 1, 1532.

MCADAM, JOHN LOUDON (1756-1836) Scottish engineer. Born at Ayr, Sept. 21, 1756, he experimented in the making of roads, and came to the conclusion that they should be constructed of successive layers of granite or greenstone, broken into small lumps. In 1815, becoming surveyor-general of the Bristol roads, he employed the method he had invented, which in time was generally adopted. He received £10,000 from Parliament, was appointed surveyor-general of metropolitan roads in 1827, and died Nov. 26, 1836.



J. L. Macadam,
Scottish engineer

MACAO, Portuguese colony at S. extremity of the Canton River delta, China, 40 m. S.W. of Hong Kong. The area, including the islands of Taipa and Coloane, is about 10 sq. m. The Portuguese settled here in 1557, and paid tribute to China until 1849, when payment was refused and the Chinese authorities were expelled. In 1887 China formally acknowledged Portuguese sovereignty. The harbour has long been silting up, but dredging opera-

tions have been undertaken. Pop. 157,175, of whom over 152,000 are Chinese.

MACAQUE. Group of monkeys found in S. Asia, and including one species which occurs in N. Africa



Macaque. Specimens of *M. sinica*, the bonnet monkey of India and Ceylon
W. S. Berridge, F.Z.S.

and on the rock of Gibraltar. All are of stout build, with longish muzzles and large callosities on the buttocks. The tail may be long or short, or absent. They live in troops in the forests, where they lead a very active life, and feed upon almost anything eatable that they can find. See Monkey.

MACARONI (Ital. *maccheroni*). Farina-coous food. Made from a hard wheat, rich in gluten, the flour is kneaded into a paste, which is placed in a cylinder perforated at the bottom. A heavy plate presses the dough through the perforations in tubes or strips according to the arrangement of the holes. The macaroni is then cut into lengths and hung over rods to dry.



Macaroni. Lengths of macaroni hanging over rods to dry in the sun

It becomes soft when boiled and swells a good deal, but retains its shape. Macaroni keeps for any length of time and is a nutritious article of food. Formerly only made in Italy, where it forms a staple article of food, it is now also manufactured in France and other countries. See Spaghetti; Vermicelli.

MACARONI. Clique of English exquisites of the 18th century. They were so called from their introducing that Italian dish into England. Having imbibed Continental tastes and fashions while on the grand tour, a group of young men formed the Macaroni Club. They were conspicuous for their affectations and fantastic costumes.

Macaronic verse is the term given to a ludicrous kind of verse written partly in Latin and partly in vernacular words with Latin terminations. An example in French literature is the huresque ceremony of admission of Molière's *Malade imaginaire* to the degree of doctor of medicine.

MACARTNEY, GEORGE MACARTNEY, 1ST EARL (1737-1806). British diplomatist and administrator. Born May 14, 1737, he was sent to Russia in 1764 to conclude a commercial treaty, and succeeded so well that in 1767 he was offered the embassy at St. Petersburg, which he declined. He was chief secretary for Ireland, 1769-72, and afterwards governor of the Carribee Islands, and of Madras. Created an earl in 1792, he was the first British ambassador to Peking. He left there in 1794 and in 1796 was made governor of Cape Colony. He died May 31, 1806.

MACASSAR. Town and seaport of the Dutch East Indies, on the island of Celebes. It is situated on Macassar Strait in the S.W. of the island. Pop. 53,669. See Celebes.

MACASSAR OIL. This vegetable oil is used in pharmacy and perfumery, and manufactured at Macassar. The oil is obtained from the fruit of the *Stadtmannea sideroxylon* or *Schleichera trijuga*. Its once extensive use for the hair brought into use the antimalassar.

MACAULAY, THOMAS BABINGTON, LORD (1800-1859). British historian. Born at Rothley Temple, Leicestershire, Oct. 25, 1800, he entered Trinity College, Cambridge, in 1818, gaining a fellowship in 1824. The publication of his essay on *Milton* in *The Edinburgh Review* began his connexion with the great Whig journal, which continued for some twenty years. In 1830 he entered Parliament as member for Calne, in 1833 he was member for Leeds, and in 1834 he accepted the position of legal adviser to the supreme council of India. Macaulay's four years' stay in India is reflected in his essays on Clive and Warren Hastings, and it was when abroad that he wrote most of the popular *Lays of Ancient Rome*, published in 1843. In 1839 he was elected member for Edinburgh, and became successively secretary for war and paymaster-general of the forces.



Lord Macaulay,
British historian
After Sir Francis Grant

In 1848 appeared the first two volumes of his popular *History of England* from the Accession of James I. The second two volumes appeared in 1855, and the fifth posthumously in 1861. His intention was to bring the history down to his own time, but he failed to get farther than the closing years of the reign of William III. Rejected for Edinburgh at the general election of 1847, Macaulay was elected again in 1852, and in 1857 he was raised to the peerage. He died in London unmarried, Dec. 28, 1859.

MACAULAY, ROSE. British novelist. Her stories of modern English life are marked with lively humour and frequently with a happy satiric touch. Her novels and other writings include *Abbots Verney*, 1906; *The Furnace*, 1907; *The Secret River*, 1909; *The Valley Captives*, 1911; *Views and Vagabonds*, 1912; *The Two Blind Countries*, 1914; *What Not*, 1918; *Potterism*, 1920; *Dangerous Ages*, 1921; *Told by an Idiot*, 1923; *Crewe Train*, 1926; and *Keeping up Appearances*, 1928.

MACAW. Name given to various genera of South American parrots, noted for their gorgeous plumage. Some of them are nearly 3 ft. long including the tail; and the prevailing colours are red, blue, and yellow. There are about 14 species, found from Mexico to Paraguay. They feed in flocks upon fruit and nuts, and utter deafening cries.



Macaw, a South American parrot

MACAW TREE (*Acrocomia sclerocarpa*) Tree of the order Palmae, native of South America. It attains a height of about 40 ft., with a spreading head of large leaves divided into slender leaflets, which when young are eaten as a vegetable. The hard shells of the nuts are made into various ornaments, and from the kernels a thick yellow oil is pressed.

MACBETH (d. 1057). King of Scotland. Nephew of Malcolm II. and ruler of Moray, he married Gruoch, granddaughter of the king of Alghar, and became King Duncan's commander-in-chief. He slew Duncan in 1040, succeeded him on the throne, was defeated by

Siward, earl of Northumbria, in 1054, and was slain by Duncán's son, Malcolm III, called Canmore, at Lumphannan, Aug. 15, 1057. He is known through Shakespeare's tragedy, *Macbeth*.

MACCABEES. Later name of the Hasmonaeans or Asmonaeans, an illustrious Jewish family. In the latter part of the 2nd century B.C. they overthrew Syro-Hellenic tyranny and established a race of priest-kings. Their story begins with Mattathias, an aged priest, who, when ordered to offer sacrifice to the pagan deities at Modin near Jerusalem, killed the Syrian commissioner, slew a Jew who was about to obey the order, and, with his five sons, fled to the mountains. The race ended with Mariamne, by whose marriage with Herod (q.v.) the dynasty passed to the Herodians.

MACCABEES, Book of. Four noted books of the O.T. Apocrypha. Of these 1 and 2 Maccabees are valuable historical works. 1 Maccabees covers the period of Jewish history from the accession of Antiochus Epiphanes to the death of Simon (175-135 B.C.). 2 Maccabees covers part of the same ground (174-161 B.C.), but is of less historical value. 3 Maccabees is of the nature of an historical romance. 4 Maccabees is philosophical, in the Stoic sense, rather than historical. See Apocrypha.

M'CARTHY, JUSTIN (1830-1912). Irish author and politician. Born in Cork, Nov. 22, 1830, he became a reporter on the Cork Examiner and in 1853 joined the staff of The Northern Daily Post at Liverpool. He was editor of The Morning Star, 1864-68, and spent three years in the U.S.A. Writer on The Daily News, 1872-97, he was M.P. for co. Longford, 1879-85; Derry City, 1886-92; N. Longford, 1892-1900; and chairman of the Irish Parliamentary Party, Nov., 1890-Jan., 1896. He died April 24, 1912.

His writings include *Lives of Sir Robert Peel*, 1891; *Leo XIII*, 1896; and *Gladstone*, 1898; *A History of Our Own Times*, 1879-97 and 1905; *Reign of Queen Anne*, 1902; *Portraits of the 'Sixties*, 1903; and several novels.

His son, Justin Huntly McCarthy (b. 1860), wrote several plays, including *My Friend the Prince* 1897; and *If I Were King*, 1901; and some novels. He sat in the House of Commons as a Nationalist, 1884-92.

MCCARTHY, LILLIAN British actress. Daughter of J. McCarthy, F.R.A.S., she first appeared on the stage in 1895 as a member of A. E. Drinkwater's company, and later acted with Ben Greet; William Greet; Wilson Barrett; Beerbohm Tree; Granville Barker; and Matheson Lang. The Little Theatre was under her management in 1911, and in 1919 she became manager of the Kingsway Theatre. In 1920 she married Sir F. W. Keeble.

MACCLESFIELD. Borough and market town of Cheshire. It stands on the river Bollin, 18 m. from Manchester and 166 m. from London, on the L.M.S. and the L.N.E. Railways. The buildings include S. Michael's church, the town hall and the grammar school, which the lines from the 16th century. The chief industry is the silk manufacture. Its earlier history was the manufacture of buttons, the Great Hall in the 16th century. The first town hall was built about 1750. The wild and statesman district on the Derbyshire border is latter period of Forest Forest. Market days, Tues. As commander c.p. 33,846.

MACK, SIR FRANCIS LEOPOLD with Cyrus the Younger, British Arctic explorer. Born in London, Aug. 8, 1819, he entered the navy which proved a potent factor in the Arctic expedition. In 405 B.C. his fleet sailed to the Arctic expedition. Athenians at the decisive battle of Salamis, sent for the potami. In the following year, in 482 B.C. he commanded the famous Long Expedition. He established the rule of the Thirty Tyrants. He was killed in 395.

on which he discovered proofs of Franklin's death. Returning in 1859, he was knighted. Rear-admiral in 1871 and vice-admiral in 1877, he was in command of the North American and West Indian stations (1879-82), and became admiral in 1884. McClintock died Nov. 17, 1907.



Sir F. L. McClintock,
British explorer

Melville Sound and Banks Strait it communicates with Beaufort Sea.

McCLURE, SIR ROBERT JOHN LE MESURIER (1807-73). British Arctic explorer. Born at Wexford, Ireland, Jan. 28, 1807, he entered the navy in 1824, and served in the Arctic expedition of the Terror, 1836-37. In 1848 he accompanied Sir James Ross's expedition in search of Sir John Franklin, and in 1850 commanded the Investigator on an Arctic voyage undertaken by way of Bering Strait. He explored Banks Land, spent two years (1851-53) on the ice, was rescued by the Resolute, and returned to England in 1854. He was knighted and promoted captain upon his return, and was voted £10,000 by the House of Commons for having discovered a North-West Passage. He died Oct. 17, 1873.



Sir R. J. McClure,
British Arctic explorer

MACCORMACK, JOHN (b. 1884). Irish singer. Born at Athlone, June 14, 1884, he studied at Milan under Sabatini, and won the gold medal at the National Irish Festival in 1902. He made a highly successful London debut at Covent Garden, Oct. 15, 1907, and repeated his success in Italy, Australia, and the U.S.A. In 1919 he was naturalised as an American citizen.

MCCUDDEN, JAMES BYFORD (d. 1918). British airman. He went to France in the first days of the Great War and gained the military medal in Sept., 1916, when he destroyed an enemy machine and forced two others to land. On Feb. 15, 1917, he won the military cross, earning the bar to it during Aug.-Sept. In the following November he received the D.S.O., and the bar to that decoration for destroying enemy machines. In March, 1918, he was awarded the V.C. Up to March 31, 1918, McCudden, who had reached the rank of major, had accounted for 54 enemy aeroplanes, of which 42 had been definitely destroyed. He was killed July 8, 1918.

MACCUNN, HAMISH (1868-1916). British composer. Born at Greenock, March 22, 1868, he was professor of harmony at the Royal Academy of Music, London, 1888-94. His overture, *Land of the Mountain and the Flood*, performed at the Crystal Palace in 1887, brought him into notice, and he followed it up with a succession of works, the chief being the cantatas *Lord Ullin's Daughter* and *The Lay of the Last Minstrel*, and the operas *Jeanie Deans* and *Diarmid*. He died Aug. 2, 1916.

MCCURDY, CHARLES ALBERT (b. 1870). British politician. Born March 13, 1870, he became a harrister in 1896, and was Liberal M.P. for Northampton, 1910-23. In 1919 he was made parliamentary secretary to the ministry of food, having given much attention to the subject of rationing, and in 1920 he succeeded J. R. Clynes as food controller. On the abolition of this office in 1921 he became joint parliamentary secretary to the treasury and chief whip for the Liberal section of the

coalition, resigning in Oct., 1922. He retired from Parliament in 1923, and from 1922-27 was chairman of United Newspapers Ltd.

MACDONALD, ÉTIENNE JACQUES JOSEPH ALEXANDRE (1765-1840). French soldier.

Born at Sedan, Nov. 17, 1765, he belonged to a Jacobite family exiled in the cause of James II. He entered an Irish regiment in the service of France, but in 1789 left this to join the revolutionary army. By 1796 he was commanding a division. In 1797 he was made governor of Rome. In 1809 Macdonald was given a command in Italy. For his share in the victory of Wagram he was made a marshal and created duke of Taranto. He served in Spain, was prominent in Napoleon's concluding battles, and in 1814 went over to the Bourbons. He died Sept. 7, 1840.



Macdonald,
Duke of Taranto.
French soldier
After David

MACDONALD, FLORA (1722-90). Jacobite heroine. In 1746 she assisted in the escape of Prince Charles Edward after Culloden, for which she was arrested.

Released under the Act of Indemnity in 1747, in 1750 she married Allan MacDonald of Kingsburgh, emigrating with him to N. Carolina in 1773. During the War of American Independence, Allan was made brigadier-general in the British forces, and Flora accompanied him on service until he was taken prisoner. By his advice she returned to Scotland, 1779. She died at Kingsburgh, March 5, 1790. See Charles Edward.



Flora MacDonald,
Jacobite heroine
Portrait by
A. Ramsay

MACDONALD, GEORGE (1824-1905). Scottish novelist and poet. Born at Huntly, Aberdeenshire, Dec. 10, 1824, he became a



George MacDonald,
Scottish writer
Elliott & Fry

Congregational minister at Arundel, 1850-53, when he resigned and settled at Manchester. Later he came to London and devoted himself to literature, frequently, however, occupying pulpits as a lay preacher. MacDonald died at Ashted, Surrey, Sept. 18, 1905.

A voluminous writer, the first of his works to attract general notice was *Phantastes*, a Faerie Romance in prose, 1858. His poetical output filled two large volumes, 1893. His story books for children include *Ranald Bannerman's Boyhood*, 1871, *The Baek of the North Wind*, 1871, and *The Princess and the Goblins*, 1872. Of his novels, some are of a spiritual and mystical character, such as *David Elginbrod*, 1862; others, such as *Alec Forbes of Howglen*, 1865, are notable for their presentation of Scottish life and character.

MACDONALD, SIR

HECTOR ARCHIBALD (1853-

1903). Scottish soldier.

Born at Rootfield, Urquhart, April 13, 1853, in 1870

he enlisted in the Gordon

Highlanders, so distinguish-

ing himself in the second

Afghan War that he was

recommended for a com-

mission. In 1883 he joined

the Egyptian constabulary,

was subsequently



Sir Hector MacDonald,
Scottish soldier
Lafayette

transferred to the Egyptian army, and became noted for his skill in training native troops. In May, 1902, he was given the command of the troops in Ceylon. After a visit to England, on his way back to Ceylon he shot himself in Paris, March 25, 1903.

MacDONALD, JAMES RAMSAY (b. 1866). British politician. Born at Lossiemouth, Oct. 12, 1866, he became a schoolmaster and then a journalist.

In London he became associated with the socialist movement, edited *The Socialist Review*, and stood several times for Parliament, but without success. From 1901-04 he was a member of the London County Council, and from 1900-12 was secretary of the Labour Party. In 1906 Macdonald entered the House of Commons as M.P. for Leicester, W., and from 1911-14 was leader of the party there. In 1906-09 he had been chairman of the Independent Labour party. In 1918 he was defeated at Leicester, and remained out of Parliament until 1922, when he found a seat at Aberavon.

Recognized as the party's ablest parliamentarian, he was made its leader when it became the official opposition, and in 1924 he was called upon to form a ministry. For nearly a year he was prime minister, the first Labour politician to hold that office, and secretary for foreign affairs. His government was defeated at the general election, Oct., 1924, and he resigned. From 1924-29 he was again leader of the opposition. In June, 1929, after the election, he formed the second Labour Ministry, and became prime minister for the second time. At this time he represented the Seaham division of Durham.

Macdonald has travelled very widely and written a number of books on socialism and other questions. In 1896 he married Margaret Ethel, a daughter of Dr. J. H. Gladstone. She died in 1911, leaving two sons and three daughters. One of the sons, Malcolm, was elected M.P. for the Bassetlaw division in 1929.

MACDONALD, SIR JOHN ALEXANDER (1815-91). Canadian statesman. Born in Glasgow, Jan. 11, 1815, he was a child of five when his father emigrated to Canada and settled at Kingston, Ontario. There in 1836 he was called to the bar. In 1844 he became a member of the Canadian legislature, being attached to the Conservative party. Attorney-general of Upper Canada, 1854-57, he then became prime minister of the two Canadas. When



Sir John Macdonald,
Canadian statesman

in 1867 the federation was accomplished he was knighted and became the first prime minister of the new union. From 1867 to 1874 and again from 1878 to 1891 Sir John was prime minister, and his government was responsible for the introduction of a national system of protection. On his death, May 29, 1891, his widow was made a baroness.

MACDONELL, JAMES (1842-79). Scottish journalist. Born at Dyce, Aberdeenshire, April 21, 1842, he began to contribute to *The Aberdeen Free Press* in 1860, joined the staff of *The Edinburgh Daily Review*, 1861; was editor of *The Northern Daily Express*, Newcastle, 1862-65; a member of *The Daily Telegraph* staff, 1865-75, serving as special correspondent in France, 1870-71; and was

a leader writer on *The Times*, 1875-79. He made a special study of constitutional problems and French politics, and was one of the most notable journalists of his time. He died in London, March 2, 1879.

MACDUFF. Burgh and seaport of Banffshire. It stands at the mouth of the Deveron, on the L.N.E. Rly., 50 m. from Aberdeen. Across the Deveron is Banff a bridge connecting the two. The herring fishery is the chief industry. Macduff was a village named Doune before the land was bought by the earl of Fife in the 18th century. He renamed it Macduff, his family name. Pop. 3,707.

MACDUFF. Thane or earl of Fife. A semi-legendary figure of the 11th century, he is mentioned by early Scottish historians as having conspired with Malcolm Canmore to overthrow the usurper Macbeth. Threatened by Macbeth, he fled to England, but the tale that his wife and children were massacred has no foundation in fact, although it was utilised by Shakespeare for dramatic purposes.

MACE (Fr. Masse). Heavy-headed staff or club, formerly much used in close combat, particularly by ecclesiastics, to whom the sword was a forbidden weapon. It is now a symbol of authority, e.g. the mayoral mace. The mace of the House of Commons is the emblem of the Speaker's authority as the servant of the House, and is removed from its place on the table when the Speaker leaves the chair and the House goes into committee.



Mace of the House of Commons. The staff was made in 1649, and the head, with royal initials and symbols, was added at the Restoration

MACE. Fleishy, inner covering, or aril, of the nutmeg, which, dried in the sun, is used as a spice. When fresh it is a bright red, but on drying it fades to a brown. It is very aromatic, and contains both an essential and a fixed oil. See Nutmeg.

MACE, JEM (1831-1910). British pugilist. He was born at Beeston, Norfolk, April 8, 1831. He acquired fame by beating Bob Brettell in 1860 and then challenged the holder of the championship, Sam Hurst, whom he defeated June 18, 1861. Mace was now champion of the ring, a title he held intermittently until his retirement in 1871. He died Nov. 30, 1910.

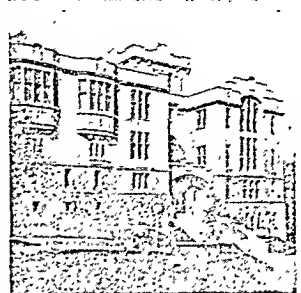
MACE DONIA. Country of Europe, now part of Greece. It was bounded S. by Thessaly and the Aegean Sea, E. by Thrace, and W. by Illyria. The chief towns were Edessa, Pella, Pydna, Philippi, Potidaea, and Thessalonica, the two first being in succession the capital. Macedonia was famous for its salt, gold, and silver mines, and for its vineyards.

Not until the reign of Philip II (359-336 B.C.) did Macedonia become important, reaching the climax of its greatness under his successor, Alexander the Great. At his death (323) the Macedonian empire included Macedonia, Greece, Thrace, Asia Minor, Syria, Egypt, Babylonia, Assyria, part of modern Persia, Afghanistan, Baluchistan, and Central Asia. Under the Diadochi, or successors of Alexander, these possessions were contested among various claimants. In 278 Antigonus Gonatas established himself firmly on the throne, but in 146 Macedonia became a Roman province. In the 15th century it came into the power of the Turks. See Greece.

McEVoy, AMBROSE (1878-1927). British painter. Son of Capt. C. A. McEvoy, he studied at the Slade School, and soon attracted attention by his genre subjects and landscapes. He began portraiture in 1915, and examples of

his work are to be seen in the Tate, the Luxembourg and other galleries. He was elected A.R.A. in 1924, and died Jan. 4, 1927.

MACGILL, PATRICK (b. 1890). Irish poet and novelist. He was born in Donegal, and worked as farm servant and navy. After having published a volume of verse, *Gleanings from a Navy's Scrap Book*, he received an appointment in the library at Windsor. In the Great War he was attached to the London Irish, and saw much service on the western front. His books inspired by the war included *Red Horizon*, 1916; *The Story of Loos*, 1916; *The Great Push*, 1916; *Soldier Songs*, 1917; and *The Brown Brethren*, 1917. Later novels include *Glenmornan*, 1918; *The Diggers*, 1919; *Sid Puddiefoot*, 1926; and *Una Cassidy*, 1928.



McGill University, Montreal. Part of the medical building
Courtesy of Canadian Pacific Rly

MCGILL UNIVERSITY. Canadian university. It owes its origin to property left by James McGill of Montreal, when he died in

1813. In 1821 a charter was obtained for the proposed university. Benefactors have included Sir W. Macdonald and Lord Strathcona.

The university consists of McGill, the original college in Montreal, the Royal Victoria College, which is the women's department, and Macdonald College. McGill has large libraries, laboratories, an observatory, a farm, hospitals, and a medical museum. It is specially famed for its teaching of engineering and medicine. Four theological colleges in Montreal are connected with the university, which has residential facilities for both men and women. It is under a board of governors, who unite with members of the staff to form the corporation. The Montreal buildings, which form a fine group on the campus, were seriously damaged by fire in 1907.

MACGILLYCUDDY'S REEKS. Group of mts. in co. Kerry, Irish Free State. They lie to the W. of Killarney, and include Carraunohill (Carraunahill), 3,414 ft., and other high peaks. In the basin between the Reeks and the Mangerton group are the famous lakes of Killarney.

MACGREGOR, JOHN (1825-92). Scottish traveller, known as Rob Roy. Born Jan. 24, 1825, he became a barrister, but his time was mainly passed in travel, a notable feat being a journey in his canoe, Rob Roy, over the waterways of Europe, this being something of a pioneer undertaking. He travelled also in America, and in other continents. Macgregor was interested in work among boys, being associated with Lord Shaftesbury in his philanthropic work. He died July 16, 1892. His writings include *A Thousand Miles in a Rob Roy Canoe*, 1866.

MACHAERODUS (Gr. machaira, sword, odous, tooth). Extinct genus of cats. They were remarkable for their enormous upper canine teeth, 8 to 10 ins. in length. Fossil remains are found in Pleistocene strata in Europe and America, and show the machaerodus to have been about the size of a tiger. See illustration p. 906.

MACHIAVELLI OR MACCHIAVELLI, NICCOLÒ DI BERNARDO DEI (1469-1527). Italian author and statesman. He was born at Florence, May 3, 1469. In 1498, four years



Niccolò Machiavelli, Italian writer. From a portrait formerly in the possession of the Ricci family.

after the expulsion of the Medici and the foundation of the Florentine Republic, he became secretary to the Ten, a chancery combining the duties of war office and ministry for home affairs, which he held until the Medici returned in 1512. He was then cast into prison, accused of complicity in an attempt to restore the republic, but soon after set free. Retiring to his villa near San Casciano, seven miles from Florence, he wrote *Il Principe* (The Prince), and his *Discorsi* (Discourses on the First Decade of Titus Livius). He wrote also several comedies, including *La Mandragola*, a picture of the men and society of his time, and perhaps the finest comedy of the Italian stage. He died June 22, 1527.

Machiavelli's fame rests upon *The Prince* and the *Discourses*, related books concerning respectively principalities and republics. He regarded the state as the supreme end, and all means to preserve it as justified, morality having nothing to do with the matter.

MACHICOLATION. Term used in fortification. In medieval fortresses it was the provision of an overhanging parapet with holes through which molten lead, stones and the like could be dropped upon the attacking forces. It is sometimes used in modern times for loopholes constructed in fortifications for downward fire, and also for ornamentation in imitation of the original machicolation.

MACHINE GUN. Firearm which discharges rifle bullets or small shell with great rapidity, its essential feature being the acceleration of the operations of loading, firing, and ejection. Dealing first with hand-operated weapons, the mitrailleuse, adopted by France in 1869, consisted of 25 barrels grouped around a common axis within a casing. The cartridges were contained in a plate with 25 holes, and were fired in succession by turning a handle. The Gatling, invented about 1862 and adopted in the British Army in 1871, had six to ten barrels revolving about a central axis, and was operated by turning a crank. The Nordenfält, adopted by Gt. Britain in 1880, had four or more barrels side by side, and was worked by moving a lever. The Gardner gun had one or two barrels, loaded from a hopper and fired by operating a winch handle. It was adopted in 1882.

The Maxim automatic machine gun was adopted for the British army in 1889. It is operated by the recoil of its barrel against the action of springs. The Vickers is another weapon of this type, lighter in construction. The Madsen is a light machine gun of the recoil type, similar in appearance to an ordinary rifle. Weighing about 19 lbs., it is used in the Danish, Norwegian, and Swedish armies. The Hotchkiss and the Lewis gun, introduced into the British service in 1915, belong to the gas-engine type, in which a portion of the propellant gases passes through a small opening in the barrel before the projectile leaves the muzzle, and thus actuates a piston in a cylinder connected to the breech mechanism. Both are capable of being fired

from the shoulder, and may be supported by a rest forming part of the weapon. The Hotchkiss ammunition is fed from a belt, while that for the Lewis gun is contained in a circular hopper. Automatic machine guns continue to fire as long as the trigger is kept depressed and ammunition is available. See Gatling; Hotchkiss; Lewis Gun; Maxim.

The Machine Gun Corps was raised in Oct., 1915. It was divided into four branches: infantry, cavalry, heavy, and motor. Officers underwent a course of instruction at a machine-gun training centre, of which a number were established in England and France. The corps was disbanded in 1921, when it was announced that each battalion of infantry would have a separate machine gun platoon.

Machine gun guards was the name given to two British military units in the Great War. In March, 1917, an administrative unit called Machine Gun Guards was formed, and in May, 1918, another organization, the official designation of which was the 6th or the Machine Gun Regiment of Foot Guards, was established. They were disbanded after the war.



Machaerodus. Reconstruction of the prehistoric genns of cats. See p. 905

of which was the 6th or the Machine Gun Regiment of Foot Guards, was established. They were disbanded after the war.

MACHPELAH. Locality in Hebron, Palestine. Here, in a cave on the hill side, is the traditional burial place of Abraham and other Jewish patriarchs (Gen. 23). Above the cave rises the Mahomedan mosque of El Khalil (the friend, i.e. Abraham). The summit commands a fine view. See Abraham; Hebron.

MACHYNLETH. Urban dist. and market town of Montgomeryshire, Wales. It stands on the Dovey, 21 m. from Aberystwith, being a junction on the G.W. Rly. There are manufactures of flannels and other woollen goods. Market day, Wed. Pop. 1,870.

MACKAIL, JOHN WILLIAM (b. 1859) British scholar and poet. Educated at Balliol College, Oxford, he entered the board of education, and was professor of poetry at Oxford, 1906-11. In 1888 he married Margaret, only daughter of Sir Edward Burne-Jones. His works include *Select Epigrams* from the Greek Anthology, 1890; *Latin Literature*, 1895, one of the most brilliant critical manuals of its kind in any language; the standard *Life of William Morris*, 1899; a notable translation in verse of Homer's *Odyssey*, 1903-10; *Lectures on Greek Poetry*, 1910; *Lectures on Poetry*, 1911; *Shakespeare after 300 Years*, 1916; *Life of George Wyndham*, 1925; *Studies of English Poets*, 1926; and *J. L. Strachan Davidson: a Memoir*, 1926.

His son, Denis Mackail (b. 1892), won fame as a novelist. His books include *Bill the Bachelor*, 1922; *Greenery Street*, 1925; *The Flower Show*, 1927; *Tales from Greenery Street*, 1928; and *How Amusing*, 1929.

MACKAY. Port of Queensland. It stands on the Pioneer river, 625 m. N.W. of Brisbane. The exports include sugar, timber, coffee, copper, and gold. Pop. 8,750.

McKENNA, REGINALD (b. 1863). British politician. Born July 6, 1863, he practised as a barrister for a few years, but in 1895 was returned to Parliament for N. Monmouthshire, and forsook the law for politics. After ten years in opposition he joined the new Liberal government in 1905 as financial secretary to the treasury. In 1907 he entered the Cabinet as president of the board of education, and in 1908 was transferred to the ad-

ministry as first lord. He remained there until 1911, when he was made home secretary, and in 1915, when the Coalition government was formed, he became chancellor of the exchequer. In Dec., 1916, McKenna left office with Asquith, and lost his seat at the general election of 1918. He wrote *Post-War Banking Policy*, 1928. In 1919 he became chairman of the Midland Bank and abandoned political life. He introduced the duties bearing his name.

McKENNA, STEPHEN (b. 1888). British novelist. Born Feb. 27, 1888, he published his first novel, *The Reluctant Lover*, in 1912. He made a great success with *Sonia*, 1917, which was followed by *Sonia Married*, 1919; *Lady Lilith*, 1920; *An Affair of Honour*, 1925; *The Oldest God*, 1926; *The Secretary of State*, 1927; *The Shadow of Guy Denver*, 1928; and *The Datchley Inheritance*, 1929.

MACKENNA, SIR BERTRAM (b. 1863). Australian sculptor. Born at Melbourne, he was a son of J. S. Mackennal, a Scottish



Sir B. Mackennal, Australian sculptor. Russell

sculptor who had emigrated to Australia. After studying in Europe he was engaged, 1889-91, on the decoration of the Government House of Victoria. His *Circe*, produced in 1893, and exhibited at the Salon and the R.A., won him public recognition; and among later works of importance were statues of Queen Victoria for Lahore, Blackburn, and Australia, the coinage designs for King George V, the national memorial to Gainsborough, and much small decorative sculpture in the manner of Alfred Gilbert. He was knighted in 1921.

MACKENSEN, AUGUST VON (b. 1849) German soldier. Born at Haus-Leipnitz, Saxony, Dec. 6, 1849, he entered the army in 1869, and from 1908 to 1914 was general of cavalry and commander of the 17th Army Corps. Becoming at the outbreak of war one of Hindenburg's lieutenants, he was first prominent in the second attack on Warsaw. As generalissimo of all the Austro-German forces in the S., Mackensen carried out the great drive in 1915 against the Russians in Galicia and the Carpathians. He then advanced into Poland. He was made a field-marshal, and in Oct.-Nov. of the same year overran Serbia.



August von Mackensen, German soldier

After Rumania's entry into the war he was put in command of the composite army which invaded the Dobruja in Aug.-Sept., 1916. Having subdued that area, he subjugated Rumania, and remained in that country until the armistice of Nov. 11, 1918.

MACKENZIE. River of Canada. It issues from passes in the Rocky Mountains. At the Athabaska it enters Athabaska Lake, which it leaves as the Slave river, and after 20 m. is joined by its great tributary, the Peace. Entering the Great Slave Lake, it emerges thence as the Mackenzie, and is navigable onwards to its outlet, at Mackenzie Bay, a distance of 1,120 m. The total length is 2,300 m. See Athabaska; Peace; Slave.

MACKENZIE, SIR ALEXANDER (c. 1755-1820). British explorer. Born at Inverness about 1755, he entered the service of the North-West Fur Company of Canada in 1779, and in 1789 was dispatched from Chipewyan Settlement, Lake Athabaska, on an expedition to explore the unknown north-west, in the course of which he discovered the outlet of the river which bears his name, and penetrated to the Arctic Sea. In 1792 he set out to reach the Pacific, and after nine months succeeded and



Reginald McKenna, British politician. Russell

returned to Chipewyan. In 1801 he published an account of his explorations, entitled *Voyages on the River St. Lawrence and through the Continent of North America*. Knighted in 1802, he died March 11, 1820.

MACKENZIE, SIR ALEXANDER CAMPBELL (b. 1847). British musician. Born in Edinburgh, Aug. 22, 1847, he was the most distinguished of a family of Scottish musicians extending over four generations. He was principal of the Royal Academy of Music from 1888 to 1924. For several years he conducted the concerts of the Philharmonic Society in London, and in 1903 made a tour through Canada. He was knighted in 1895. His most successful works are national in character, like *The Cotta's Saturday Night* and the Scottish Rhapsodies. He published *A Musician's Narrative*, 1927.

MACKENZIE, COMPTON (b. 1883). British novelist. Born at West Hartlepool, Jan. 17, 1883, a son of Edward Compton, the actor, he made a hit with his novel, *Carnival*, in 1912; *Sinister Street*, 1913, enjoyed even greater vogue. Other novels include *Guy and Pauline*, 1915; *Sylvia Scarlett*, 1918; *Poor Relations*, 1919; *Rich Relatives*, 1921; *Coral*, 1925; *Vestal Fire*, 1927; and *Gallipoli Memories*, 1929. During the Great War he was director of the Aegean intelligence service, 1917.

MACKENZIE, SIR MORELL (1837-92). British surgeon. Born at Leytonstone, Essex, July 7, 1837, he took a medical degree and won a prize from the College of Surgeons for a treatise on diseases of the larynx. He then devoted himself to this branch of the profession and became a successful surgeon. In 1887 he attended the crown prince of Germany, afterwards the emperor Frederick III, writing a book, *Frederick the Noble*, 1888, which raised much discussion. He was knighted in 1887, and died Feb. 3, 1892.

MACKENZIE, WILLIAM LYON (1795-1861). Canadian politician. Born near Dundee, March 12, 1795, he emigrated in 1820 to Canada. In 1824 he started a paper, *The Colonial Advocate*, in order to focus the discontent felt in Upper Canada, at the arbitrary acts of a small controlling clique, and in 1836 began to advocate republican doctrines, founding a new paper, *The Constitution*. He was soon in touch with the rebels in Lower Canada, and in Nov., 1837, he set up a provisional government. Collecting a force, he marched towards Toronto, but this rising was soon crushed, and its leader fled to the U.S.A. In 1849 he returned to Canada, re-entered the legislature in 1851, and continued in political life until 1858. He died Aug. 29, 1861.

MACKEREL. Fish of the family *Scorpaenidae*, distinguished by their rounded bodies, very small scales, and the form of the dorsal fins. They are found in most parts of the world, three species occurring in Europe. The common mackerel varies in length from 14-18 ins., and is readily recognized by its bluish green back, barred with black, and its silvery underside. The mackerel fishery is conducted in seine and drift nets, and the catch which is obtained is often enormous.

McKINLEY, WILLIAM (1843-1901). President of the U.S.A. Born at Niles, Ohio, Jan. 29, 1843, of Scottish-Irish descent, he fought in the Civil War, and after being called to the bar settled for the rest of his life at Canton, Ohio. Republican member of Con-

gress 1877-91, as chairman of the Ways and Means Committee (1890) he passed the protectionist tariff known as the McKinley Act.



William McKinley, American president

Having twice served as governor of Ohio, he was a successful candidate for the presidency in 1896. The chief events of his term were the war with Spain, the annexation of Hawaii, and the settlement of the control of Samoa. Re-elected in 1900, he was shot by an anarchist, at Buffalo, and died Sept. 14, 1901.

MACKINTOSH, SIR JAMES (1765-1832). British philosopher. Born Oct. 24, 1765, he removed to London, and was called to the bar in 1795. In 1791 he had published a justification of the French revolution, *Vindiciae Gallicae*, in reply to Burke, for which the National Assembly gave him the title of a French citizen. From 1804-11 he held important positions in Bombay. On returning to England he entered the House of Commons. He was also appointed professor of law and general politics at the East India College, Haileybury. He wrote *Dissertation on Ethical Philosophy*. He died May 30, 1832.

MACKLIN, CHARLES (c. 1697-1797). Irish actor and dramatist, whose real name was McLaughlin. He made his first appearance at Drury Lane in 1733. He was the original Colonel Bluff in Fielding's *Intriguing Chambermaid*, and took the part of Squire Badger in the same author's *Don Quixote* in England. He acted at The Haymarket and Covent Garden, also in Dublin, and achieved enormous success as Shylock. His *Peachum*, *Polonius*, and *Iago* were among his other impersonations. He retired Jan. 25, 1789, and died July 11, 1797.

MACLAREN, ARCHIBALD CAMPBELL (b. 1871). English cricketer. Born at Manchester, Dec. 1, 1871, he made his name as a cricketer at Harrow, being in the eleven 1887-90. In 1890 he began to play for Lancashire, and in 1894 was made captain. He was a member of the team that went to Australia in 1894-95, and captain of those that went in 1897-98 and 1901-2. In 1922-3 he captained M.C.C. team to Australia and New Zealand. In England he played against Australia in 1896, 1899, 1902, 1905, and 1909.

MACLAREN, IAN (1850-1907). Pseudonym of John Watson, Scottish author and divine. Born at Manningtree, Essex, Nov. 3, 1850, he studied for the ministry of the Free Church of Scotland at Edinburgh. In 1874 he obtained his first charge in Edinburgh: from 1875-77 he was minister at Logiealmond; and from 1877-80 at S. Matthew's, Glasgow. In 1880 he became minister of Sefton Park Presbyterian Church, Liverpool. He died May 6, 1907.

In 1894 Watson published *Beside the Bonnie Brier Bush*, a book which brought him great fame as a delineator of Scottish character. This was followed by *The Days of Auld Lang Syne*, 1895, and *Kate Carnegie*, 1896. The *Mind of the Master* appeared in 1896.

MACLEAN, SIR HARRY AUBREY DE (1848-1920). British soldier. Born June 15, 1848, he entered the army and was gazetted to the 69th Foot. When stationed in Gibraltar in 1876 he crossed to Morocco, was introduced to the sultan Mulai Hassan, and entered his service, becoming instructor to the Moroccan

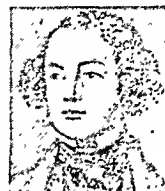
army and principal counsellor of the sultan. Adopting Moorish habits and customs, he remained loyal in his British sympathies, and in 1901 was knighted. In 1907 he was captured by Raisuli, and remained a prisoner until ransomed for £20,000 seven months later. He died at Tangier, Feb. 4, 1920.



Sir Harry Maclean, British soldier
Downey

MACLEOD, NORMAN (1812-72). Scottish divine. He was born at Campbelltown, Argyllshire, June 3, 1812. Minister at Loudoun, Argyllshire, 1838-43, Dalkeith, 1843-45, and the Barony Church, Glasgow, 1851-72, he became chaplain to Queen Victoria in Scotland in 1857. His energies were devoted largely to the furtherance of foreign missions. Editor of *Good Words*, 1860-72, he was the author of numerous sermons, travel sketches, and stories. He died June 16, 1872, in Glasgow.

MACLISE, DANIEL (1806-70). British painter. Born at Cork, Jan. 25, 1806, he early attracted attention by a pencil drawing of Sir Walter Scott in a bookshop at Cork, 1825, now in the Victoria and Albert Museum. He practised portraits, mostly in pencil, until able to proceed to London, where he entered the R.A. schools in 1828. He was elected A.R.A. 1835, and R.A. 1840. MacLise was one of six artists chosen to paint decorations for the House of Lords. Among his pictures are *Malvolio* and the Countess, 1840, and *The Play Scene in Hamlet*, 1842, both in the Tate Gallery. He died April 25, 1870.



Daniel MacLise, British painter
After E. M. Ward, R.A.

MACMAHON, MARIE EDMÉ PATRICE MAURICE (1808-93). French soldier and politician. Born at Sully in Loiret, June 13, 1808, he belonged to a family exiled from Ireland for its loyalty to James II. From 1864-70 he was governor-general of Algeria. In the Franco-Prussian War he held a high command, but was defeated at Wörth. He then led a new force to Sedan, only, however, to be taken prisoner. Released at the peace, he crushed a communist rising, and May, 1873, was elected president of the republic. Suspected of favouring a Bourbon restoration, he resigned office in 1879. He died Oct. 17, 1893.

MACMILLAN, DANIEL (1813-57). British publisher. Born at Upper Corrie, Arran, Sept. 13, 1813, he set up in business in 1843 with his brother, Alexander (1818-96), as a bookseller in London, shortly afterwards returning to Cambridge, where he had previously been employed. There, in 1843, he began publishing books of a religious and scientific nature. Success indeed him to extend his field, and in 1855 he published *Westward Ho!* followed two years later by *Tom Brown's School-days*. He died June 27, 1857.

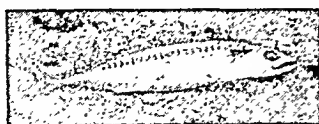


Ian MacLaren, British author and divine

The London business of Macmillan & Co. was founded in Henrietta Street, Covent Garden, London, in 1858. The present building in St. Martin's St., W.C.2, was occupied in 1897.



William L. Mackenzie, Canadian politician



Mackerel. Specimen of the fish which forms a staple article of food
Osley Graham

McNEILL, JAMES (b. 1869). Irish politician. Born at Glenarm, Antrim, Aug. 27, 1869, in 1890 he entered the Indian civil service, in which he had a distinguished career until his retirement in 1921. In 1922 he was chosen chairman of the Dublin county council and a member of the committee appointed to draft a constitution for the Free State. When this came into being, McNeill was appointed its high commissioner in London. He held this office until 1927, when he was chosen to succeed T. M. Healy as governor-general.



James McNeill
Irish politician
Lafayette: Dublin

McNEILL, JOHN (b. 1854). British evangelist. Born July 7, 1854, at Hounston, Renfrewshire, he was ordained to the McCrex-Roxburgh Free Church, Edinburgh, in 1886, and was minister of Regent Square Presbyterian Church, London, 1889-92. He acted as an evangelist with D. L. Moody at Aberdeen, in 1892, and for 16 years conducted successful missions. He was minister of Christ Church, Westminster Bridge Road, London, in 1908, and in 1910 became minister of Free S. George's Presbyterian Church, Liverpool.

MACON. Town of France. Capital of the dept. of Saône-et-Loire, it is on the Saône, 45 m. from Lyons. It is a centre of the wine trade, and gives its name to a Burgundy wine. Pop. 17,600.

MACREADY, SIR CECIL FREDERICK NEVIL (b. 1862). British soldier and administrator. Born May 7, 1862, in 1881 he entered the Gordon Highlanders, and in 1882 served in Egypt. He went through the South African War, and was afterwards assistant adjutant-general in Cape Colony. From 1910-14 he was director of personal services at the War Office. In 1912 he was knighted, and made baronet, 1923. In August, 1914, he went to France as adjutant-general, remaining there until 1916, when he was made adjutant-general in London and a member of the army council. In 1918 he was selected as commissioner of the metropolitan police, and in 1920-22 was commander-in-chief in Ireland.

MACREADY, WILLIAM CHARLES (1793-1873). British actor. Born in London, March 3, 1793, the son of an Irish actor-manager, he first appeared in Birmingham in 1810 as Romeo. In 1816 he played at Covent Garden, and rose to front rank in 1819 and 1820 with performances which included Richard III and Hamlet. By 1837 he had become the leading English actor, and he was manager at Covent Garden, 1837-39. At the Haymarket, 1839-41, he scored great successes in the title rôle of Lytton's Richelieu, and as Alfred Evelyn in Lytton's Money. He was manager of Drury Lane, 1841-43, and died April 27, 1873.



W. G. Macready.
British actor

MACRINUS, MARCUS OPILIUS SEVERUS (164-218). Roman emperor 217-218. He instigated the murder of Caracalla, and ascended the throne. After his disastrous Parthian campaign the soldiery proclaimed Elagabalus emperor. Macrinus was defeated and killed.

MACROOM. Urban dist. of co. Cork, Irish Free State. It stands on the river Sullane, 24 m. by rly. from Cork. There is a castle, built probably in the 12th century. It has a trade in grain and dairy produce. Pop. 2,413.

MacWHIRTER, JOHN (1839-1911). Scottish painter. Born at Slatford, near Edinburgh, March 27, 1839, he entered the school of design in Edinburgh, and in 1854 exhibited

his first picture at the R.S.A. Elected A.R.S.A. in 1864, he first exhibited at the R.A. in 1865. He became A.R.A. in 1879 and R.A. in 1893. His paintings include scenes in the Scottish Highlands and the Italian Alps. He died Jan. 28, 1911.

MADAGASCAR. Island in the Indian ocean belonging to France. It lies off the E. coast of Africa, the Mozambique Channel separating it from the mainland, about 250 m. away. The area is estimated at 241,094 sq. m. Antananarivo (q.v.) is the capital and Tamatave the chief port. The island is mountainous, and there are many extinct volcanoes. The coastline is largely unbroken. The climate is tropical. Of the numerous Malagasy races the most important are the Hovas. Pop., including the Mayotte and Comoro Islands, 3,621,342.

The main occupations of the natives are cattle breeding and agriculture. The crops include rice, sugar, coffee, manioc, cocoa, cotton, tobacco, and rubber. The forests contain valuable timber. Among the minerals are gold, copper, lead, iron, graphite, mica, and phosphates. In 1928 large deposits of coal were found. There are several meat preserving factories. The chief exports are graphite, manioc, tanning bark, rice, hides, raffia fibre, and mica. There are some 430 m. of rly., and wireless stations at Antananarivo and elsewhere.

Madagascar was discovered in 1500 by a Portuguese navigator. In 1890 the protectorate of France was recognized by Great Britain. In 1896 Madagascar was declared a French colony, and by 1899 French authority was finally established.

MADDEN, SIR CHARLES EDWARD (b. 1863). British sailor. He joined the navy in 1875, in 1907 he was appointed captain of the Dreadnought and chief of the staff, Home Fleet, and in 1910-11 junior sea lord. In April, 1911, he was promoted rear-admiral, and successively commanded the first division Home Fleet, the third cruiser squadron, and the second cruiser squadron. He was appointed chief of the staff to Admiral Jellicoe, Aug. 4, 1914. In 1917 he was appointed second in command of the Grand Fleet, and in 1919-22 was commander-in-chief Atlantic and Home Fleets. Knighted in 1916, he was created a baronet in 1919 and awarded £10,000. From 1927-30 he was first sea lord of the Admiralty.



Sir Charles Madden,
British sailor
Nita Martin

MADEIRA. Group of Portuguese islands in the Atlantic off the coast of N.W. Africa. They consist of Madeira, Porto Santo, the only other permanently inhabited island, and the Desertas, three rocky islets to the S.E., and have a total area of 314 sq. m.

The principal island, Madeira, is mountainous and mild in climate, being a favourite health resort. Guavas, mangoes, coffee, oranges, lemons, bananas, and figs are grown and exported, while the wine of the island is famous. The capital and chief port is Funchal (q.v.). Madeira was discovered in the 14th cent., and was first settled in 1419. It was occupied by the British in 1807-14. Pop. 179,002.

MADELEINE, LA. Church in Paris dedicated to S. Mary Magdalene. It stands at the beginning of the Grands Boulevards, facing the Rue Royale. Modelled on the temple of Jupiter at Athens, it was completed in 1843. It is surrounded by a Corinthian colonnade, and has a Grecian façade raised high above the boulevards and approached by 28 steps. The interior contains some beautiful sculptures. La Madeleine is famous for its music.

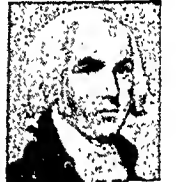
MADELEY. Market town of Shropshire. On the Severn, 7 in. N.E. of Much Wenlock, on the G.W. and L.M.S. Rlys. it has iron-works and coal and ironstone mines. Market day, Sat. Pop. 7,398.

MADISON, JAMES (1751-1836). President of the U.S.A. Born at Port Conway, Virginia, March 16, 1751, he was delegate to the Revolutionary Convention, 1776; the Continental Congress, 1780-83; and the Philadelphia Convention of 1787, summoned to draw up a constitution. Madison was chiefly responsible for the Virginia plan, which with William Paterson's New Jersey plan, and Charles Pinckney's plan, formed the basis of the final compromise, and for his services became known as the Father of the constitution. Later, with two collaborators, he wrote a series of essays published in book form as The Federalist. Democratic president in 1808, and re-elected in 1812, he died at Montpelier, Virginia, June 28, 1836.

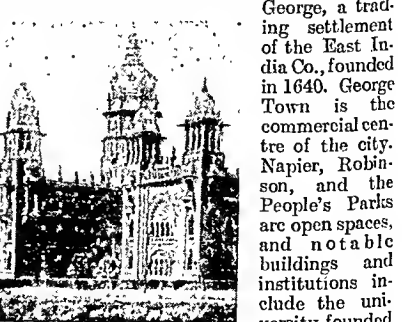
MADONNA (Ital. my lady). Word specifically applied to any representation of the Virgin in Christian art. The Madonna was the dominating theme in painting until the end of the 17th century, and Italian artists excelled in the treatment of this subject, the Madonnas of Raphael, Leonardo da Vinci, Bernardino Luini, Titian, Botticelli, and Giorgione being famous. Murillo's Spanish Madonnas rival the Italian in gracious beauty.

MADRAS. City of India, capital of the Madras Presidency. It is situated on the Coromandel coast, and its artificial harbour has helped to make it the chief port of the Deccan. The city grew up round Fort St. George, a trading settlement of the East India Co., founded in 1640. George Town is the commercial centre of the city. Napier, Robinson, and the People's Parks are open spaces, and notable buildings and institutions include the university, founded in 1857, the general post office, and the observatory, which sets the time for India and Ceylon. Madras has railway communication with Calcutta,

up a constitution. Madison was chiefly responsible for the Virginia plan, which with William Paterson's New Jersey plan, and Charles Pinckney's plan, formed the basis of the final compromise, and for his services became known as the Father of the constitution. Later, with two collaborators, he wrote a series of essays published in book form as The Federalist. Democratic president in 1808, and re-elected in 1812, he died at Montpelier, Virginia, June 28, 1836.



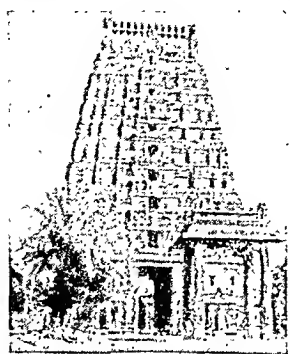
James Madison,
American president



Madras. Law Courts, built in 1892 in Hindu-Saracenic style

Bombay, Calicut, and Tuticorin. Its export list includes cotton, hides, indigo, tea, and other natural products. Pop. 526,911.

PRESIDENCY OF MADRAS. This section of British India is a province which occupies the major portion of the Deccan peninsula, and



Madras. Gateway of the Siva Temple at Conjeeveram, Madras Presidency
F. Deaville Walker

comprises part of the Malabar coast on the W., the whole of the Coromandel coast on the E., and a considerable area in the plateau S. of Hyderabad and Mysore. Madras city is the seat of the government. Ootacamund is the summer capital, and other towns include Calicut, Coimbatore, Madura, and Trichinopoly. The Madras and S. Mah-ratta Rly. and the S. Indian Rly. connect the capital with the large centres of population in and beyond the province. The area is 142,260 sq. m. Pop. 42,318,985

MADRID. Capital of Spain. It stands at an elevation of 2,400 ft., surrounded by an extensive, arid plain, 41 m. N.N.E. of Toledo. The Manzanares river, waterless during summer, is spanned by several bridges. Madrid is the centre of the country's railway system. It has a very variable climate, being exposed to icy winds and scorching sun.

Almost surrounded by public parks and gardens, Madrid has many wide streets, large squares, avenues, and promenades. The chief square, Puerta del Sol, is in the centre of the city and is the focus of activity. From it radiate several imposing streets, one of the finest being the Calle de Alcalá, which traverses the magnificent boulevard, del Prado, flanked by handsome squares, public buildings, including the Prado Museum, the famous gallery of painting and sculpture, and by botanical and other gardens. The chief park, the Retiro, lies to the E. of this district of museums, picture galleries, academies, libraries, government offices, banks, theatres, etc. The royal palace, a massive six-storied building, faces the Plaza de Armas, with the Armoury, a world-renowned collection of arms and armour. Another important street, running W. from the Puerta del Sol, is the Calle Mayor. The National Museum, in the Paseo de Recoletos, contains one of the most important libraries in Europe. The university, transferred from Alcalá de Henares to Madrid, 1836-37, has a valuable collection of books and manuscripts. Pop. 816,928.

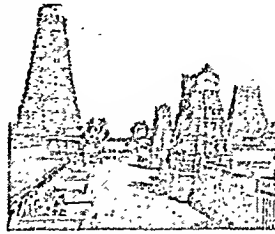
MADRIGAL. Musical composition with secular words, in contrapuntal style. It is used for voices in three or more parts, without separate instrumental accompaniment. In England the madrigal reached its climax in the Elizabethan and early Stuart periods, and was associated with the names of Byrd, Morley, Weelkes, Este, Ford, Wilbye, Dowland, Benet, Hilton, and Orlando Gibbons.

MADURA. Island of the Dutch East Indies. It lies to the N.E. of Java, being separated from it by the Strait of Madura.

The Madurese are Malay fishers and cattle rearers. Area, 1,700 sq. m. Pop. 1,743,818.

MADURA. District and town of India, in Madras Presidency. The district is situated in the middle of the S. portion of the Deccan: to the W. are the Western Ghats. It is drained by the Vaigai and Periyar rivers. The chief crops are cereals, rice, and cotton. Its area is 4,916 sq. m.

The town lies on the Vaigai. The capital of the ancient Pandyan kingdom, it is an historic town and religious centre. The great temple of Sundareswara, with a hall of a thousand pillars, is the chief building. Pop. 138,894. See India; Madras.



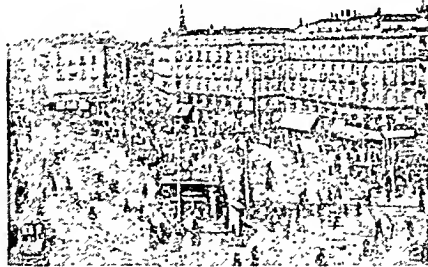
Madura. Great temple of Siva: it contains nine gopuras or pyramids, each profusely carved

MAEANDER (mod. Mender). In ancient geography, river of Asia Minor. Rising near Celacnae (Dineir) in Phrygia, it flows W. with a sinuous course that has become proverbial, and after being joined by the Lycus (Churuk Su), traverses Caria, and discharges into the Icarian Sea. Meander is used literally and figuratively for a winding course.

MAECENAS, GAIUS CILNIUS (d. 8 B.C.). Roman patron of letters. Born between 73 and 63 B.C., of an old Etruscan family, he was a man of great wealth and high culture, and became the intimate friend and adviser of the emperor Augustus. His name has become a popular synonym for a generous patron of art and literature.

MAENAD (Gr. mad woman). In Greek mythology, one of the alternative names for the Bacchantes, or frenzied female companions of the god Bacchus or Dionysus.

MAES, NICHOLAS (1632-93). A Dutch painter. Born at Dordrecht, he was a pupil of Rembrandt. He painted life-size figure subjects, such as The Card Players in the National Gallery, and then turned his attention to smaller genre and portraits. From



Madrid. 1. Calle de Alcalá, with the church of Calatrava. 2. Puerta del Sol, the chief square and centre of the city. 3. Royal Palace

1655-67 he produced his best work in this direction, such as The Dutch Housewife, The Idle Servant, and A Man's Portrait, all of these being in the National Gallery, London. He died at Amsterdam.

MAESTEG. Urban dist. of Glamorgan-shire, Wales. It stands on the Llyfnu river, 8 m. from Bridgend, and is served by the G.W. Rly. The chief industries are iron works and coal mines. It owes its existence to the development of the coalfields. Pop. 29,929.

MAESTRICHT OR **MAASTRICHT.** Town of the Netherlands. It lies on the Meuse, close to the Belgian frontier, 19 m. by rly. S.S.W. of Hasselt. The rly. station is in the suburb of Wyk, on the opposite bank of the river. The church of S. Servatius is said to be a 6th century foundation. The 11th century church of Our Lady has been extensively restored. The Stadhuis, completed in 1664, with a clock-tower, stands in the Groote Markt. Maestricht was the site of a Roman crossing of the Meuse. It has a considerable trade along the river, and some manufactures. Pop. 59,825.

MAESTRICHTIAN GROUP. Group of rocks belonging to the Upper Cretaceous system, occurring typically at Maestricht. Consisting of soft yellowish limestone, the rocks contain numerous remains of corals and hryzoa.

MAETERLINCK, MAURICE (h. 1862). Belgian poet, dramatist, and mystic. He was born at Ghent, Aug. 29, 1862, studied law and practised it for a time in his native city. In 1889 he published the first of his many works, a volume of verse entitled Serres Chaudes (Hothouses). Of his plays the most famous is L'Oiseau Bleu, popular in Britain as the Blue Bird. He produced translations from Ford, Emerson, Novalis, and J. Van Ruysbroeck, and many volumes of prose, including: Le Trésor des Humbles, 1896; La Sagesse et la Destinée, 1898; La Vie des Achilles, 1901; Le Double Jardin, 1904; L'Intelligence des Fleurs, 1907; La Mort, 1913; and La Vie des Termittes, 1926. Most of his more important works have been translated into English. In 1911 Maeterlinck was awarded the Nobel prize for literature. Maeterlinck's plays depend rather on mood than on movement, suggestion of the event rather than its presentation. They are attempts to clothe mystical conceptions in concrete form.



Maurice Maeterlinck
Belgian poet
Elliott & Fry

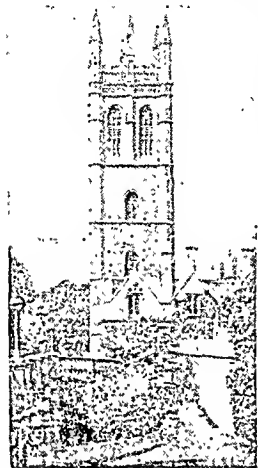
MAFERING. Town in British Bechuanaland. It is 870 m. from Cape Town, and here are the headquarters of the Bechuanaland administration. It was the starting point of the Jameson Raid, 1896. Pop. 2,297. A mile away is the native town on the Molopo river. Mafeking was besieged during the South African War by Cronje at the head of a large force, and was defended by Baden-Powell from Oct. 13, 1899, to May 17, 1900, when the town was relieved by Col. Mahon and Col. Plumer, who had joined forces. See Baden-Powell, Baron; South African War.

MAFIA. Name of a Sicilian secret society. Its origins are traced to the ill-disciplined forces of gendarmerie instituted in Sicily by Ferdinand IV, and in general objects the body was similar to the Camorra. When the society was an organized whole, its members, known as Mafiosi, were sworn to defy all established forms of justice. Reaching its highest pitch about 1860-70, the Mafia carried on robbery, smuggling, and murder; strongest in and around Palermo, it showed itself also in Italy, and attempts at suppression were made in 1874-75. The society was broken up in 1928 by Mussolini and Cesare Mori, prefect of Palermo. See Camorra; Vendetta.

MAGADI. Lake, mainly in Tanganyika Territory, but with its N. shore in Kenya Colony. It contains enormous deposits of carbonate of soda. See Alkali

MAGDALA OR MAKDALA. Fortress of Abyssinia. It stands 120 m. from Gondar and 250 from Jibuti on the Gulf of Aden, on a plateau over 9,000 ft. high. This plateau was fortified by the emperor Theodore. In 1860, having seized the British consul and other foreigners, he carried them off to Magdala and refused to release them. An expedition was fitted out under Sir Robert Napier, and on April 13, 1868, the fortress was taken and utterly destroyed. Napier was created Lord Napier of Magdala. The fortress was afterwards rebuilt.

MAGDALEN COLLEGE. College of Oxford University. It was founded in 1458 by William of Waynflete, bishop of Winchester, and was dedicated to S. Mary Magdalen. It stands at the E. end of the High Street, and has a deer park and extensive grounds along the Cherwell, including Addison's Walk. The range of buildings includes the tower, on the top of which a Latin hymn is sung at sunrise on May Day; the chapel is famous for the beauty of the choral services. There is a school for boys on the same foundation.



Magdalen College, Oxford, and the bridge over the Cherwell

Another Magdalen College School, an offshoot of this, is at Brackley. Pron. Maudlen. See Oxford.

Magdalene College, Cambridge, was founded in 1542. It is famous for its association with Pepys, and has the MS. of his famous diary.

MAGDALENIAN. Late period of the upper palaeolithic age in Europe. In it the climate was cold, the reindeer, bison, and horse flourished, and the mammoth became extinct. The Crömagnon race, ousting the Solutrian, became modified, and prehistoric art reached its zenith. Named from La Madeleine, Dordogne, the 'stations' extend from Kent's cavern to Russia. See Azilian.

MAGDEBURG. City of Germany, capital of Prussian Saxony. A centre of trade and industry and an important rly. junction, it lies 90 m. S.W. of Berlin on the left bank of the Elbe, here flowing in three streams and forming two islands, one of which contains the citadel. Magdeburg is one of the chief seats of the sugar-refining industry, to supply which much beet is grown in the district. The town has great iron foundries and engineering establishments. Shipbuilding is also carried on. The most interesting building is the cathedral built in the 13th century in the Romanesque and Early Gothic styles. In it are the tombs

of Otto I and his wife, Edith of England, and a monument to Archbishop Ernest. It has two fine western towers. Pop. 297,020.

MAGDEBURG HEMISPHERES. Device invented by Otto von Guericke of Magdeburg, about 1650, for illustrating atmospheric pressure. It comprises a pair of hemispherical metal cups, having edges which fit accurately one in the other. To one is fitted a cock. The edges are coated with grease and pressed together, and after exhausting the air from the interior of the hemispheres they can be parted only with difficulty.

MAGELLAN, FERDINAND (c. 1480-1521). Portuguese navigator, whose real name was Fernao do Magalhães. In 1504 he went to India with Dom Francisco d'Almeida, the first viceroy. After expeditions to Malacca, Java, and the Spice Islands, he returned to Portugal in 1512, and served in a campaign in Morocco, in which he was lamed for life. He entered the Spanish service in 1517, and two years later embarked with a fleet of five vessels to find a western route to the Spice Islands. In October, 1520, he discovered the strait which bears his name. The first to enter the Pacific, which he named, he reached the Ladrões, March 6, 1521, and visited the Philippine Islands, but in a fray with the natives of Matan Magellan was killed, April 27, 1521. After his death his fleet doubled the Cape of Good Hope and returned to Seville, having thus completed the first voyage round the world.



Ferdinand Magellan, Portuguese seaman

The Strait of Magellan is a passage connecting the Atlantic with the Pacific, near the S. extremity of S. America. Its extreme length is 365 m., while its width varies from 2½ m. to 17 m.

MAGERSFONTEIN, BATTLE OF. Fought between the British and the Boers, Dec. 11, 1899. A British force about 10,000 strong, under Lord Methuen, was advancing to the relief of Kimberley. In front was a semicircle of hills held by the Boers. On Dec. 10 the force moved out to the attack. The men were moving in close order, when the Boers suddenly opened fire, and it was impossible to secure a general advance. At nightfall the Boer guns began to play again, and Lord Methuen withdrew his army to the Modder. The British lost nearly 1,000 men. See South African War.

MAGGIORE. Lake of N. Italy and S. Switzerland. The ancient Lacus Verbanus, it is 38 m. in length, and from ½ m. to 5½ m. in breadth; its maximum depth is 1,200 ft., and its area is 82 sq. m., while its surface alt. is 640 ft. It is fed by the Maggia, the Tosa (Toce), and the Ticino (Tessin), which traverses it. Lofty mountains enclose the N. part, while to the S. the hills, covered with vineyards, slope gradually to the plain. Lake Maggiore is noted for its beautiful scenery. Opposite Pallanza are the Borromean Islands (q.v.).

MAGI. Caste of learned priests in ancient Persia. An aboriginal Median tribe, they became predominant through their development of central Asian shamanism, practising exposure of the dead and next-of-kin marriage.

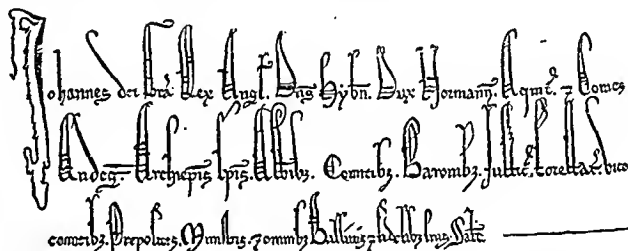
After their Aryan subjugation they acquired control of the Zoroastrian worship, contributing thereto its dualistic principle. They maintained their supremacy throughout the Sassanian empire, ultimately declining into unhonoured jugglers, whence the English word magic. The Magi of the Nativity story (Matt. 2) are popularly associated with much unhistoric tradition.

MAGIC. Practice of attempting or pretending to control events by non-rational processes. It is based on a belief that man may secure the mastery of nature and the supernatural by means of appropriate rites, manual or oral.

When magic is countenanced by the community at large, its professed exponents are held in esteem so long as they are thought to be working for the general good. But there often arises a suspicion, if not a certainty, that magical powers are being exercised for private ends, and this aspect of them leads to their being regarded as antisocial and condemned as illicit. Hence the distinction between white and black magic, the one beneficent, the other baleful.

At the beginning of our era magical arts came into conflict with Christian teaching. They comprised a farrago of beliefs affected by neoplatonism and other philosophical speculations. Introduced into W. Europe through Byzantine and Saracenic channels, they developed new methods during the Middle Ages, and made use of a mystic apparatus of wands, rings, mirrors, diagrams, symbols, and meaningless phrases, deemed by their exponents to be endowed with a potency which attained their ends. See Divination; Fetishism; Taboo; Voodoo; Witchcraft.

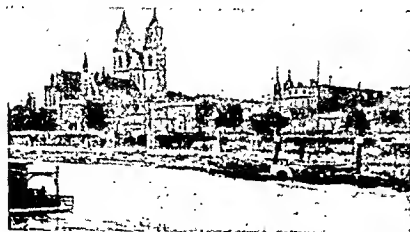
MAGIC LANTERN. Optical instrument for the projection of pictures, etc., on to screen. The body is of box form, of wood or metal, or wood lined with asbestos and metal to protect the woodwork from the intense heat of the electric arc or limelight, or other illuminant used. The optical part of the instrument consists of two sets of lenses, the condenser and the objective.



Magna Carta. Facsimiles of three lines of the preamble. See article, p. 911

MAGISTRATE (Lat. magistratus). Official of Roman origin, mainly concerned with administering the law. The order of magisterial rank was dictator, consul, praetor, master of horse, censor, aedile, quaestor.

In modern usage the word magistrate is applied to a large number of people, who are publicly vested with authority to administer the law. Justices of the peace in England are chiefly unpaid magistrates appointed by the crown on the advice of the lord chancellor, and are divided into county magistrates and borough magistrates. Paid magistrates are known as stipendiary magistrates, and are appointed on the petition of the council of a municipal borough to the home secretary. A stipendiary magistrate must usually be a barrister of seven years' standing, and can act alone, whereas two unpaid justices at least must act. In London all the police magistrates are stipendiaries, and the lord mayor and any



Magdeburg, Germany. View across the Elbe from the citadel, looking towards the twin-towered cathedral

alderman, sitting at the Mansion House or Guildhall, have all the powers of a stipendiary See Justice of the Peace

MAGNA CARTA (Lat. great charter). Document signed by King John of England in 1215, to secure the nation's liberties. John had overridden or sought to override all law, and in Jan., 1215, the barons demanded the confirmation of the old charter issued by Henry I, promising to observe "the good laws of Edward the Confessor." The barons were largely guided by the archbishop of Canterbury, Stephen Langton, and the king was compelled to set his seal to the Great Charter on June 15, 1215, at Runnymede. See illus. p. 910.

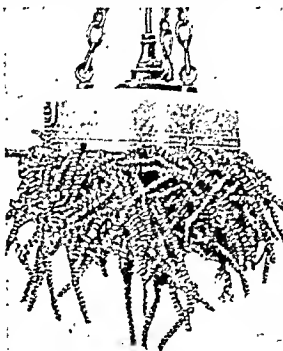
MAGNESIA. Oxide of magnesium, MgO . The name is also applied to the carbonate known commercially as magnesia alba. The oxide is a white, light, amorphous powder used in the manufacture of firebricks, crucibles, etc. It is also used in medicine.

MAGNESITE. Mineral which consists of magnesium carbonate. Closely resembling calcite, it has a vitreous lustre, and varies in colour from white or light yellow to brown. It is found in veins in magnesium rocks in Moravia, Styria, Silesia, Norway, and the U.S.A. Magnesite is used in the preparation of magnesia, Epsom salts, in paint and paper manufacture, and for firebricks.

MAGNESIUM. Metallic element, symbol Mg, atomic weight 24.32, atomic number 12, specific gravity 1.75. It is a white metal which burns with an intensely white light when a ribbon or wire of it is ignited in the air. On a large scale magnesium is obtained by heating a mixture of magnesium and sodium chlorides with metallic sodium in an iron crucible. The metal is hard, malleable, and ductile, and is used in photography in ribbon or powder form on account of its brilliant white light. It is also used in fireworks and in signalling. On burning in air magnesium forms magnesium oxide, known as magnesia (q.v.).

Magnesium carbonate occurs native as magnesite, or combined with calcium carbonate as dolomite. Magnesium sulphate or Epsom salts occurs native as kieserite and epsomite, and in many mineral springs. Citrate of magnesia is a mixture of sodium bicarbonate, tartaric acid, Epsom salts, and sugar. Magnesium forms the chief constituent of many silicates, e.g. as augite hornblende, olivine, meerschauum.

MAGNET. Any substance which has the power of attracting iron, steel, nickel, and certain other substances. A magnet may be natural, as a lodestone, or artificial, and either permanently or temporarily magnetic. The permanent magnet is a bar of hard steel or horseshoe shape magnetised by contact with another permanent magnet or by being placed inside a coil through which a strong electric current is passed. Electro-magnets are made of very pure soft iron or mild steel, and are excited by current flowing through a coil or coils of insulated copper wire wound on them. The attractive force of a magnet depends on the amount of current



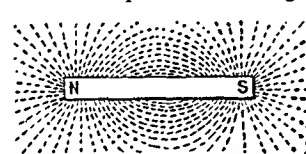
Magnet attached to a crane and used for lifting scrap iron
Courtesy of General Electric Co., Ltd.

flowing through its coils, multiplied by the number of turns in the coils

In polarised magnets, which are used in telegraphy and telephony, the poles of a permanent magnet are provided with coils similar to those of an ordinary electro-magnet. Current passed through the coils reinforces or acts against the permanent magnetism, according to the particular direction in which it circulates See Telephone.

MAGNETISM.

Science of magnets and magnetic forces. The earliest magnets known were natural magnets, pieces of a certain iron ore called lodestone, found, among other places, at Magnesia, in Thessaly, whence the name. These possessed the property of attracting small pieces of iron, and when freely suspended they pointed N. and S. In a straight bar magnet the magnetic power of attraction is concentrated in the two ends, known as poles, and the centre of the magnet possesses no such power. If a bar magnet is broken in two, each part is a magnet with two poles. If a light steel strip is magnetised and suspended on a pivot so that it can turn about its centre in a horizontal plane, it will point approximately N. and S., and is, in fact, a crude form of the mariner's compass. If two such needles are placed close together, it will be found that the two N. poles repel each other, and that the two S. poles likewise repel each other, but that the N. pole of either magnet attracts the S. of the other. The interposition of a screen of wood, paper, etc. has no appreciable effect on the magnetic force.

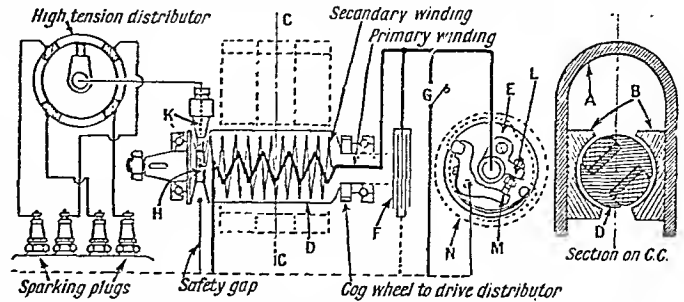


Magnetism. Diagram showing the magnetic lines of force round the N. and S. poles of a bar magnet

If a magnet is dipped into iron filings, they will cling in masses round the poles. Each tiny piece of iron becomes a magnet, and all the S. poles of the filings are turned towards the N. pole of the magnet and vice versa. If a sheet of stiff paper is laid over a magnet and covered with iron filings, the filings arrange themselves in well-marked curved lines, which spread out from the poles in all directions. These are the "lines of force." The sphere of influence of a magnet is called a magnetic field. See Dynamo; Electricity; Permeability; Reluctance.

TERRESTRIAL MAGNETISM. Study of the earth's magnetic properties. The fact that the earth exerts some power on a magnet and causes it to point approximately N. and S. has been known from the earliest times. The magnetic poles do not coincide with the geographical poles, and their positions are undergoing steady as well as fluctuating changes. The magnetic intensity of the earth varies not only owing to sun-spot influence, but in a number of other ways. There is a diurnal variation, greater in summer than in winter, and it is greater than usual during a period of sun-spot activity, and also greater during hours of daylight than at night. There is also a seasonal change, local changes probably due to hidden masses of magnetic ores, as well as a small change due to the moon. One of the most remarkable evidences of terrestrial magnetism is that afforded by the magnetic storms which upset telegraphic transmission.

MAGNETITE. Important ore of iron. It is an oxide of the metal, its composition being, when pure, 72.4 parts of iron and 27.6 oxygen, though it is often contaminated with sulphur and phosphorus, and frequently contains silicon and titanium. In colour it is iron black, has a metallic lustre, and is strongly attracted by the magnet. Small pieces are often found to



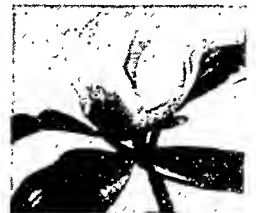
Magneto. Production of high-tension currents for sparking plugs. A, horseshoe magnet; B, pole pieces; D, armature; E, contact breaker; F, condenser; G, earth switch; H, slip ring; K, carbon brush; L, M, platinum points; N, contact breaker cover

have polarity. Masses of magnetite having polarity constituted the lodestone of the ancients. See Iron.

MAGNETO. In full, magneto-electric machine. Machine for producing an electric spark. It is usually employed to ignite the charges in the cylinders of internal combustion engines. The magneto depends upon the principles that when a coil of wire is rotated between the poles of a magnet an electric current passes through the wire, and that if the current in this wire is suddenly broken, a current is induced in a second wire in the neighbourhood. In a modern magneto the two wires, primary and secondary as they are called, are wound on a soft iron core, which increases the induced current, and rotated between the poles of a horseshoe magnet. By a contact breaker, the current is interrupted at regular intervals in the primary wire, inducing a current in the secondary wire, which is connected to a sparking plug where the current sparks or arcs across the small gap between the electrodes. In the inductor type of magneto the armature is stationary, while the magnetic field revolves. See Dynamo; Electricity.

MAGNIFICAT (Lat. doth magnify) First word of the Latin version, and so the title of a canticle or hymn. "My soul doth magnify the Lord," in the Book of Common Prayer. It is the Song of the Blessed Virgin Mary in S. Luke 1, 46-55.

MAGNOLIA. Genus of hardy and half-hardy flowering trees and shrubs of the order Magnoliaceae. Some are natives of subtropical regions of Asia, other species being found in the U.S.A., whence they were introduced in 1688. *Magnolia virginiana* of N. America is the laurel magnolia or heaver tree. Among the two dozen species are varieties which range in height from 2 ft. to 80 ft. The large tulip-shaped flowers are of every shade from white, through pink, to purple, and there are also kinds with yellow flowers. The perfume is exquisite. The hardy kinds prefer a shady spot in a deep, rich, loamy soil.



Magnolia. Flower and leaves

MAGPIE. Genus of birds belonging to the crow family. The plumage of the common magpie is velvet-black, with green and blue reflections, with the exception of the scapulars and underparts, which are white. The tail is long and graduated, and the feet and beak

are black. It was formerly very common in Great Britain, but its numbers have been much reduced by the persecution of game-keepers. It is a very animated bird, and feeds mainly on worms, snails, and insects. The nest of the magpie is a very large structure of sticks and mud, domed above, with a hole at the side for entrance. See Crow; Jay.

MAGPIE MOTH (*Ab-raxas grossulariata*). Species of moth which destroys the leaves of bush fruit-trees. The caterpillars are pale in colour, with black spots, and appear in early summer. They may be destroyed by the employment of a mixture of lime and soot, after a heavy rain has fallen, when the foliage is wet. A liberal spraying of soap and water through a syringe is a preventive, if not a remedy. The moth is a little over one inch in length, pale buff in colour, with black spots.

MAGYAR. Dominant people of the Hungarian or Magyarian kingdom. Returned in 1910 as 10,050,000, or one-half the population of the old Hungarian kingdom, they form the bulk of the population of the new state, estimated at 7,600,000. Pron. Maw-jyar.

Magyar music, as it is called, is the national music of Hungary. It derives its most striking characteristics from Oriental and Gypsy sources. The chief Magyar dance forms include the Csárdás, with slow and quick movements alternated; the Kör-tánc or society dance; and the Kanasztánc, a dance of the peasantry.

The term *Magyaria* is used to designate the heart of the former Hungarian kingdom, where the bulk of the people were Magyars. Since the dismemberment of Austria-Hungary most of *Magyaria* is contained within the new Hungary. See Hungary.

MAHÁBALIPUR. Temple site of India, in Madras, commonly known as the Seven Pagodas. It is on the coast about 30 m. S. of Madras City. According to tradition, five of these reputed temples are beneath the waves; the two on the shore are Vishnu and Saiva shrines. They date presumably from the 7th century, and are said to be due to Mahābali, a ruler who had them made for the accommodation of the gods who visited him.

MAHAFFY, SIR JOHN PENTLAND (1839-1919). Irish scholar. Born in Switzerland, Feb. 26, 1839, he became a fellow of Trinity College, Dublin, in 1864. He filled a succession of offices in the university, and from 1869-1900 he was professor of ancient history. Senior fellow in 1899, he was made vice-provost in 1913 and provost in 1914. In 1864 he was ordained. Mahaffy, who was knighted in 1918, was president of the Royal Irish Academy. He was also a cricketer, a marksman, and a musician. His writings are chiefly, but not solely, on ancient history, as *Greek Life and Thought*, 1887. He died April 30, 1919.

MAHAN, ALFRED THAYER (1840-1914). American naval historian. He was born at West Point, New York, graduated at the naval academy, and served as a lieutenant in the navy. He was engaged in blockade duty during the Civil War. In 1883 he was appointed professor of naval history at the Naval Academy, Annapolis, Md. He died at New York, N. Y., Jan. 10, 1914.

MAGDEBURG, GERMANY. View across the Elbe from the citadel, looking towards the twin-towered cathedral.



Magpie. Specimen of the common British magpie

active service in 1896. He died Dec. 1, 1914.

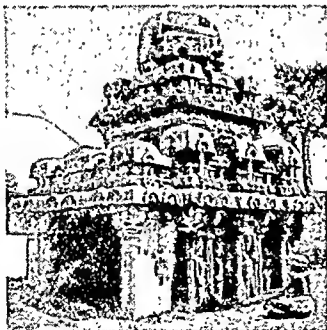
In 1890 he published *The Influence of Sea Power on History, 1660-1783*, which made him famous, and followed this with *The Influence of Sea Power upon the French Revolution and Empire, 1892*. In 1897 appeared his biographical study, *Nelson, the Embodiment of the Sea Power of Great Britain*; and in 1911 his *Naval Strategy*.

MAHARAJA. Indian title meaning great king. It is applied to certain powerful rajahs and other persons of high rank. The high priests of the Vallabhacharis, a Hindu sect, call themselves maharajas. The feminine is maharani. See Raja.

MAHATMA. In theosophy, name applied to certain men of saintly lives supposed to have acquired supernatural powers through purity of soul and devotion to mankind. One of the powers ascribed to them was that of projecting their astral bodies through space.

MAHDI. Name of the Messiah expected by the Mohammedans. The mahdi must be a descendant of the prophet; he must be proclaimed mahdi against his will at Mecca at a time when there is strife after the death of a caliph; and his advent shall coincide with that of Anti-Christ, after whom Jesus will descend in Syria and the reign of righteousness be inaugurated. There have been many pretenders to the title from the time of the first generation after Mahomet. The most notable of recent mahdis is Mahomed Ahmed (1848-85). During 1880-84 he proclaimed a mission to free Egypt from foreign yoke, and acquired an ascendancy over the Sudanese tribes. This led to Gordon's expedition to Khartoum in 1884, the year in which the mahdi died. See Gordon, C. G.

MAH-JONGG. Chinese game played with dominoes made of ivory and bamboo. There are usually four players at a table, each acting for himself. The dominoes, which number 136, are arranged in three suits, and there are four sets of each. One consists of three honours, red, white, and green; another represents the four winds, north, south, east, and west. The third consists of three sets of nine dominoes named characters, circles, and bamboos. The object of each player is to obtain the highest scoring hand, which is called mah-jongg.



Mahabalipur India. Monolithic Rath or temple carved in granite

belonging properly to *Swietenia mahagoni*. This is distinguished as Spanish mahogany, a tall tree of the order *Meliaceae*, native of Central America and the W. Indies. It has a massive buttressed trunk, glossy leaves divided into paired oval leaflets, and small reddish-yellow flowers in clusters. The timber is used for furniture, cabinet-making, etc. Naturally, the wood is brownish-pink in colour, the red of new furniture being attained by staining.



Alfred T. Mahan, American sailor

MAHOGANY. Term loosely applied to the timber of various trees, but belonging properly to *Swietenia mahagoni*. This is distinguished as Spanish mahogany, a tall tree of the order *Meliaceae*, native of Central America and the W. Indies. It has a massive buttressed trunk, glossy leaves divided into paired oval leaflets, and small reddish-yellow flowers in clusters. The timber is used for furniture, cabinet-making, etc. Naturally, the wood is brownish-pink in colour, the red of new furniture being attained by staining. After many years in the manufactured state it acquires a fine brown tint. Among the spurious mahoganies are *Ratonia apetala* (bastard mahogany) of tropical America; *Khaya*

senegalensis (African or Senegal M.) of W. Africa; *Soyimida febrifuga* (E. Indian M. or Redwood) of S. India; and *Cedrela toona* (Indian M. and cedarwood), also of S. India.

MAHOMEDAN ART AND ARCHITECTURE. Term embracing the whole material outcome of the Islamic civilization. In each of the great regions which passed under Mahomedan domination local forms were utilised, but all bear the unifying impress due to the solidarity of Islam. There are five main schools of art: Syro-Egyptian, Moorish, Persian, Ottoman, and Indian.

The decorative art of Islam rests ultimately upon its architectural achievement. The history of mosque architecture is traceable from its beginnings in those of Amr and Ibn Tulun at Cairo, and those at Damascus, Kairwan, and Cordova, to the constructions of Kaik Bey at Cairo, and the greater mosques of Ispahan and Samarkand, Konia and Brusa, Istanbul, and Mogul India. Among the distinctive elements of Moslem architecture are the arching, which may be pointed, stilted and round, horseshoe, scalloped, or clover-leafed; slender shafting, suggestive of the ancestral tent-posts; open trelliswork, cupolas, and stalactite pendants.

Stone decoration relied mostly upon the treatment of flat surfaces with polygonal and arabesque design, or inscriptions of Koranic texts. Stone filigree work reached its zenith in India. When secular buildings ignored the Koranic prohibition of images, as in the lion-fountain of the Alhambra, the result lacked the spontaneity of untrammelled sculpture. Where stone was lacking stucco lent itself readily to Moslem decoration, which reached remarkable levels in the Alcazar and the Alhambra. Marble mosaic, borrowed from Byzantine craftsmen, was similarly moslemised.

The 12th century witnessed an astonishing outburst of decorative art as applied to metal. Both in Mesopotamia and in Persia methods of inlaying metal on metal, at first silver on bronze or iron, were skillfully practised. Damascus was especially addicted to gold inlay. Through the craftsmen attracted to Venice, Saracenic metalwork exerted definite influences upon the W. Simultaneous movements eastward led to such Indian developments as *Biddery waro* (q.v.).

Nomadic art was at its best in the departments of weaving and leatherwork. Plain tapestry weaving became associated with knotwork in wool and silk. The art became specifically Moslem when utilised for the coverings of mosque floors. The individual "prayer-rug," with its mihrab-niche, is well known. The genetic relationship of Mahomedan pottery to weaving is best seen in the glazed tiles which became another of Islam's contributions to mural decoration. They reached their zenith in the tiled walls of Istanbul, where they simulated silk carpet designs with remarkable fidelity. Saracenic pottery was also important for ritual and domestic utensils, in part because it gave to W. Christendom its medieval and Renaissance ceramic industries. Of equal interest are enamelled glass, and carved rock-crystal vessels from Egypt. In the domain of painting, beautiful work was achieved in the illumination of copies of the Koran for the greater mosques. See Agra; Alcazar; Alhambra; Arabesque; Byzantine Art; Cairo; Damascening; Damascus; Kum; consult also *A History of Fine Art in India and Ceylon*, V. A. Smith, 1911; *Moslem Architecture*, G. T. Rivoira, Eng. trans. G. M. Rushforth, 1918.

MAHOMEDANISM. Religion founded by Mahomet. When Mahomet arrived at Medina in 622 he hoped to win over the Jewish colonists of the neighbourhood, but these expectations were disappointed, with the result that the whole practice of Islam is based at once on imitation of and antipathy to the

Jews Hebrew ritual consisted of prayers, alms, fasting, the Sabbath, and pilgrimage. All these Mahomet took over with some modifications. The five daily prayers are not enjoined in the Korán, but they were universally observed almost from the first. In contrast to the Jewish trumpets and the Christian bell, the Moslems were called to prayer by the voice of the muezzin (crier).

In place of the Jewish fast of the day of atonement, the Moslems were enjoined to fast during the ninth month of the year (Ramadán), from sunrise to sunset. This fast is strictly observed, drinking water and even smoking being forbidden. For the Sabbath Mahomet substituted Friday, on which day there is a sermon in all the principal mosques at the midday service, in addition to the usual prayers. Otherwise the day does not differ from another, and work goes on as usual. The great pilgrimage to Mecca takes place in the twelfth month of the year, but, as was the case with the Passover among the Jews, may, if necessary, be made at another time. Moslems prevented from making the pilgrimage are expected to send a substitute or give alms, and on the same day on which the sacrifices are offered near Mecca sheep are slaughtered in all the large towns of the Moslem world.

Mahomet was the first ruler who united the warring clans of Arabia into one nation. Within ten years of his death the Arabs had subdued Persia, Syria, and Egypt. Within a hundred years their empire extended from Spain to China.

Under the Ommiad (Ammiad or Umoiyad) dynasty, whose capital was Damascus, 660-750, Mahomedanism decayed as a religion but grew as a power, until it had spread from the Atlantic to the borders of China. The court, however, with the single exception of Omar II, was quite irreligious. Its members were surrounded by Christians, drank wine, and otherwise made themselves abhorred by the pious, until they were swept away by the Abbassides, 750-1258. By the change of dynasty Mahomedanism became heir to the learning and speculation, as well as to the fanaticism, of Persia.

The number of Mahomedans in the world is estimated at 210,000,000, of whom 160,000,000 are in Asia. Over 60,000,000 of these are natives of India. See Arabia; Caliphate; Koran, etc.

MAHOMET (c. 570-632). Prophet of Islám and founder of the religion that bears his name. Born in Mecca about 570, he belonged to a family of position there. Wealth came to him through his marriage with a rich widow, and he was evidently a person of some importance. When he was forty years old he believed he had received by revelation a mission to reform the world. He gathered a few adherents and began to attack the idolatrous religion of the Arabs. This made him unpopular, and in 622 he fled to Medina. There he was made welcome, and from that time his doctrines made headway. His followers increased in number and in power, and in 630 he returned to Mecca as a conqueror, and was recognized as prophet by all Arabia. He died in 632.

The secret of Mahomet's success lay in his urbanity. He became all things to all men, and combated them with their own weapons. He never refused an invitation, never departed from the severe simplicity of the Arab life, and shared in all the dangers and hardships of his followers. His name is also spelled Mohammed.

The best source for the life of Mahomet would be the Korán, composed by himself, were not its language and allusions so cryptic as to be unintelligible without the aid of the later biographies. Next to the Korán comes the contemporary poetry of his adherents, especially his court poet, Hassan ibn Thabit, and one of his enemies.

MAIDA VALE. London thoroughfare and district. The thoroughfare is that part of Edgware Road which runs from the Regent's Canal to Kilburn. The east side is in the bor of Marylebone, the west in that of Paddington.



Maiden. Blade of the Scottish instrument of execution

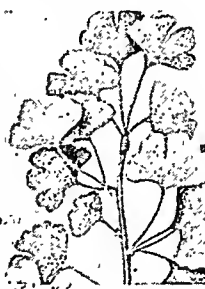
The name commemorates Maida, a town in Italy where, on July 3, 1806, the British under Sir John Stuart defeated the French.

MAIDEN. Instrument of execution formerly used in Scotland, and occasionally in England. In design not unlike the guillotine, it was first used in 1561. The specimen of the blade which is here illustrated is preserved in the museum of the Society of Antiquaries, situated in Edinburgh. See Guillotine.

MAIDEN CASTLE. Prehistoric earthwork near Dorchester, Dorset. Begun in neolithic times, the whole hill, 432 ft. high, and embracing 160 acres, was enclosed in the Bronze Age. There are three ramparts on the N. and four on the S. The entrance is guarded by trenches for enfilade defence.

MAIDENHAIR FERN (*Adiantum*). Herb of the order Polypodiaceae. Natives of tropical and temperate climates, they have delicate, much divided fronds. *Adiantum capillus-veneris*, the common maidenhair fern, is a native of Britain, but now rare, and *A. pedatum* is common in the U.S.A.

MAIDENHAIR TREE (*Ginkgo biloba*). Tall tree of the natural order Ginkgoaceae. A native of China, it has broad, fan-shaped leaves, cloven at the summit and with notched margins. The male flowers, borne on a separate tree from that which bears the female flowers and fruit, form a sort of catkin. The seed is in a hard shell enclosed in a fleshy, edible wrap; the fruit is rather like a plum.



Maidenhair Tree. Stem of foliage

MAIDENHEAD. Market town and borough of Berkshire. It stands on the right bank of the Thames, 24 m. from London, on the G.W. Rly. The industries include brewing, but the town is chiefly known as a boating centre. The stone bridge across the Thames dates from 1772. Market day, Wed. Pop. 16,741.

MAID OF HONOUR. Unmarried lady in personal attendance on a queen. In the British royal household the maids of honour are in the lord chamberlain's department, and are in waiting two or three weeks at a time. Usually daughters or granddaughters of peers, and styled honourable, they take precedence between daughters of barons and wives of knights of the garter. A kind of cheese-cake popular at Richmond, Surrey, is known as a maid of honour. See Royal Household.

MAIDSTONE. Borough and market town of Kent, also the county town. It stands on the Medway, 41 m. from London, and is served by the Southern Rly. All Saints' Church is a fine Perpendicular building. Adjoining are the ruins of the 14th century college. The old palace of the archbishops still stands, and the 16th century Chillington manor house contains a museum and art gallery. There is an old tithe barn. Maidstone is in the middle of the hop fields. It has manufactures of

agricultural implements, paper, cement, rope, beer, toffee, etc., also maling and engineering works. In 1921 the town adopted Montauban. In 1928 the town council bought the Mote, an estate of 500 acres, from Viscount Bearsted. Market days, Tues and Thurs. Pop 40,710.

MAIMING. Term used in English law for the deprivation of a part of a person's body necessary for fighting.

The word is more used in connexion with injuries to animals. Under the Malicious Damage Act of 1861 it is a felony to maim any cattle, horses, or other domestic animal. There have been some remarkable epidemics of cattle and horse maiming in the United Kingdom, the most notorious being the Great Wyrley outrages in Staffordshire.

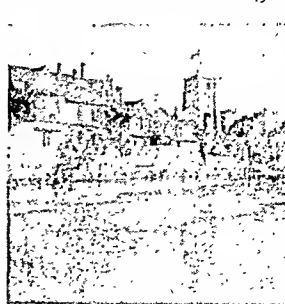
MAIN. River of Germany, a tributary of the Rhine. It rises in the Fichtelgebirge on the edge of the Bohemian plateau, and flows generally W. to join the Rhine at Mainz, after a course of 300 m. The Ludwig Canal joins its tributary the Regnitz to the Altmühl, a Danube tributary, to provide boat communication between Rotterdam, Mainz, Ratisbon, and Vienna. River navigation extends for 240 m. from Mainz. Important towns in the basin of the Main are Frankfurt, Mainz, Nuremberg, Würzburg, and Asebauffenburg. In the Middle Ages the lower valley formed part of an historic route N.E. from Mainz to Cassel.

MAINE. State of U.S.A. With an area of 33,040 sq. m., it is situated in the extreme N.E. of the country, and borders on Canada. The coastline is much indented and there are many good harbours. Augusta is the capital.

The state is mountainous in the N. It is studded with many lakes and drained by numerous rivers; their waters are utilised for providing power. In the N. much land is covered with forests, lumbering being a valuable industry. The soil produces oats, potatoes, and hay. Granite is worked, and the fisheries are considerable. It has 2,750 m. of railway line, which are connected with the Canadian system. The state university is at Orono. Pop. 795,000.

The Maine is the name of a U.S. battleship blown up in Havana harbour, Feb. 15, 1898, with a loss of 250 officers and men. The incident led to war between the U.S.A. and Spain. See Spanish-American War.

MAINTENANCE. Word used in English law. A maintenance order is the order which a wife can obtain from a police court compelling her husband to support her and her children. The amount of the order will vary with the husband's income, and any income earned by the wife will also be taken into account. The usual practice is to order the husband to pay such an amount as will give the wife for herself a third of their joint income. The maximum amount that can be ordered for the wife is £2 a week. If there are any children of the marriage the husband may be ordered to pay an additional sum not exceeding 10s. a week in respect of each child under 16.



Maidstone. Church of All Saints and old houses from the Medway

An order obtained by a wife legally separated from her husband, compelling him to give her financial aid, is also called maintenance. See Affiliation; Marriage; Separation.

MAINTENON, FRANÇOISE D'AUBIGNÉ, MARQUISE DE (1635-1719). Second wife of Louis XIV. Born Nov. 27, 1635, she married Scarron in 1651 and was thus introduced to intellectual circles. Scarron died in 1660, and in 1669 she was engaged by Madame de Montespan to educate the children she had borne to Louis XIV. She soon attracted the royal attention, and in 1678 Louis created her a marquise. Her intelligence established her high in Louis' favour. Mme. de Montespan was discarded in 1680, and the new mistress ruled supreme. In 1685 the king married her, and henceforth she exercised almost unlimited power over him. She died April 15, 1719.



Mme. de Maintenon, wife of Louis XIV. After P. Mignard

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MAINZ OR MAYENCE. City of Germany, in the republic of Hesse. It lies on the left bank of the Rhine, opposite its confluence with the Main, 22 m. W.S.W. of Frankfurt. A busy river port and important rly. junction, it trades in wine, grain, and timber, and produces leather goods, furniture, and chemicals. The cathedral is one of the noblest Romanesque churches of Germany; it has extensive Gothic additions. Of various dates, some parts perhaps belonging to the 10th century, it has six towers and a fine series of tombs of the electors, mostly of the 16th century. The former palace of the electors, a Renaissance building, chiefly of the 17th century, contains a museum of Roman and German antiquities, and a collection illustrating the work of Gutenberg. In the citadel, which occupies the site of the Roman camp, stands the Eigelstein, a tower said to have been built by the Romans as a memorial to Drusus. Pop. 108,537.



Mainz. House in which Gutenberg is said to have set up his press

The bishopric of Mainz was made an archbishopric under S. Boniface in 747. His successors were primates of Germany, and from 1356 to 1802 were electors. In 1803 the archbishopric was abolished; its lands were secularised and divided among various princes. The city was assigned to Hesse in 1814.

Mainz was the name of a German light cruiser. She was sunk by a torpedo from the British destroyer Laertes during the engagement in the Heligoland Bight, Aug. 28, 1914.

MAISONNEUVE, PAUL DE CHOMEDY, SEUR DE (d. 1676). French administrator. He was born in Champagne, entered the French army, and after serving in Holland, in 1641 led a religious expedition to Quebec. On May 14, 1642, he founded the town of Ville-Marie de Montreal, of which he was governor until 1665. Maisonneuve is now the name of a suburb of Montreal.

MAITLAND. Name of two towns in New South Wales. East Maitland is on the right bank of the Hunter river, 120 m. by rly. N. of Sydney, and is a junction on the main line to Queensland. Pop. 9,000.

West Maitland is 2 m. from East Maitland, and is connected with it by tram and rail. It has brick and pottery works. Pop. 7,770.

MAIZE (*Zea mays*) Stout annual grass, probably of Mexican origin. As a cultivated plant it is found under the names of Indian corn, Turkey wheat, Guinea wheat, or mealies in most of the warmer countries of the world. It grows to a height of 5 ft. or 6 ft., and has long, broad, strap-shaped alternate leaves with sheathing bases. The stem is terminated by a many-branched plume of male two-flowered spikelets. The female spikes, with single-flowered spikelets, are produced from the leaf-sheaths, and after pollination develop into the large, thick "cobs," with numerous seeds packed round a woody core. Maize is not grown extensively in Britain, because it cannot be germinated as a rule before June, and the climate prevents the ripening of the grain, and necessitates its use as fodder. As compared with wheat, the grain contains somewhat less albuminous matter, and is slightly richer in carbohydrates. It is, next to rice, the most important of all the cereal foods. In India the roasted cobs are eaten.



Maize. Left, male flower and leaves; right, cob

MAJESTIC. British battleship torpedoed by the German submarine U 23 off Cape Helles, Gallipoli, May 27, 1915. She was 412 ft. long, 75 ft. in beam, and displaced 14,900 tons. Majestic is also the name of a White Star liner of 56,000 tons, formerly the N. German liner Bismarck. Her length is 915 ft., average speed 25 knots.

MAJOLICA. Name given to two kinds of ware. One is an Italian enamelled ware covered with an opaque tin-enamel glaze which formed the surface for a painted design, and the other is a ware covered with a semi-fluid paste of white or cream colour on which designs were scratched with a point.

MAJOR. In the British army, an officer next in rank above a captain and below a lieutenant-colonel. The equivalent rank in the navy is a lieutenant of eight years' seniority, and in the R.A.F. a squadron leader. His badge of rank is a crown.



Major. Badge of rank on sleeve

MAJOR (Ital. maggiore, greater). Term in music referring to intervals of seconds, thirds, sixths, and sevenths, reckoned in the ordinary scale of their lower notes. Thus:

are major intervals because the notes D, E, A, and B occur in the scale of their lower note (C). The fourth and fifth from the key-note are termed perfect instead of major.

MAJORCA (Sp. Mallorca). Island in the Mediterranean Sea, belonging to Spain. Situated 115 m. S.S.E. of Barcelona, it is the largest of the Balearic Isles, with an area of 1,325 sq. m.

The coast is indented with many bays and harbours and the surface is mountainous. The soil is fertile and the climate usually temperate. The island produces wine, oil, cereals, figs, oranges, and other fruits in

abundance. There are many mineral and saline springs. Stalactite caves abound. The most typical industry is the making of glazed pottery, especially majolica. Palma is the capital. The island was peopled by Moors when conquered by Jaime of Aragon, towards the close of the 13th century, and in 1343 it was taken over by Aragon. Pop. 270,197.

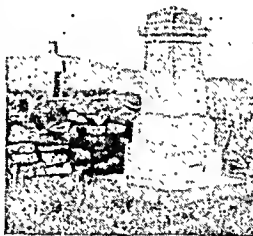
MAJOR-GENERAL. Title of rank in the British army. He is an officer of the lowest grade of general officer, ranking above a colonel-commandant (formerly brigadier-general) and below a lieutenant-general. The equivalent rank in the navy is rear-admiral, and in the R.A.F. air vice-marshal. The distinguishing badge is a crossed sword and baton, with a star above, worn on the shoulder straps. During the Great War the number of major-generals was greatly increased, the rank being held not only by divisional commanders, but by general officers on the staff and those appointed for special duties. See General.



Major-General, badge on shoulder strap

MAJORIAN. Roman emperor of the West, A.D. 457-461, whose full name was Julius Valerius Majorianus. He was a sound ruler, being the author of measures for the relief of his subjects from the taxation by which they were sorely oppressed. He also passed laws for the protection of ancient monuments, then much used for building material.

MAJUBA HILL. Eminence in Natal, at the N.E. end of the Drakensberg range. Its height is 7,000 feet. During the war between the British and the Boers in 1880-81, Sir G. Colley, in command of the former, reached and occupied the hill on Feb. 27, 1881. Next morning, however, the tired men were attacked by the Boers, who, after some desultory firing got to the summit and drove down the British. Colley was killed and about half his force lost.



Majuba Hill. Monuments to the fallen erected on the battlefield

MALABAR COAST. Name applied to the southern half of the W. coast strip of the Deccan, India. It is in Madras, the S. continuation of the Konkan coast of Bombay.

Malabar, a division of Madras Province, forms the portion of the Malabar coast, N. of Cochin, S.W. of Coorg, and S. of S. Kanara. Rice is the main food grain, other crops including coconuts and rubber. It has one rly., the main line from Madras to Calicut. Area 5,794 sq. m. Pop. 3,098,871.

MALACCA. Detached portion of the Straits Settlements. It extends for 42 m., with a breadth of from 8 to 25 m., along the strait of Malacca, about 110 m. N. of Singapore. It has a pop. of 188,828 and an area of 720 sq. m. Its capital, Malacca (pop. 21,200), is situated on the Malacca river, 120 m. N.W. of Singapore, with which it has rly. connexion. It was captured by the Portuguese in 1511, by the Dutch in 1641, and by the British in 1795. It became a British possession in 1825.

Malacca was formerly an independent country of south-east Asia consisting of a long, narrow strip of land stretching S. from Siam. See Malaya; Straits Settlements.

Malacca Bean (*Semecarpus anacardium*). Alternative name for the evergreen known as marking nut tree (q.v.).

MALACHI. Minor prophet. Generally accepted as the author of the last book of the O.T., it is possible that he was a contemporary of Ezra and Nehemiah. The writer deplors the degeneracy of the priesthood and the general falling-off in religious observance and urges repentance. He deals with the prosperity of the ungodly, and foretells the coming of another Elijah (John the Baptist) to prepare the way for the Messiah.

MALACHITE. In mineralogy, the name given to a basic carbonate of copper. Bright green in colour, it is found in great masses in the Ural Mts., Tirol, France, etc. Malachite, though a source of copper, has long been prized as a gem.

MÁLAGA. Seaport and watering place of Spain. The ancient Malaca, it stands at the mouth of the Guadalmedina river, 65 m. N.E. of Gibraltar. Dominated by a ruined Moorish citadel, and the 13th century castle of Gibralfaro, the old town is crowded, but the modern part is well built, and stretches into the surrounding country, cultivated with vineyards and gardens. The Paseo de la Alameda is one of the finest thoroughfares. The harbour is deep and has several moles. The river is either a dry watercourse or a swollen torrent. Málaga is noted for its wine, which is largely exported. Pop. 159,479.

MALAKAND. Pass in the N.W. Frontier Province, India. It leads from the valley of the Kabul river to that of the Swat. In 1897 the Swats made an attack on the British post here, and this led to the Malakand expedition of that year.

MALARIA (mala aria, bad air). Term for a group of fevers caused in man by parasites which inhabit the red blood corpuscles. Laveran's discoveries in 1880, and Sir Patrick Manson's hypothesis in 1894, suggested a new field of research, and led to the discovery by Sir Ronald Ross, in 1898, that the parasite is transmitted by the bite of an anopheline mosquito. The geographical distribution of malaria is therefore largely governed by the conditions favourable to the development of large numbers of mosquitoes capable of carrying the germ, and, as a general rule, the disease is most prevalent in the region of the equator.

It is now definitely known that malaria is caused by the entry into the blood of man of any of the following parasites: *Plasmodium malariae*, *Plasmodium vivax*, or *Laverania malariae*. The character of the fever is dependent on the type of parasite inhabiting the blood of its victim, each parasite having a life history and periodicity which is responsible for a distinctive type of fever.

Generally an acute attack of fever is preceded by pains in the head, back, and joints, followed by giddiness and sickness. The definite attack may be divided into three stages. The cold stage, followed shortly by violent shivering and chattering of the teeth; the hot stage, wherein the shivering ceases and the patient becomes burning hot and dry; and the sweating stage, characterised by profuse sweating and a sense of relief. In the interval between the attacks the parasites develop in the red blood corpuscles, and Ross

estimates that 150,000,000 parasites are necessary to produce fever. Although numerous drugs have been tried, quinine still holds its own as the one specific remedy.

Briefly, prophylaxis may be carried out by eliminating the breeding-places of mosquitoes and their larvae by draining swamps, gutters, etc.; the use of larvicides; oiling collections of water with paraffin or crude petroleum; screening wells, cisterns, etc., with wire gauze; the introduction of fish, especially "millions," into ponds, etc.; also by the use of mosquito nets as protection against bites.

MALAYA. British battleship. Built in England, at the charge of the Federated Malay States, she was presented by the latter to the British navy in Feb., 1916. Of the Queen Elizabeth class, she was present at the battle of Jutland. See Queen Elizabeth.

MALAYA. Term applied politically to the southern and greater portion of the Malay Peninsula. It consists of three distinct areas, all included in the British Empire. (1) The Straits Settlements is a crown colony consisting of Singapore, Penang, which includes Province Wellesley and Dindings, and Malacca. (See Straits Settlements.)

(2) The Federated Malay States, a British protectorate, includes four states, Negri Sembilan, Pahang, Perak, and Selangor. Their area is 27,500 sq. m., Pahang, with 14,000 sq. m., being the largest. The government is in the hands of a high commissioner, who is assisted by a federal council. Pop. 1,324,900.

(3) The five states of Johore, Kedah, Kelantan, Perlis, and Trengganu. Of these Johore is under a sultan, who accepted British protection by treaty in 1914. The four other states came under British protection in 1909. They had previously been under that of Siam. Of these unfederated Malay States Kedah covers 3,648 sq. m. and has a pop of 340,000. Alor Star, on the Kedah river, is the capital. Perlis has an area of 316 sq. m. and a pop. of 40,100. Kelantan has an area of 5,710 sq. m. and a pop. of 310,000. Kota Bharu is the capital. Trengganu covers 5,500 sq. m. and has a pop. of 153,000. Kuala Trengganu is the capital.

The Malay Peninsula extends from the isthmus of Kra to Singapore. Its length is 700 m. It includes the British possessions in Malaya and part of Siam. Rubber is the main product; a great deal of rice is also grown. The inhabitants are chiefly Malays, who are also found in the islands lying near the peninsula, which are sometimes called the Malay archipelago.

MALDEN. District of Surrey. It is 3 m. from Kingston, and is served by the Southern Ry. About 1½ m. to the N. is New Malden; both have become residential suburbs of

London. The Maldens are in the urban dist. of Malden and Coombe. Pop. 14,503.

MALDIVE ISLANDS. Group of coral islands in the Indian Ocean, administered by Ceylon. They lie S.W. of Cape Comorin and W. of Ceylon and abound in coconut palms. Malé is the chief island. The people are expert sailors. Pop. 70,000.

MALDON. Borough, seaport, and market town of Essex. It stands on the Chelmer where it enters the Blackwater estuary, 44 m. from London, on the L.N.E.R. Among the industries are brewing. The buildings include All Saints' Church, with a triangular tower and hexagonal spire, and a 15th century town hall. Near are the remains of Beleigh Abbey. Market day. Tues. Pop. 6,581.

MALDON. Town of Victoria, Australia. It is about 90 m. N.W. of Melbourne, and is an important road centre in a fertile farming district. Pop. 3,100.

MALE FERN (*Nephrodium filixmas*). Fern of the order Polypodiaceae. A native of the temperate regions of the N. hemisphere, and of India and Africa, it has a solid woody root-stock, formed of the bases of decayed fronds. The lance-shaped fronds may be three or four feet long, the leaflets or pinnae tapering to a point and deeply cut into lobes. The name indicates its robust habit.

MALESHERBES, CHRÉTIEN GUILLAUME DE LAMOIGNON DE (1721-94). French statesman and advocate. Born in Paris, Dec. 6, 1721, he succeeded his father as president of the Cour des Aides in 1750, in which capacity he addressed himself to the abolition of official abuses. In 1771 his condemnation of legal abuses ended in his being banished to his estates. On the trial of Louis* by the Convention, he undertook to defend him. For this he was marked down by the revolutionists, and was guillotined in Paris, April 22, 1794.



Málaga, Spain. The cathedral, begun in 1528, and still unfinished



Malaya. Map of the southern part of the Malay peninsula, including the Straits Settlements, the Federated Malay States, and the British Protectorate

His fearless devotion to duty has become almost proverbial. Pron. Malzayrb.

MALIBRAN, MARIA FÉLICITÉ (1808-36). French opera singer. Born in Paris on March 24, 1808, she was a daughter of the singer Manuel Garcia (q.v.), and made her first appearance in The Barber of Seville, in London 1825. Gifted with powers of acting as well as a fine voice, she was one of the great opera singers of her day. She died Sept. 23, 1836.

MALICE. Term used in English law. It may mean either actual ill-will formed against another in the mind of the person charged with malice; or the doing of some kind of deliberate act so injurious to another that the law will imply evil intent. In libel, the deliberate act of writing causes the law to presume malice; but not so in slander.

Malicious damage is a legal term meaning damage done to property wilfully and purposely, as distinct from an act done in ignorance or by accident.

Malicious prosecution is a term used in English law for the preferring of a criminal prosecution, or the presentation of a bankrupt petition, maliciously and without reasonable cause. See Libel; Slander.

MALINES OR **MECHLIN** (Flemish, Meechelen). Town of Belgium. It is 13 m. by rly. N.N.E. of Brussels, on the river Dyle, and is a busy rly junction with several manufactures. Formerly it was famous for its lace. It is best known as the ecclesiastical capital, the archbishop being the primate of the Roman Catholic Church in Belgium.

The cathedral of S. Rombold is a noble Gothic building, built about 1300-12, and remodelled during the 14th-16th centuries. The interior contains an altar-piece by Van Dyck. Among the many churches are those of S. John, 15th century, and Notre Dame, founded 1255 and rebuilt in the 16th century, both containing paintings by Rubens. On the Grande Place, with characteristic Flemish gabled houses, stands the Cloth Hall, completed 1326. The town was bombarded during the Great War, and considerable damage was done. Pop. 60,440.

Between 1921 and 1925 conversations took place at Malines between a group of Anglicans, led by Lord Halifax, and some Roman Catholics, including Cardinal Mercier. The question of reunion was discussed, and in 1928 a report, The Conversations at Malines, was published.

MALINGERING. Feigning or deliberately creating sickness, or exaggerating symptoms, for the purpose of exciting compassion, avoiding an irksome duty such as military service, or obtaining compensation or pension.

Malingers may be divided into three groups: first, those in whom there is no organic lesion of any sort, the symptoms being entirely assumed. In the second class, real injuries are deliberately produced, e.g. ulcers of the skin are created by the application of some caustic, as nitric or carbolic acid, and kept open by irritation. In the third class, old-standing diseases or effects of injury are represented as due to a recent cause.

MALL, THE. London thoroughfare. It runs along the N. side of St. James's Park between Charing Cross and the Queen Victoria Memorial in front of Buckingham Palace. It has on the N. the gardens of Carlton House Terrace, the Duke of York's Steps leading to Waterloo Place, and the gardens of Marlborough House, St. James's Palace, and Lancaster House (London Museum).

MALLARD. Common wild duck of Great Britain and the N. hemisphere, from which most domesticated breeds are derived. In

the male the head and neck are glossy green, the breast chestnut, the underparts greyish white, and the wings reflect a metallic violet hue. The beak is greenish yellow, the legs and feet red. The female is smaller and has mottled brown and buff plumage. The mallard breeds in most retired districts in Great Britain that possess water, but great numbers are winter migrants. It feeds upon plants, worms, and insects. See Duck.

MALLARMÉ, STÉPHANE (1842-98). French poet. Born in Paris on March 18, 1842, from 1862-92 he taught English at various schools and colleges in France. From 1862 onwards he published poems, translated E. A. Poe's The Raven, 1875, issued his L'Après-midi d'un Faune in 1876, and collected poems in 1887. The recognized

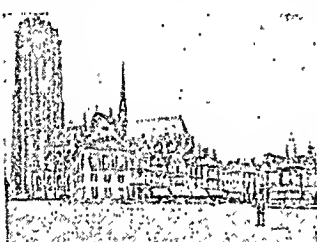
leader of the Symbolists, Mallarmé exercised great influence on the rising generation of French poets. After his retirement from teaching in 1892 he published Vers et Prose, 1893, and Divagations, 1897, and died at Valvins, near Fontainebleau, Sept. 9, 1898. In 1920 his Vers de Circonstance appeared.

MALLEE SCRUB (*Eucalyptus dumosa*). Species of eucalyptus, a native of Australia. The root forms a flat disk about 3 ft.

across and 8 or 10 ins thick. From its underside numerous rootlets descend until they reach moisture, often to a great depth. From the upper side there are many slender stems 14 or 15 ft. long, bearing dense clusters of leaves at the summits. The scrub extends over many miles of the dry plains, but the rootlets yield a supply of drinkable fluid. See illus. below.

MALLING. District in Kent. West Malling, or Town Malling, is 5 m. W. of Maidstone, on the Pilgrims' Way (q.v.), with a station on the Southern Rly. It has ruins of a Benedictine nunnery founded by Bishop Gundulf in 1090. Near is St. Leonard's Tower, also built by Gundulf, about 1070. The village of E. Malling, ½ m. to the E., has an old church and a fruit growing research station. A parish in Sussex, ¾ m. from Lewes, is called S. Malling. Pop. of W. Malling, 4,766

Mallard or wild duck. It breeds freely in captivity
W. S. Berridge, F.Z.S.



Malines. Grande Place, Town Hall and Cathedral of S. Rombold



The Mall, London. View from the Admiralty Arch looking towards Buckingham Palace

MALLOW (*Malva*). Genus of herbs of the order Malvaceae, natives of Europe, temperate Asia, and N. Africa. They have large lobed or divided leaves, and showy rose, purple, or white flowers. The fruit is a ring of

large seeds, each in a leathery shell. The common mallow (*M. sylvestris*) has a stem two or three ft. in height, with lobed leaves and blue-purple flowers. Musk mallow (*M. moschata*) has the leaves divided into slender segments and pale rosy flowers. Marsh mallow (q.v.) belongs to a separate genus.

MALLOW. Urban dist and watering place of co. Cork, Irish Free State. It stands on the Blackwater, 21 m. from Cork, on the G.S. Rlys. There are ruins of a castle once belonging to the Desmonds. The town is the centre for an agricultural district and for salmon fishing. Mallow was the scene of considerable disorder in 1920-21. It was seriously damaged by fire in Sept., 1920, as the result of British reprisals for the shooting of a sergeant. Pop. 4,562

MALMÉDY. Town and district of Belgium, formerly in Rhenish Prussia. The town is 25 m. S. of Aix-la-Chapelle on the river Warthe. It has a population of 5,000, mostly Walloons, chiefly employed in tanneries and paper mills. The dist. covers 318 sq. m. with a pop. of 37,000, 9,500 Walloons. The staple industry is dairy farming. With the adjoining dist. of Eupen (q.v.), Malmédy was given to Prussia in 1814. By the treaty of Versailles 1919, Germany renounced in favour of Belgium all rights and title over the two districts, in which a plebiscite was permitted, and Malmédy was reunited to Belgium. See Belgium

MALMESBURY. Borough and market town of Wiltshire. It stands on the Avon, 17 m. from Swindon on the G.W. Rly. The church of S. Mary and S. Aldhelm was part of the church of the Benedictine abbey. It is mainly of the 12th century, and is noted for its beautiful Norman porch. In 1927 extensive restoration work was begun on the abbey. There is a market cross of the 16th century in the market place. The town has a trade in agricultural produce, brewing, and tanning. Malmesbury grew up round the abbey, and was long known for its manufacture of cloth. Market day, last Wed. in month. Pop. 2,405

MALMESBURY, JAMES HARRIS, 1st EARL OF (1746-1820). British diplomatist. Born at Salisbury, April 21, 1746, he began a long diplomatic career in 1768 at Madrid; was minister at Berlin, 1772-76, at St. Petersburg, 1777-83, and at The Hague, 1783-88. In 1788 he was made a baron and in 1800 an earl. He died Nov. 21, 1820, and was succeeded by his son James Edward.

James, the third earl (1807-89), entered the House of Commons as M.P. for Wilton in 1841, but in the same year he became a peer. Attached to the Tory party, he was foreign minister in the short ministries of 1852 and 1858-59. From 1866 to 1868 he was lord privy seal, as he was from 1874-76. He edited the Diaries and Correspondence of his grandfather, the 1st earl, in 1844, published a volume of the 1st earl's letters in 1870 and his own Memoirs of an Ex-Minister in 1884. He died May 17, 1889, and was succeeded by his nephew Edward James (1842-99). In 1899 James Edward (b. 1872), the latter's son, became the 5th earl. The family seat is Heron Court, Hants, and the earl's eldest son is Viscount FitzHarris.

MALMÖ. Seaport of Sweden. It stands on the Sound, opposite Copenhagen, 16 m. away, with which it is connected by rail and ferry. The town hall dates from 1546 and the church of S. Peter partly from the 14th century.



Mallee Scrub, variety of Eucalyptus

The harbour is capacious and well equipped. Trade is carried on in timber, matches, cement, and agricultural produce. Pop. 118,535.

MALMSEY. Name given to a white or red wine, originally grown in Crete or other Greek islands. It is a sweet, luscious, white

wine of high alcoholic content, and is now chiefly produced in the Azores, Canaries, Madeira, Sicily, and Sardinia.

MALORY, SIR THOMAS (fl. 1469). English romance writer. According to

Bale, he was a Welshman, but Prof. Kittridge showed, in *Who was Sir Thomas Malory?*, that he was a knight of Newbold Revell in Warwickshire. His *Morte d'Arthur* is the most important English prose written before the age of Elizabeth, a compilation and free translation from Robert de Boron, Lucan de Gast, Hélie de Boron, Walter Map, Chretien de Troyes, and others of the old Arthurian romances, less connected form. Finished in 1469, it was first printed by Caxton in 1485.

MALPAS. Parish of Cheshire. It is 13 m. S.E. of Chester, on the L.M.S. Rly. The chief building is the Perpendicular parish church, with beautiful decorations and memorials. Pop. 1,098. There is a Malpas in Cornwall, on the Fal. 2 m. from Truro.

MALPIGHI, MARCELLO (1628-94). Italian anatomist. Born March 10, 1628, near Bologna, he graduated as M.D. and lectured there. He discovered by means of the microscope capillary circulation, blood corpuscles, and important facts relating to the skin, the kidney, and the spleen and he was admittedly the father of microscopic anatomy. He used the microscope also in botanical research, and his *Anatomia Plantarum* was published by the Royal Society. He wrote many treatises, the chief being *On the Lungs*. He died Nov. 30, 1694. Pron. Malpeeghee.

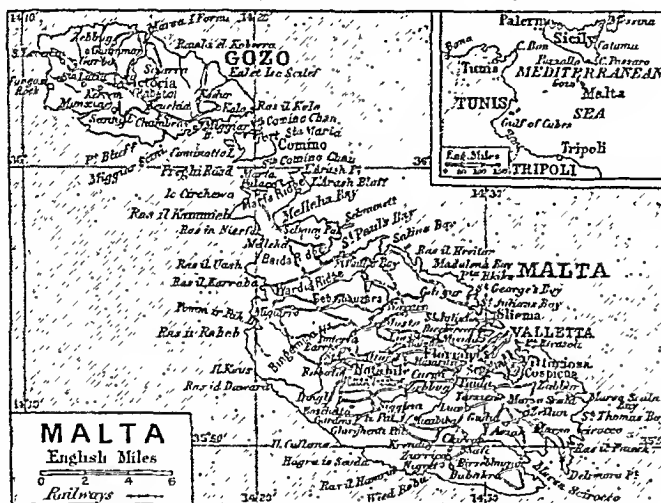
MALPLAQUET, BATTLE OF. Allied victory over the French in the War of the Spanish Succession, Sept. 11, 1709. Malplaquet is a French village in the dept. of Nord. 10 m. S. of Mons. The duke of Marlborough and Prince Eugene were in command of the allied British and imperial troops, and the French army was commanded by Marshal Villars. On either side over 90,000 men were engaged. The battle began with an attack by the Prussians and Austrians. It was resisted stubbornly, but eventually the French were forced back. Eugene and Marlborough at the head of their troops made an irresistible assault on the centre and right, and the Allies began a general advance before which the whole French force retired. The Allies lost 20,000 men and the French 12,000.

MALT. Raw material of the brewer and distiller. It is produced by causing the seed-grains of various cereals, principally barley, to germinate, whereby enzymes or ferments are secreted and developed, converting the albumen of the grains into diastase and the starch into sugar. When the growth has been stopped, the malt is screened to remove the rootlets, which contain about 43 p.c. of digestible carbohydrates and albuminoids. Under the name of malt-culms or malt-combs these are given as a nourishing food to milk-cows and other cattle.

Malting is the name given to the process of converting barley into malt. See Barley; Enzyme; Fermentation.

MALTA. Island of the Mediterranean, belonging to Great Britain. The ancient Melita, it lies about 60 m. S. of Pozzallo on the S. shore of Sicily, and 180 m. from the nearest point on the African coast. It is a naval base and coaling station, being the headquarters of the Mediterranean fleet, and is one of the most important ports of call in the world.

Valletta is the capital and chief port. A rly. connects Valletta with Citta Vecchia or Notabile, the old capital. Area 95 sq. m. Pop. 230,618.



Malta. Map of the islands forming a British dominion in the Mediterranean. Inset, map showing position of the islands in relation to Sicily and Africa.

The surface is a succession of hills and valleys, trending S.W. to N.E. The coastline, except on the S., is much indented. The climate is mild and healthy in winter, but warm in summer. The chief products are wheat, barley, potatoes, onions, and other vegetables, grapes and other fruit, and cotton. The principal pursuit is agriculture, and horses, mules, asses, sheep, and goats are reared. Malta is specially noted for its honey and lace, while the fisheries are important.

After being held successively by the Phoenicians, Greeks, Romans, and Moors, Malta was a dependency of Sicily from 1090 until 1530, when it passed to the Knights of S. John. They ruled it until 1798, when it was taken by Napoleon. From 1798 to 1800 it was blockaded by the British, aided by Maltese, who asked for and were granted the protection of Great Britain by the treaty of Paris in 1814. It then became a British possession. Since 1921 Malta has been self-governing, the neighbouring islands of Gozo and Comino being joined with it for administrative purposes. English and Italian are the official languages.

Normally Malta is ruled by a governor, a ministry, and an elected legislature, which

deal with all local affairs. Certain matters, such as immigration and coinage, are reserved for the Imperial authorities.

In 1930 there was considerable unrest owing to the action of the Pope in threatening with excommunication anyone working or voting for the government party at the election which was arranged to follow the dissolution in April. This action was deemed to be against Lord Strickland, the premier, himself a Roman Catholic. The election was not held; instead, the British government, upholding Lord Strickland, ordered a temporary suspension of the constitution, the existing ministry to remain in office in a consultative capacity.

MALTA FEVER, UNDULANT OR MEDITERRANEAN FEVER. Chronic fever due to infection by a micro-organism, conveyed most often by goats' milk. It is endemic in the coasts and islands of the Mediterranean, in the Punjab, E. and S. Africa, China, and the tropical parts of N. and S. America. Treatment consists

in good nursing and relieving the symptoms. No known drug appears to have any destructive action upon the parasite. The disease is best avoided by refraining from the use of goat's milk, and since 1906, when this was forbidden to the troops, the disease has been virtually stamped out among them.

MALTESE TERRIER. Ancient breed of lap-dog. Superficially it resembles a toy Skye-terrier, but in fact it is not a terrier. In colour it is pure white, occasionally marked with fawn. The face and sides are clothed with long silky hair. The tail is very short, but, carrying an extensive plume of hairs, appears large, and is usually curved over the back. The dog displays remarkable intelligence, alertness, and good temper.

MALTHUS, THOMAS ROBERT (1766-1834). British economist. Born near Dorking, Surrey, Feb. 17, 1766, and educated by private tutors, he became a fellow of Jesus College, Cambridge. His *Essay on Population* was published in 1798 by way of reply to Godwin's *Enquirer*, 1797, and met with fierce criticism. In 1799 Malthus made a tour through Scandinavia and Russia in search of information, and in 1802 visited France. The new edition of his *Essay*, 1803, was virtually re-written, and in it he fully recognized the prudential check on population which in the first edition had only been implied. In 1805 he was appointed professor of political economy at the East India College, Haileybury. He wrote *Political Economy*, 1820, and other works, and died Dec. 23, 1834.

His theory, known as Malthusianism, was that an increase in population, unless preceded or accompanied by a corresponding increase in the means of subsistence, must of necessity lead to misery among the people, or to increased mortality, if not to both evils. This conclusion was based on the assumption that whereas population increased by geometrical progression, the food supply could increase only by arithmetical progression. It proved disconcerting and unpopular because it was misunderstood. See *Population*.

MALTON. Market town and urban dist. of Yorkshire (N.R.). It stands on the Derwent. 21 m. from York, on the L.N.E.R. It consists of Old and New Malton, while across the Derwent is the suburb of Norton, which is in the East Riding. Old Malton church is part of a

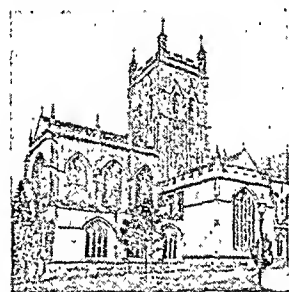


T. R. Malthus, British economist.

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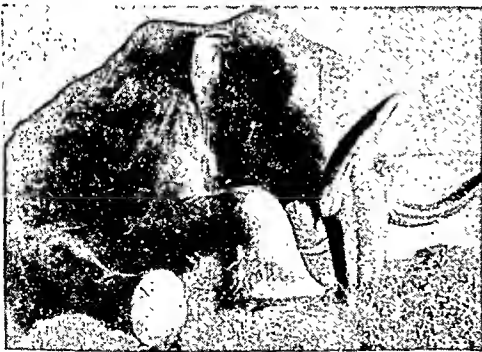
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MAMRE. Perhaps originally the name of an Auerite, who seems to have given it to a plain where Abraham bought the Cave of Machpelah as a burying place for Sarah, and was afterwards buried in it himself. See Abraham; Machpelah.

MAN. In the animal kingdom man belongs to the sub-order Anthropoidea, of the order of Primates. With the anthropoid apes, nearest relatives of the human species, he is plantigrade, walking on the flat of the foot, and like them also his body is adapted to an upright posture. In the main, however, the anthropoids—tree-living, climbing animals—use all four limbs for progression, whereas man, a land-living form, uses only his lower limbs for this purpose, his hands thus being set free to be the servants of his brain. In man the thumb is opposable and adapted for grasping; in the other primates the great toe is an opposable digit, and usually the thumb also. The brain chamber in an average Englishman measures about 90 cubic ins.; that of an average male gorilla about 32 cubic ins. In the pattern of its convolutions the brain of man is more complex. Apart from these physical differences, it is in his power of articulate utterance and his mental attributes that man is especially distinguished from the gorilla, the chimpanzee, and the orang.

In 1912 fossil bones were found at Pittdown in Sussex, which raised a problem similar to that of Pithecanthropus found in Java. In this case only the greater part of a skull, less than half of a lower jaw, and three teeth were found, in a stratum apparently of about the same geological date as that yielding the Javanese remains. The jaw alone might have been assigned to an anthropoid, but the skull is distinctly human. The name *Eoanthropus* was given to this form of being.

Another discovery of an extinct type or species of human is known as Neanderthal man. The type specimen was discovered in 1857 in the Neanderthal cave, near Düsseldorf. Further discoveries have been made of this type in Belgium, France, Spain, Germany, and Croatia, the remains all in cave-strata or

deposits which are attributed to the later half of the Pleistocene period.

A human skull, with some limb bones, discovered in 1921 at the Broken Hill Mine in Rhodesia can serve as progenitor of the living Australoid type. *Homo rhodesiensis* probably inhabited Africa at the time when Neanderthal man was living in Europe.

In November, 1928, fossil human remains were discovered near Peking. Parts of two jaws, adult and child, with parts of brain cases, were found. In Dec., 1929, the larger part of a skull was discovered. Named *Sinanthropus Pekinensis*, this type is referred to the early or mid-Pleistocene period. In its characteristics the skull approaches to the anthropoids, but has peculiarities which have caused it to be regarded as human and near the direct line of modern man's ancestry.

There is evidence to show that men of the modern type were spread over Europe in mid-Pleistocene times. Of the early transitional stages which led on to the modern type, and of the period at which such "missing links" flourished, we have no knowledge. To account for such forms as have been discovered we must postulate a family tree of the kind shown in the illustration. There it will be seen that *Pithecanthropus*, *Eoanthropus*, and Neanderthal man are represented as collateral descendants from a common stock.

ORIGIN OF MAN. Although modern man is easily distinguished from all other animals, there was a time—of comparatively recent date in a geological sense—when it would have been difficult for even the most skilled anatomist to draw a sharp line between human and anthropoid types. In 1894 a thigh bone, skull cap, and three teeth were found in Java in a Pliocene stratum. The thigh bone, human in shape, gives assurance that *Pithecanthropus erectus*, as the type is named, walked in the human manner. The skull cap has anthropoid characters, yet the brain space is large, and the brain must have been rather human than anthropoid in form. The teeth, too, resemble human teeth. Neither human nor ape, it is the representative of a great missing group which we may name "humanoids." See *Anthropology*, and chart p. 98.

MAN. Isle or island in the Irish Sea. Part of the British Empire, it has a government and constitution distinct from that of the United Kingdom, although the imperial parliament exercises certain powers over it. It is 27 m. from the W. coast of England, and about the same from both Scotland and Ireland: with a length of 33 m., it has an area of 221 sq. m. Belonging to it is a small island on the S., the Calf of Man. Pop. 49,270.

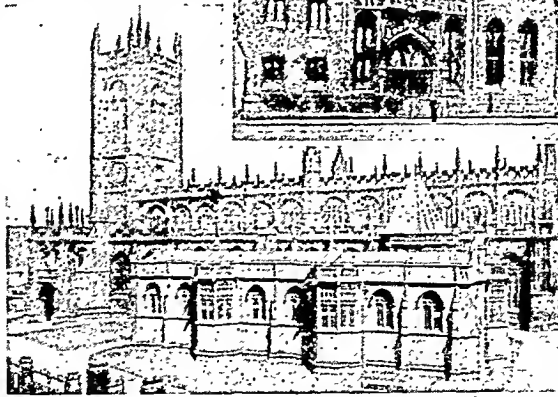
Douglas is the capital and the largest town. Other places are Castletown, the old capital, Peel, and Ramsey, while Port Erin, Port St. Mary, Kirkmichael, and Laxey are small places on the coast. During the Great War there were internment camps at Knoekaloe and Douglas. The island is known for its breed of tailless cats. The coat of arms is three legs, taken, it is said, from a pillar cross at Maughhold in the N. of the island. The highest point

is Snaefell (2,054 ft.). A rly. system of about 50 m. links up the principal towns, and there are electric tramways radiating from Douglas. There is regular steamboat communication with Liverpool, Fleetwood, Barrow, Glasgow, Dublin, Belfast, and other places.

The island is governed by a lieutenant-governor appointed by the crown, a council consisting of the bishop, deemsters, and other high officials, and a House of Keys, an elected body of 24. These two bodies form the court of Tynwald, which is the executive as well as the legislative authority. The island revenue comes mainly from the customs duties, and of it £10,000 a year is paid to the imperial exchequer. There are courts of justice. In 1928 the king presented to the island crown property consisting of Castle Rushen, Peel Castle, and Tynwald Hill. See *Keys*, *House of*.

MANAOS. City and river port of Brazil, the capital of the state of Amazonas. It stands on the Rio Negro, 10 m. from its entry into the Amazon and 1,000 m. from the Atlantic. It has a good harbour, is a regular port of call for liners, and is connected by cable with Pará. Formerly known as Barra do Rio Negro, it is a handsome town, with fine parks and public buildings. Steamer connexion is maintained with Europe and the U.S.A. Rubber, cocoa, nuts, etc., are exported. Pop. 75,704.

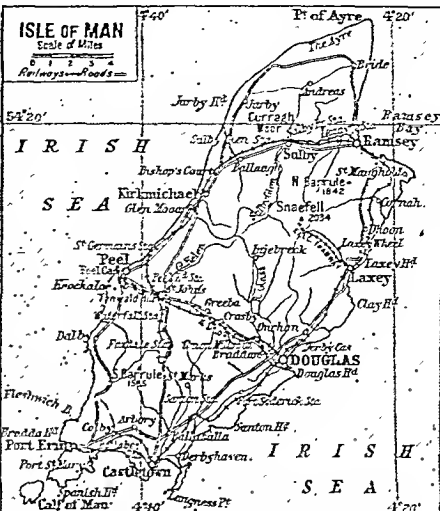
MANASSEH. (1) Elder son of Joseph (Gen. 41), over whom his younger brother Ephraim took precedence. His descendants, a tribe which settled on both sides of the Jordan, were noted as warriors, e.g. Gideon and Jephthah.



Manchester. 1. The Cathedral, dating from the 15th century, with Bishop Fraser's chapel. 2. John Rylands Library. 3. City Hall, opened in 1877

(2) King of Judah, son and successor to Hezekiah. He reigned c. 697-642 B.C., restored idolatry, persecuted the prophets, and was carried captive to Babylon. An apocryphal Prayer of Manasseh occurs in some MSS. of the Septuagint (2 Kings 21: 2 Chron. 33).

MANATEE. Aquatic mammal. It is about 8 ft. in length, and resembles a bulky and heavy seal; but there are no external hind



Isle of Man. Map of the self-governing island in the Irish Sea, part of the British dominions

limbs, the body ending in a broad flattened tail, and the fore limbs forming paddles. The head is blunt, and the great upper lip is divided. The eyes are comparatively small; the skin is thick and wrinkled; and the body is covered with fine hairs. Manatees feed upon aquatic vegetation. See *Dugong*.



MANCHE. Department of France. It takes its name from La Manche, a French name for the English Channel. It is on the channel and includes the Cotentin peninsula. St. Lô is the capital, but

Cherbourg is the most important place. Pop. 431,367

MANCHESTER. City and inland seaport of Lancashire. It stands on the river Irwell, at its confluence with the Irk and Medlock, 187 m. N.W. of London and 31 m. E. of Liverpool. Its suburbs include Ardwick, Gorton, Hulme, Rusholme, and Withington, while Salford, although a distinct municipality, is separated only by the river. It is served by the L.M.S. and the L.N.E. Rylys., the chief stations being Central and Victoria, and by a network of suburban lines, some of which have been electrified. It is also served by the Manchester Ship Canal and the canal system of England. The city covers about 34 sq. m. Pop. 730,000.

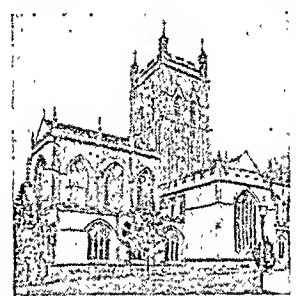
Standing in the midst of a district containing 4,000,000 people, Manchester is a great distributing centre. It is also the headquarters of the cotton manufacture, and its other industries include engineering and

chemical works. It is the newspaper centre for the north of England, and its chief journal, *The Manchester Guardian*, has a world-wide reputation. It is known for its keen interest in politics and economics, being the Mecca of free trade, and has also developed a lively interest

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These include Little Malvern, Malvern Link, Malvern Wells, West Malvern, and North Malvern. Great Malvern, 128 m. from London and 9 m. from Worcester, has a station maintained jointly by the L.M.S. and G.W.R. Its chief building is the beautiful priory church, and there are remains of a refectory. Pop. 17,809.

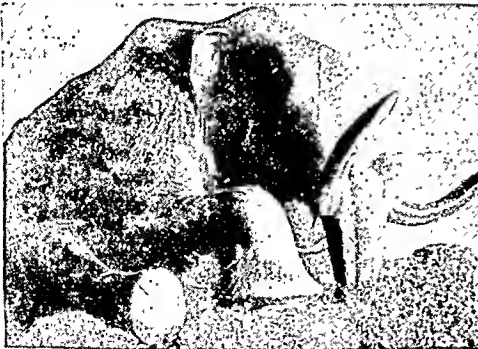
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MAMRE. Perhaps originally the name of an Amorite, who seems to have given it to a plain where Abraham bought the Cave of Machpelah as a burying place for Sarah, and was afterwards buried in it himself. See Abraham; Machpelah.

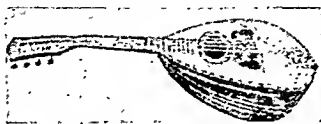
MAN. In the animal kingdom man belongs to the sub-order Anthropoidea, of the order of Primates. With the anthropoid apes, nearest relatives of the human species, he is plantigrade, walking on the flat of the foot, and like them also his body is adapted to an upright posture. In the main, however, the anthropoids—tree-living, climbing animals—use all four limbs for progression, whereas man, a land-living form, uses only his lower limbs for this purpose, his hands thus being set free to be the servants of his brain. In man the thumb is opposable and adapted for grasping; in the other primates the great toe is an opposable digit, and usually the thumb also. The brain chamber in an average Englishman measures about 90 cubic ins.; that of an average male gorilla about 32 cubic ins. In the pattern of its convolutions the brain of man is more complex. Apart from these physical differences, it is in his power of articulate utterance and his mental attributes that man is especially distinguished from the gorilla, the chimpanzee, and the orang.

In 1912 fossil bones were found at Piltdown in Sussex, which raised a problem similar to that of Pithecanthropus found in Java. In this case only the greater part of a skull, less than half of a lower jaw, and three teeth were found, in a stratum apparently of about the same geological date as that yielding the Javanese remains. The jaw alone might have been assigned to an anthropoid, but the skull is distinctly human. The name Eoanthropus was given to this form of being.

Another discovery of an extinct type or species of human is known as Neanderthal man. The type specimen was discovered in 1857 in the Neanderthal cave, near Düsseldorf. Further discoveries have been made of this type in Belgium, France, Spain, Germany, and Croatia, the remains all in cave-strata or

1357 and 1371, is in French, and the earliest English text is a faulty adaptation of it. The author states that he was born at St. Albans, and that he had travelled very widely in the East. The real author, however, appears to have been a Liège professor of medicine, Jehan de Bourgogne. The first part of the Travels is a guide to the Holy Land for the use of pilgrims, plagiarised from a German traveller, William of Boldensele, and from others. The second part, which describes more distant travels in Asia, is taken from Odoric of Pordenone and others.

MANDOLINE. Musical stringed instrument with pear-shaped body and short neck. It is of the lute class, but has pairs of strings tuned in unison. In the larger Milanese mandoline, with five or six pairs of strings, the tuning is similar to that of the lute; but the much commoner Neapolitan mandoline has four pairs of strings, tuned in fifths like the violin. They are played with a plectrum, the special effect being produced by a tremulous movement of the hand, which keeps the strings in continuous vibration.



Mandoline of Neapolitan type, with four pairs of strings

MANDRAKE (*Mandragora vernalis*) on **DEVIL'S APPLES.** Perennial herb of the order Solanaceae. A native of the Mediterranean region, it has a thick, fleshy root and large, oblong, lance-shaped leaves. The flowers are white or bluish, with network veining. The forking of the root often produces a resemblance to the human figure, and this from very early times surrounded the plant with superstitious beliefs. Its possession was said to bring good fortune in all the affairs of life.



Mandrake. Foliage, flowers, and root. Inset, fruit

MANDRILL (*Papio maimon*). Large species of baboon, found on the W. coast of Africa. The muzzle somewhat suggests the snout of a pig, and the nose is a brilliant vermilion, with bright blue and deeply ridged swellings on either side. The skin of the hinder part is shaded with purple, and the great callosities on the buttocks are bright red. The fur is olive brown, with a dark crest on the head and a yellowish beard on the chin. The canine teeth are of great size. In its native state the mandrill goes about in troops, and is said to live largely on insects. See Drill.



Mandrill. Specimen of the brilliantly coloured West African baboon
W. S. Berridge, F.Z.S.

MANET, ÉDOUARD (1832-83). French painter. Born in Paris, Jan. 25 1832, he became in 1863 the leading spirit in the École de Batignolles, which included Degas, Monet, Sisley, and Pissarro. His influence on Monet led to the discovery of Impressionism, and he was one of the first to demonstrate the principles of open-air illumination. In 1863 he exhibited *Déjeuner sur l'Herbe*, and in 1864 *Olympia*, now in the Louvre. Another important picture by him is *Music at the Tuileries*, 1867, in the National Gallery, London. He died in Paris, April 30, 1883.

MANETHO. Egyptian priest and writer. Born at Sebenytus (Semenud), in the Nile delta, he became chief priest and keeper of the sacred records at Heliopolis in the reigns of Ptolemies Soter and Philadelphus (323-247 B.C.). He was the author of *Aegyptiaca*, a history of Egypt from the earliest times to Alexander the Great. Especially valuable is the chronological list of Egyptian kings and dynasties. See Egypt.

MANGABEY (*Cercopithecus*). Group of monkeys found in W. Africa, and usually distinguished by the presence of white or flesh-coloured eyelids. They are nearly related to the maeaque (q.v.), but are of more slender build and have a shorter muzzle. They are long-tailed, and the general colour of most of the species is blackish.

MANGANES. Metallic element, symbol Mn; atomic weight 54.93; atomic number 25; specific gravity 7.13 to 8.8; melting point 1,893° C. Normally, when pure it is hard; greyish white with a reddish tinge; it is brittle, and tarnishes in the atmosphere. The chief ores are pyrolusite, the oxide; rhodonite or manganese spar; wad or bog manganese; triplite, a phosphate with iron and lime; and manganite, a variety of the latter. Several ores are used directly in the preparation of glass; for the manufacture of amber colours; in the colouring of pottery, tiles, and bricks; and, since they yield oxygen freely, for bleaching textile and other materials. Manganese ores are widely distributed. The greatest deposits are those of the Caucasus in Russia, and those of Minas Graes, Brazil.

There are six oxides, the most important being the dioxide or black oxide of manganese, MnO_2 . Of manganese salts, the manganate and permanganate of sodium or potassium form well-known disinfecting liquids. Some manganese alloys are of great importance, especially in the manufacture of steel (e.g. spiegeleisen and ferromanganese), while the metal is also used in the preparation of manganese bronze and brass.

MANGE. Inflammation of the skin in cattle, dogs, cats, and other animals, caused by the burrowing of itch mites in the epidermis. There are two forms: sarcoptic scabies, produced by mites of the genus *Sarcoptes*; and follicular mange due to a mite of another family, inhabiting the follicle from which the hair springs and the sebaceous follicles, particularly around the nose. As the trouble is highly contagious the patient should be isolated and its bed burned.

MANGIN, CHARLES MARIE EMMANUEL (1866-1925). French soldier. Born at Sarrebourg, Meurthe, July 6, 1866, he entered the army in Aug., 1885. He saw active service in Senegal, in the Sudan, 1889-99, and in Morocco. In the first battle of the Marne he led the 5th infantry division. During the Verdun operations he recaptured Douaumont and Vaux. Criticised for his conduct in

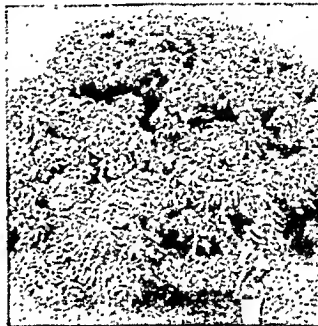
the offensive of April, 1917, he was exonerated after a searching inquiry. On June 11, 1918, he conducted the counter-attack which arrested the German offensive on Compiègne; and from July 18 to Aug. 2 took a leading part in the counter-offensive which forced the Germans to retire on the Marne and the Aisne. On Aug. 20 he drove the enemy to the Oise and the Ailette. Having commanded the French army on the Rhine in 1919, Mangin died May 12, 1925. See Marne.



C. M. E. Mangin, French soldier

MANGO (*Mangifera indica*). Evergreen tree of the order Anacardiaceae. A native of the East Indies, it attains a height of about 60 ft., and its leaves are oblong lance-shaped. The pea-green flowers, streaked with yellow, form dense clusters, and are succeeded by bunches of kidney-shaped fruits, three to six inches in length and nearly half as broad, with tough green skin and yellow pulp, enclosing a fibrous-coated seed. The fruit of the best cultivated kinds is very delicate. It is also made into chutney and preserves.

Mangold Wurzel (Ger. beet-root). Cultivated variety of the sea beet, principally used for feeding stock. See Beet.



Mango. Specimen of the East Indian tree in fruit

MANGOSTEEN (*Garcinia mangostana*). Small evergreen tree of the order Guttiferae. A native of the Moluccas, it has elliptic, leathery leaves and rose-like red flowers with waxy petals, succeeded by fruits the size of an orange with leathery, dark-purple rind, enclosing a white or rosy pulp with an agreeable and delicate flavour. An infusion of the dried rind makes an astringent drink used in dysentery.

Mangotsfield. District of Gloucestershire. It is 5½ m. N.E. of Bristol on the L.M.S. Rly. and in a coal-mining district. Pop. 10,720.

MANGROVE. Genus of trees of the order Rhizophoraceae. Natives of tropical coast swamps, they have thick, leathery leaves and large flowers. The fruits are inversely pear-shaped, and the seed germinates while the fruit is still on the tree. The seedlings grow in this position until they have stems several feet in length, with roots at the lower end and a leaf bud at top, when they drop into the mud and continue their growth. The fruits of the common mangrove are edible, and their fermented juice provides a kind of wine. The bark is used for tanning and dyeing; also as a fever medicine.

The white mangrove, or *Courida*, is a small evergreen tree of the order Myoporaceae.



Mangrove. Trunk and roots of *Rhizophora mangle*

MANHATTAN. Island at the mouth of the Hudson river, U.S.A. It is $13\frac{1}{2}$ m. long, has an extreme breadth of $2\frac{1}{2}$ m., and is bounded N by the Harlem Ship Canal, and E. and S.E. by the Harlem and East rivers. It contains the financial and commercial quarters of New York City, of which the central and N. portions comprise the principal residential district. Several fine bridges connect with Long Island and other parts of New York, one of them being called the Manhattan Bridge, while tunnels and ferries provide communication across the Hudson river. See New York.

MANI, MANES OR MANICHAEUS (215-276) Persian religious reformer. He formulated a system to supplant Zoroastrianism (q.v.), proclaiming himself a messenger of the true God. At the instigation of the priests he was crucified, his body being flayed, stuffed with hay, and nailed to the city gate that was later named after him. Of his writings only fragments remain.

MANIA. Disease of the mind characterised mainly by loss of control. The condition is often associated with periods of depression, and many alienists prefer to speak of manic-depressive insanity rather than to regard mania by itself as a distinct form. The cause is not known, but hereditary influences play a part. Sleeplessness is often an early symptom. Complete recovery may occur, but the condition may become chronic. Ultimately the patient may die either from exhaustion or from an intercurrent disease such as pneumonia or tuberculosis.

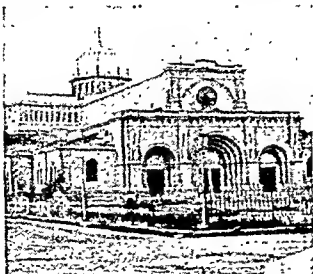
MANICHAEISM. Religious system of W. Asia, founded by Mani (q.v.) in the 3rd century A.D. Mystical and dualistic, and aiming at an explanation of the problem of human existence, it consisted of a fusion of Parsee metaphysics, Buddhist morals, Babylonian mythology, and certain elements of Gnosticism and Christianity. Followers were divided into the elect, bound to an ascetic rule, and the hearers. The elect went direct to paradise, the hearers to a kind of Purgatory, and non-Manichaeans to Satan. The system spread to India, Turkistan, Syria, Palestine and Egypt.

MANIFEST. A document containing a description of the cargo of a ship and particulars of destination. Every vessel carrying goods must have a manifest, to be delivered to the Customs officers at the port of arrival.

MANIFOLD. River of Staffordshire. A tributary of the Dove, which it joins near Ashbourne, it is noted for its sinks or swallets. It disappears down these and comes to the surface again in the grounds of Ilam Hall, 4 m. distant.

MANILA. Capital and chief port of the Philippine Islands. It stands on the W. coast of Luzon Island and is divided by the Pasig river, the old walled city lying to the S. and the modern suburbs to the N. The former contains the 16th century cathedral, archbishop's palace, university, government buildings, convents, hospitals, colleges and schools, and the observatory. The chief manufactures are cigars, sugar, or tobacco, Manila both were produced, and textiles. It is the centre of the Great Indian Archipelago.

The village, occupying a commanding position, was captured by the Americans on July 1, 1916, and the wood was destroyed in 1599; on July 10-12, 1916. Both were destroyed. In the German offensive of March, 1917, 3,000 recovered by the Allies in the autumn, 500.



Manila, capital of the Philippine Islands. The 16th cent. Cathedral

Manila, a remarkable subject to earth-

MANILA BAY. Large inlet of the China Sea in S.W. Luzon, Philippine Islands. It forms one of the finest harbours in the Far East.

A battle was fought here during the Spanish-American War, May 1, 1898, when Commodore Dewey (q.v.) destroyed the Spanish fleet under Admiral Montojo.

MANILA HEMP OR ABACA. Fibre obtained from *Musa textilis*, a plant of the banana family. A native of the Philippine Islands, it is grown in many tropical countries. The outer fibre is very strong and makes excellent ropes. The old ropes, unravelled and picked, are made into Manila paper. The fine inner fibres are worked into dress fabrics by the natives, and in Europe are manufactured into veils, handkerchiefs, and clothing. As a binding medium for builders' plaster, Manila hemp is stronger than animal hair.

MANIPLE (Lat. manipulus). Eucharistic vestment carried on the left wrist of the celebrant. It is a strip of silk or other material about 3 ft. long, sometimes with a fringe, needlework, and gold embroidery, and with ends fastened. It is said to symbolise penance and sorrow.

MANIPUR. Native state of India, in Assam, on the Burmese border. During the Indian Mutiny its raja rendered service to the British. In 1891 the raja was deposed by the hill tribes under the Senaputty (commander-in-chief), and the commissioner and the resident were killed. A punitive expedition was sent out, the Senaputty was hanged, and Chura Chund, a child of the ruling family, declared raja, a British officer being appointed to administer the state until his majority. The state is now administered by a durbar consisting of a president (lent by the Assam government) and six members. The present ruler is a maharaja, who is entitled to a salute of 11 guns. The capital is Manipur or Imphal. Area, 8,456 sq. m. Pop 384,016.

Manitoba. Lake of Canada. In the prov. of Manitoba, it abounds in fish, has a length of 122 m., and an area of 1,820 sq. m.

MANITOBA. Prov. of the Dominion of Canada. Its area is 251,832 sq. m., of which 27,055 are water. It lies between Ontario and Saskatchewan, and is watered by many rivers, including the Red river and the Nelson. There are three great lakes: Winnipeg, Winnipegosis and Manitoba. Winnipeg is the capital. The affairs of the prov. are controlled by a lieutenant-governor and a legislative assembly of 55 members. It is represented by 6 members in the Senate and 17 in the Dominion Parliament at Ottawa.

Manitoba is a grain-producing area, the chief crops being wheat, barley, and oats. Horses, cattle, and pigs are reared, while cheese and butter are made.

There is a certain amount of fishing in the lakes and rivers. Coal is mined, and iron and gold are found. The prov. has 4,293 m. of rly. and all the transcontinental lines cross it. Before its entry into the Dominion, in 1870, Manitoba was known as the Red River settlement, a region inhabited only by fur traders and administered by the Hudson Bay Company until 1869.

The pop., estimated at 639,056 in 1926, is mixed, but the bulk of the inhabitants are of British descent.

The university of Manitoba was founded at Winnipeg in 1877, and has a library, laboratories, etc. In 1898 the government of the prov. made it a grant of 150,000 acres. See Canada.

Manitow. A N. American Indian name for a deity, spirit, or any supernatural being.

MANLIUS, MARCUS. Roman hero. He received the surname of Capitolinus from the fact that in 390 B.C. he frustrated an attempt of the Gauls to take the Capitol. Later, as champion of the plebeians, he incurred the hostility of the patricians, was charged with treason, and thrown from the Tarpeian Rock.

Manly. Suburb of Sydney, New South Wales. It is beautifully situated on a peninsula, and its beach is noted for its surf bathing.

MANN, TOM (b. 1856). British Socialist. Born at Foleshill, Warwickshire, April 15, 1856, he worked on a farm from 9 till 11, as a miner till 14, joined the Amalgamated Society of Engineers in 1881, and from that time became closely associated with the trade union and Socialist movements. He was first secretary of the London Reform Union and of the National Democratic League. A prominent leader in the London dock strike of 1889, he was active in labour propaganda in Australia in 1906. His writings include *A Socialist's View of Religion*; *Russia in 1921*; *Tom Mann's Memoirs*; *What I Saw in China, 1927*; and various pamphlets on socialism.



Tom Mann, British Socialist

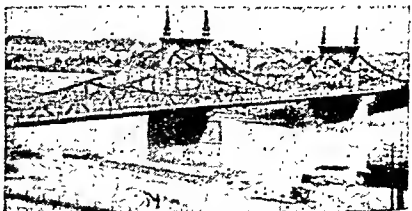
MANNA. Edible coagulated saccharine juice which exudes from various trees or shrubs, including the manna ash, species of tamarisk, and the spiny camel's thorn (*Alhagi maurorum*) of the East. The food of the Israelites in the wilderness (Ex. 16, etc.) was probably the exudation from the *Tamarix mannifera*.

MANNA ASH (*Fraxinus ornus*). Tree of the order Oleaceae, native of S. Europe. It has opposite, toothed, lance-shaped leaflets, and small, greenish-white flowers in large clusters. It is grown in S. Italy for the production of commercial manna, used as a mild laxative. The manna is light, porous, and yellow in colour, and is a valuable food.



Manna. Flower spray of *Alhagi maurorum*

MANNERS, JOHN HARTLEY (1870-1928). American dramatist. Born Aug. 10, 1870, he became an actor in 1898, and continued on the stage for seven years. His plays included *A Queen's Messenger*, 1899; *The Money Moon*, 1912; and *Peg o' My Heart*, 1914. He died in New York, Dec. 19, 1928.



Mannheim, Germany. Bridge over the Neckar and the northern part of the town

MANNHEIM. Town of Germany, in Baden. It is near the junction of the Rhine and Neckar, and the chief centre of trade on the upper Rhine. The manufactures include ironfounding, machinery, glass, earthenware, woollen goods, tobacco, and chemicals. The palace, a huge building containing collections of antiquities and paintings, was built by the elector palatine Charles Philip, and enlarged by his successor, Charles Theodore, who also

built the theatre, 1776-79, but removed the court to Munich in 1778. Schiller's early plays were produced here. There is a Kauflhaus (merchants' hall). Pop. 247,480.

MANNING, HENRY EDWARD (1808-92). English cardinal. Born at Totteridge, July 15, 1808, son of a London merchant, he was educated at Harrow and Balliol College, Oxford.

In 1832 he was made fellow of Merton and was ordained. In 1834 he became rector of Lavington, Sussex, and married Caroline Sargent, sister-in-law of Samuel Wilberforce. In 1851 he went over to the Church of Rome, and, now a widower, studied in Rome and was ordained. In 1857 he founded the London congregation of the Oblates of S. Charles at Bayswater, and on Cardinal Wiseman's death in 1865 he became archbishop of Westminster. He was made a cardinal in 1875, and died Jan. 14, 1892. He is buried in Westminster Cathedral. Manning was a supporter of the temperance movement. He wrote a number of books, including *The Temporal Mission of the Holy Ghost*, 1865, and *The Eternal Priesthood*, 1883. Consult *Lives*, A. W. Hutton, 1892; F. A. Gasquet, 1895; E. S. Purcell, 1896; F. de Pressensé, 1897; and Shane Leslie, 1921.



H. E. Manning,
English cardinal

MANNINGTREE. Town of Essex. It is 8 m from Colchester on the L.N.E.R. There is a trade in wheat and malt, while malting is the chief industry. Pop. 870.

MANNIS, SIR AUGUST FREDERICK (1825-1907). British musical conductor. Born at Stolzenberg, near Stettin, March 12, 1825, he settled in London in 1854 as assistant conductor at the Crystal Palace. Conductor there from 1855-1901, by his encouragement of British composers he exercised a powerful influence on musical progress in England. Having become a naturalised British subject, he was knighted in 1903, and died March 1, 1907.

MANOEL. Name of two kings of Portugal. Manoel I, king from 1495 to 1521, is known as the Fortunate. He sent out Vasco da Gama and other explorers.

Manoel II was born in Lisbon, Nov. 15, 1889, the second son of King Carlos I, his mother being a member of the Orleans family. He succeeded to the throne Feb. 1, 1908, on the murder of his father and elder brother. In 1910, when the republic was established, he fled to England. In 1913 he married Augusta, princess of Hohenzollern-Sigmaringen.

Man-of-War Bird. Popular name for the frigate bird (q.v.), and also given to the albatross.

MANOMETER. Instrument for measuring the pressure or density of a gas. The simplest form is the barometer, which measures atmospheric pressures. Another form is typified in the steam gauge.

MANOR. Name given in England from the 11th century to a territorial unit. Originally, apparently, of the nature of a feudal lordship, it consisted of a lord's demesne and of lands from whose holders he could exact certain fees.

In Norman times the manors varied much in size and in other ways, but certain features appear to have been common to all. Each had a lord and tenants called villeins, who owed him certain duties. There was a poorer class of tenants called cotters, or bondars. A feature of the manor was the manorial courts. These were mainly occupied with civil business concerned with the manorial holdings, and from the records which they kept comes the term copyhold. A steward presided over the

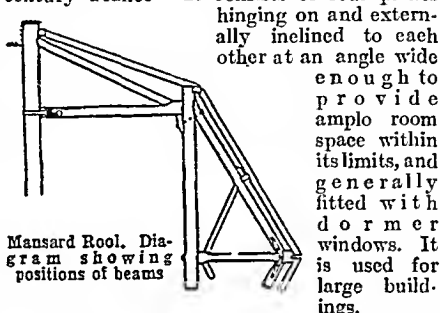
counts, a bailiff managed the lord's own property, and a reeve was chosen by the tenants to look after their interests. Courts, copyholds, and other vestiges of the system survived into the 20th century.

The manor house was the residence of the lord of the manor. The hall was the most important chamber, and in addition to this were the solar, i.e. the lord's private chamber, the kitchen, servery or general service room, larder, and buttery.

MANOR PARK. Residential district of Greater London, Essex. It is between Forest Gate and Ilford, on the L.N.E.R. Here are Manor Park and the City of London cemeteries. There is also a district called Manor Park in the borough of Lewisham.

MANS OR LE MANS. Town of France, capital of the dept. of Sarthe. It lies on the river Sarthe 131 m. by rly. S.W. of Paris, and is an important rly. centre. There is an extensive agricultural trade. The Gothic cathedral of S. Julien contains fine stained glass. The church of Notre Dame de la Couture is noted for its richly ornamented portal. Pop. 72,867.

MANSARD. Type of roof named after François Mansart and much used in 17th century France. It consists of four planes



Mansard Roof. Diagram showing positions of beams

hinging on and externally inclined to each other at an angle wide enough to provide ample room space within its limits, and generally fitted with dormer windows. It is used for large buildings.

MANSART, JULES HARDOUIN (1646-1708). French architect. He was a nephew and pupil of François Mansart (1598-1666), the architect of the château of Blois and other famous buildings. He was employed by Louis XIV to build the palace of Versailles.

MANSE (medieval Lat. mansa, dwelling). General name for the dwelling house of a Scottish minister; also applied to the dwelling house of a minister of any Free Church in England and the U.S.A.

MANSFIELD. Mun. bor. and market town of Nottinghamshire. It stands on the Maun, 13 m. from Nottingham, with stations on the L.M.S. and L.N.E. Rlys. Its grammar school was founded in the 16th century. The centre of a large colliery district, with a technical school for mining students, Mansfield has manufactures of hosiery, boots, machinery, textile fabrics, etc. Market days Mon. and Thurs. Pop. 45,000.

MANSFIELD, KATHERINE (1888-1923). British authoress. Born Oct. 14, 1888, daughter of Sir H. Beauchamp of Wellington, N. Zealand, she published her first book in 1911. In 1913 she married J. Middleton Murry, the critic, and in 1920 made a reputation with *Bliss* and *Other Stories*. She died Jan. 9, 1923. In 1924 appeared *Something Childish*, and in 1928 her *Letters* (2 vols.), edited by her husband.

MANSFIELD, WILLIAM MURRAY, EARL OF (1705-93). British judge. A son of the 5th Lord Stormont, he was born at Seone, near Perth, March 2, 1705, and educated at Westminster and Christ Church, Oxford. Called to the bar in 1730, he entered parliament, was solicitor-general, 1743; attorney-general, 1754; and lord chief justice, 1756-88. Made a baron in 1760 and earl in 1776, he was one of the most eloquent Tory leaders in the House of Lords. His decisions on commercial law were im-

portant, and he gave the famous decision that slaves were free when they landed in England.

Owing to his support of the Roman Catholic relief bill in 1778, his house in Bloomsbury was burnt by the Gordon rioters in 1780. He died March 20, 1793. The title is still held by his descendants. The eldest son is called Lord Seone, and his seat is Seone Palace. See Ken Wood.



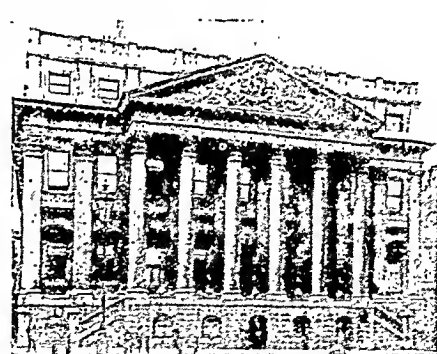
Earl of Mansfield.
English judge
After Reynolds

MANSFIELD, RICHARD (1857-1907). British actor. He was born May 24, 1857, and went in 1882 to the U.S.A., where he appeared successfully as Shylock, Henry V, Brutus, and Cyrano de Bergerac. In England his most successful performances were as Dr. Jekyll and Mr. Hyde at the Lyceum, 1888, and as Richard III at The Globe. He died in New London, Connecticut, Aug. 30, 1907.

MANSFIELD WOODHOUSE. Urban dist. of Nottinghamshire. It is 2 m. from Mansfield, on the L.M.S. Rly. and is in a coal-mining district. Pop. 15,000.

MANSHIP, PAUL (b. 1885). American sculptor. Born at Minnesota, Dec. 25, 1885, he studied art in Philadelphia. There and later in Rome he won medals and prizes, and his work soon became known. His pieces include the Morgan Memorial in the Metropolitan Museum of Art, New York, and *Dancer and Gazelles* in the Luxembourg.

MANSION HOUSE. The official residence of the lord mayor of London. It stands opposite the Bank of England. Designed by George Dance the elder, it was built 1739-53. The material is Portland stone. The principal apartment is the Egyptian Hall, where banquets and other functions are held. The city police court is on the first floor. Extensive reconstruction was planned in 1930. There is also a Mansion House in York.



Mansion House, London. Front façade of the lord mayor's official residence

MANSLAUGHTER. Term used in English law. It means unlawfully to slay another without malice aforethought. Manslaughter may be almost an accident, or very nearly a murder, or any homicide between those two. Manslaughter is a felony; and its maximum punishment is penal servitude for life.

MANSON, SIR PATRICK (1844-1922). British physician. Born Oct. 3, 1844, at Fingask, Aberdeenshire, he graduated at Aberdeen University, specialised in parasitology, and became medical adviser to the colonial office. He suggested that the malarial parasite was carried by the mosquito, and the destruction, following his suggestion, of this insect resulted in freeing large areas from malaria. He published *Goulstonian Lectures*, 1896; and *Tropical Diseases*, 1898. Manson, who was F.R.S., was knighted in 1903, and died on April 9, 1922. See Malaria.

MANSTON. Camp of the R.A.F. in Kent. Between Margate and Ramsgate, it was opened in 1920. There is a school of technical training here. Headquarters of No. 23 group, it can accommodate about 2 000 men.

MANSURAH or **EL MANSURA.** City of Lower Egypt. It is a flourishing commercial town and the centre of a large cotton-growing district. Pop. 63 676

MANTEGNA, ANDREA (1431-1506). Italian painter. Born at Vicenza, he began life as a shepherd, but was adopted by Squarcione, and came under the influence of Donatello. He did notable work for the churches of Padua, Verona, and Mantua. His great series of nine pictures, *The Triumph of Julius Caesar*, now in Hampton Court, was executed 1484-90. In 1488, at the request of the pope, he decorated the Belvedere chapel in the Vatican. He painted the *Madonna della Vittoria* now in the Louvre, and died Sept. 13, 1506. Mantegna was one of the greatest Italian painters, and his influence was immense.



Mantilla as worn by Spanish ladies

Mantilla (Sp. little mantle). Veil of black or white lace. It is the national head dress of Spanish women, and is also worn in Portugal.

MANTIS. Genus of orthopterous (straight-winged) insects, forming the family Mantidae, found in S. Europe and the tropics. Large and powerful, long in the body and armed with forelegs specially adapted for seizing insects, they

vary greatly in form and colour, many of them being curiously like the leaves and flowers among which they lurk. The name praying mantis (*M. religiosa*) has been given to the common European species on account of its habit of resting with its forelegs raised

MANTLING. Term used in heraldry. It includes the robe of estate placed behind a shield of arms, the silken capes and scarves or fancy scrolls pendent from the helm or crest, and by extension the ribbons and knotted cords placed as external decorations. See Heraldry.

MANTRAP. Device for catching trespassers. A common form had a pair of metal jaws secured horizontally, when set, by a catch, which was released when a member connected to it was stepped upon. Their use is now illegal, except in the grounds of dwelling houses between sunset and sunrise.



Mantrap. Specimen in the London Museum, shown closed

MANTUA. City of Italy, capital of the prov. of Mantua. It stands on the Mincio, 100 m. by rly. E. S. E. of Milan. The cathedral, founded in the 12th century, is dedicated to S. Peter and Paul. The

city's finest church is that of S. Andrea. In it Mantegna (q.v.) is buried. The ducal palace has 500 rooms, and mural decorations by Giulio Romano. The 14th century castle of the

Gonzagas, with frescoes by Mantegna, houses the archives. There are museums, an observatory and botanical gardens, and a fine academy of arts and sciences. The industries include the making of paper and dolls. Mantua was the birthplace of Virgil. Pop. 44,200.

MANU (Skt. man). In Hindu mythology, the father of mankind. In the Indian story of the flood his life is said to have been saved by a fish, supposed to be an incarnation of Brahma, which dragged him in a ship on to the Himalayas. Here he formed a woman from various substances, and by her became the progenitor of the human race. According to tradition he was the originator of the Laws of Manu, which, though regarded as uninspired, are considered binding upon Brahmans. The Laws, probably based on an older work, date from about the Christian era.

MANURE. Material added to soil to increase its fertility. It is used to promote the growth of crops by supplying plant food, and by generally improving the soil as a medium for plant growth. The oldest is farmyard manure. As a rule, one ton of farmyard manure contains 9-14 lb. of nitrogen, 4-5 lb. of phosphoric oxide, and 9-15 lb. of potash. If it could be obtained in indefinite quantities farmers would ask for little else, but the amount is strictly limited. For many years, therefore, chemists have been confronted with the necessity of finding substitutes. These include sodium nitrate from Chile and calcium nitrate, made artificially in large quantities in Norway. Ammonium sulphate is nearly as effective as sodium nitrate. Phosphatic and potassic fertilisers are also used. See Fertiliser.

MANUSCRIPT (Lat. manu scriptus, written by hand). In the wider sense, anything written; in the narrower sense, a text written, before the general adoption of printing, on papyrus, parchment, or paper. It is commonly abbreviated to MS., plural MSS. The name chartae is reserved for shorter documents, chiefly of an official or business character, dating from the Middle Ages. The name codex (trunk of a tree), applied to old MSS. generally, was originally given to wooden tablets with a coating of wax, fastened together for writing upon. The science dealing with documents and MSS. in general is called Palaeography. Modern discoveries of ancient MSS. have thrown considerable light on history and made notable addition to literature

Pagination was not adopted till the 15th century, the test of the completeness of a MS. being the number of pages on each side of the string, which was placed in the centre.

MANUTIUS, ALDUS (1450-1515). Latinised name of the Italian scholar-printer, Aldo Manuzio or Manucci. He studied at Rome and Ferrara, and about 1490 founded a press at Venice. Here were printed the editions of the Greek, Latin, and Italian classics known as the Aldine editions (q.v.). The Greek books issued by him were the first of their kind. He died at Venice, Feb. 3, 1515, and was succeeded by his son Paulus (1512-74) and the latter's son Aldus (1547-97).

MANZONI, ALESSANDRO (1785-1873). Italian novelist, dramatist, and poet. Born at Milan, March 7, 1785, he became a leader of the romantic school. His novel of 17th century Milan life under Spanish rule, *I Promessi Sposi* (*The Betrothed*), 1825-27, which stands at the head of Italian fiction, established a world-wide reputation and created a school of Italian historical novelists. He wrote many patriotic lyrics, and died at Milan, May 23, 1873.

MAORI (Polynesian aboriginal). People of Polynesian stock in New Zealand. Numbering (1929) 66,271, divided into about 20 clans, and mostly in N. island, they are tall, muscular, olive-brown, with straight or wavy hair, and oval faces of Caucasoid mien. They preserve traditions of the arrival from Rarotonga, about 1350, of their tribal ancestors in a fleet of six double canoes or single outriggers. The newcomers found an indigenous population, partly Papuanian, being absorbed into earlier Polynesian immigrations. Now nominally Christian, the Maoris are often eager for education. They send four members to the house of representatives.

MAORI WARS. These were British campaigns against the Maoris. When, in 1840, Great



Maori. Left, Maori woman carrying her child on her back. Right, an old chief

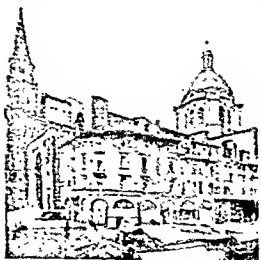
Britain assumed the sovereignty of New Zealand she guaranteed the Maoris possession of their lands and fisheries. Friction, however, between natives and colonists resulted in the first Maori War, 1845-48, which was closed by the definite settlement of the boundaries. The second war, due to racial hatred, was waged in a desultory fashion between 1860-70. Despite their bad leadership and ignorance of European tactics the Maoris fought stubbornly. The war increased in bitterness between 1863-64, and several severe engagements took place. Exhausted and broken-spirited they finally submitted, and by 1871 all trouble had ended

MAP. A representation of the earth or some portion of it on a plane surface. Most of the earliest maps were based on the seaways, and the Mediterranean was earliest mapped with any great degree of accuracy. To the ancient Egyptians and Greeks we owe the earliest efforts at measurements of the earth's surface and the conception of the network of parallels and meridians which are an everyday feature of modern maps. Eratosthenes (284-204 B.C.) was the first to measure the length of a degree, and Ptolemy the first to insist upon a complete network. As soon as the map of the world was known in outline, attention was given to small areas. The first stage in accurate map-making, or cartography, is the precise measurement of latitude and longitude. The next stage is when the positions of inland landmarks are determined in relation to the coasts. The more modern maps include representation of the heights.

Since a map is flat, and the earth's surface is curved, it is not possible to make a map in which there is not some distortion, and various methods are adopted to reduce the inevitable distortion to a minimum. These include Mercator's, a cylindrical projection; conical, perspective, orthographic, equidistant, stereographic, and gnomonic, or central, projection; and contour.

In contour maps level ground is contourless. The closer the contours the steeper the slope. V-shapes on the contours pointing uphill indicate valleys; pointing downhill, ridges

MAPLE (*Acer*). Genus of trees of the order Aceraceae. Natives of Europe, Asia, and N. America, they have opposite, undivided



Mantua. Vegetable market and the tower and dome of S. Andrea

city's finest church is that of S. Andrea. In it Mantegna (q.v.) is buried. The ducal palace has 500 rooms, and mural decorations by Giulio Romano. The 14th century castle of the

leaves and greenish or red flowers, succeeded by a pair of conspicuous "keys," each consisting of a seed and a wing. They produce useful timber, and the sap is rich in sugar. Several of the American species are tapped for the sap, from which maple sugar is made. The species chiefly yielding sugar are *A. saccharinum* and *A. rubrum*.

MAPLE, SIR JOHN BLUNDELL (1845-1903). British man of business. He was born March 1, 1845. His father kept a furniture shop in London. His son joined him, and built up the business until Maple's, in Tottenham Court Road, became a household word for furniture and kindred goods. Conservative M.P. for Dulwich in 1887, Maple was knighted in 1892, made a baronet in 1897, and died, Nov. 24, 1903. He rebuilt University College Hospital, London.

MAQUI (*Aristotelia macqui*). Evergreen shrub of the order Tiliaceae. A native of Chile, it has oblong, toothed leaves and small greenish flowers, followed by small acid berries from which is made a wine used as a cure for malignant fever. The wood is employed for making musical instruments, and the tough bark yields strings.

MAR, EARL OF. Scottish title held by the families of Goodeve-Erskine and Erskine. The first creation, of 1404, is linked with the barony of Garioch; the other, created in 1565 and linked with the barony of Erskine, 1429, is joined with the earldom of Kellie, 1619. The name Mar is derived from a district in Aberdeenshire. The eldest son of the earl of Mar is known as Lord Garioch, and of the earl of Mar and Kellie as Lord Erskine.

MARABOU (*Leptoptilus crumeniformis*). Species of stork found in Central Africa. Large and ugly, with almost bare head and a pendulous pouch in front of the throat, it is allied to the adjutant (q.v.) stork.

MARACAIBO. Seaport of Venezuela and capital of the state of Zulia. The centre of an oil-producing region, its exports include coffee, cocoa, sugar, rubber, dye-woods, timber, hides, ores, and quinine. Pop. 74,700. The gulf of Maracaibo is a large opening of the Caribbean Sea. In N.W. Venezuela it is connected on the S. with Lake Maracaibo. Also known as the gulf of Venezuela, its length is 75 m. and its extreme width about 150 m. Connected with the gulf by a strait is a lagoon also called Maracaibo.

MARACHESTI. Town of Rumania, in Moldavia. It is 12 m. N. of Focsani, and is a junction of the rly. serving the Sereth valley. The battle of Marachesti was fought between the Rumanians and Russians on the one side and the Austro-Germans on the other, Aug. 12-29, 1917. It was the greatest battle

fought by the Rumanians in the Great War, and it ended in the complete defeat of the Austro-Germans. The Rumanians bore the brunt of the fighting.

MARAH (Heb. bitterness). Place in the wilderness of Shur, where the Israelites found the water bitter, Ex 15, 23; Num. 33.

MARASCHINO. A liqueur, so called from a kind of cherry. A product of Dalmatia, it is distilled from cherry-pulp, to which honey or sugar is added, and contains about 35 p.c. of alcohol. Pron. Marras-keeno.

MARAT, JEAN PAUL (1744-93). French revolutionist. Born at Boudry, Neuchâtel, May 24, 1744, he studied medicine and practised in London, where he published his *Philosophical Essay on Man*, 1773, and *The*

Chains of Slavery, 1774. Returning to Paris and devoting himself to politics, he published in 1789 the first number of *L'Ami du Peuple*, a paper which preached an extremist policy that brought Marat to grief more than once. He took refuge in London 1791-92, and on his return to Paris was elected to the Convention. For attacking the Girondins he was sent before the revolutionary tribunal. Marat was acquitted and the Girondins fell, May 31, 1793. Six weeks later he was assassinated in his bath by Charlotte Corday, July 13, 1793. See Corday, Charlotte.

MARATHA OR MAHRATTA. People in W. and central India. Besides its stricter caste usage, the name also denotes loosely the castes and tribes—such as Kunbis—speaking the 39 dialects of Marathi, which forms the S. group of Indo-Aryan languages. Their number about 18,798,000. The medieval Maharashtra kingdom occupied a triangle from Nagpur to Daman and Karwar. The Maratha power established at Poona by Sivaji, 1657, fell to pieces after his death in 1680. There are a number of Maratha units in the Indian army, and in 1921 the title of royal was conferred on the 11th Marathas in recognition of its services during the Great War.

MARATHA WARS. There were campaigns between the British and the Maratha people of India in 1778-82, 1803, 1816-18, and 1843. The second war is notable for the generalship of Wellesley, later duke of Wellington, who, at Assaye, Sept. 23, 1803, defeated the chieftain Sindia against great odds.

MARATHON, BATTLE OF. Fought 490 B.C. between the Greeks and the Persians, on the plain of Marathon, on the N.E. coast of Attica, about 22 m. from Athens. The Greek forces numbered 9,000 Athenians and 1,000 Plataeans under Callimachus and Miltiades, and the Persian army was five or six times their strength, under Datis and Artaphernes, the generals of Darius. Most of the Persians succeeded in re-embarking in their ships, but some 6,000 lay dead on the field, as compared with the Greek loss of 192 killed. The actual direction of the battle seems to have been in the hands of Miltiades.

MARATHON RACE. Long distance running race. It is named from the battle of Marathon, the result of which was announced at Athens by a courier, sometimes called Pheidippides, who fell dead on his arrival. The race, properly of 26 m. 385 yards, is

one of the events at the modern Olympic games. It has been won by S. Louis (Greece), 1896; M. Theato (France), 1900; Hicks (U.S.A.), 1904; J. J. Hayes (U.S.A.), 1908; K. K. McArthur (S. Africa), 1912; H. Kohlenstein (Finland), 1920. In 1928, at Amsterdam, the race was won by a French Algerian, El Ouafi, in 2 h. 32 m. 57 s.

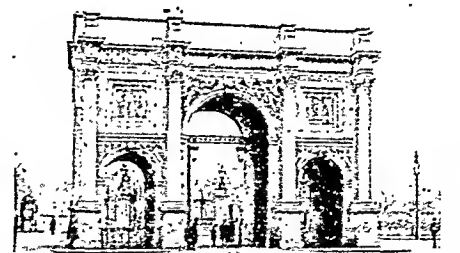
MARAZION OR MARKET JEW. Seaport of Cornwall. It stands on Mount's Bay, 3 m. from Penzance, on the G.W.R. At low tide it is connected by a causeway with St. Michael's Mount, about $\frac{1}{2}$ m. distant. Fishing is the chief industry. Pop. 1,114.

MARBLE. Variety of crystalline limestone of granular structure. The marbles of commerce do not all come within this definition, many non-crystalline limestones capable of taking a polish being called marbles. Pure marble is snow-white. Black varieties, due to the presence of bituminous matter, are quarried in Ireland and in Derbyshire, where is also found the famous rosewood marble. Parian marble, quarried in Paros, was extensively used for sculpture by the Greeks. Modern statuary work is usually made from marble quarried at Carrara (q.v.), in Italy. Pentelic marble, from Attica, supplied the stone for the Parthenon. Connemara marble is a beautiful green in colour.

MARBLE ARCH. London monument. Modelled by George Nash to serve as an entrance to Buckingham Palace, it was erected there in 1828. Taken down in 1850, it was re-erected in 1851 at the N.E. end of Hyde Park, replacing a brick gateway. Chantrey's statue of George IV, now at the N.E. corner of Trafalgar Square, was intended for the top of the arch, which now stands away from the park.

MARCELLUS, MARCUS CLAUDIUS (43-23 B.C.). Nephew and adopted son of Augustus Caesar. Destined to be the successor of Augustus, whose daughter Julia he married, his early death was deeply mourned.

MARCH. Market town and urban dist. of Cambridgeshire. It is 30 m. from Cambridge on the L.N.E.R., and has engineering and machinery works. In 1929 the L.N.E.R. opened a large marshalling yard here. Market day, Wed. Pop. 8,959.



Marble Arch, London. North side of the arch, with the gates of Hyde Park in the background.

MARCH, EARL OF. Title borne in England and Scotland by nobles who had charge of the marches. In England the family of Mortimer provided earls of March from 1328 to 1425. In 1425 the estates passed to Richard duke of York.

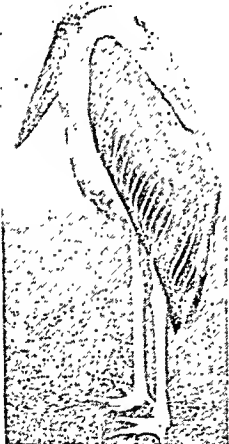
The Scottish earldom was long associated with the family of Dunbar, but was forfeited in 1434. In 1619 the 3rd duke of Lennox was made earl of March, and in 1675 Charles Lennox, a natural son of Charles II, was made duke of Lennox and earl of March. The title is now used as a courtesy one by the eldest son of the duke of Richmond, a descendant of Lennox. Another earldom of March was created in 1697 for William Douglas, a younger son of the 1st duke of Queensberry, but both titles became extinct on his death in 1810.



Maple. Common field maple in full leaf.



Jean Paul Marat, French revolutionist. Musée Carnavalet, Paris.



Marabou. Specimen of the Central African stork.

MARCH, ROGER MORTIMER, EARL OF (c. 1287-1330). Son of the 7th baron Mortimer, he formed a liaison in France with Edward II's queen, Isabella. With Isabella's aid he invaded England and Edward II was dethroned and murdered; but in Oct., 1330, Edward III surprised and captured Mortimer in Nottingham Castle, and the usurper was hanged at Tyburn, Nov. 29, 1330.

MARCHAND, JEAN BAPTISTE (b. 1863) French soldier. He was born at Thoisse, Aisne, Nov. 22, 1863, and entered the army in 1883. He explored extensively in Africa, 1888-99, and in Sept., 1898, refused to comply with Kitchener's request to withdraw from Fashoda till he was ordered to do so by the French government. He won distinction in command of a brigade during the Great War, 1915-17, and was promoted general of division.



J. B. Marchand,
French soldier

MARCHES (Fr. *marche*, border). Term applied to territory about the frontiers of adjoining countries, and especially to the borderland of England and Wales and of England and Scotland. The German equivalent is mark. Till 1536 the marches of Wales were held by English barons known as lords marchers. The word is also applied in Scotland to the borders of burghs and estates.

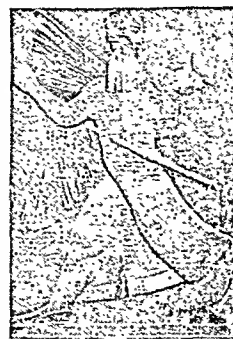
MARCONI, GUGLIELMO, MARCHESE (b. 1874) Italian scientist and inventor. Born near Bologna, Italy, April 25, 1874, of an Italian father and an Irish mother, he was educated at Leghorn and Bologna universities, and early became interested in the discoveries by Hertz regarding wave transmission. In 1896 he submitted his inventions to the British Government, in 1897 the Marconi Wireless Telegraph Company was founded, and in 1899 signals were transmitted across the English Channel. In Dec., 1901, communication was established between Cornwall and Newfoundland, and a rapid advance was made in methods of communication with ships at sea and in many other directions. In 1924 Marconi invented the beam system, whereby wireless rays can be concentrated into a beam instead of being diffused. Marconi received innumerable honours, sharing the Nobel prize for physics, 1909, receiving the G.C.V.O., 1914, becoming a senator of the kingdom of Italy, 1915, and a marquess in 1929. Wireless messages are called Marconigrams. See Wireless Telegraphy.



Guglielmo Marconi,
Italian scientist

MARCUS AURELIUS (121-180). Roman emperor, 161-180. Marcus Annus Verus, who, as the adopted son of the emperor Antoninus Pius, bears the name of Marcus Aurelius Antoninus, represents the ideal of the highest pre-Christian conception of character. Unlike Antoninus Pius, he did not enjoy peace. In the East the Parthians fell upon his borders. Across the Rhine and the Danube, Germans and Dacians rose in revolt, and Italy itself was smitten with pestilence. His campaigns were conducted conscientiously, successfully, and with an unflinching magnanimity; but his victories were won at

the cost of concessions which admitted large numbers of barbarians to Roman territory: and twice he persecuted the Christians.



Marduk, Chief Babylonian god.
From a relief in the Brit. Mus.

Marduk, High-est Babylonian deity. He is the Biblical Bel and Merodach, and the god of Nebuchadrezzar (Daniel 9).

MAREE. Loch or lake of Scotland. In the co. of Ross and Cromarty, it is about 21 m. W. of Dingwall. Fringed with lofty mountains, it is 13½ m. long, has a breadth varying from ½ m. to 2 m., and covers 11 sq. m.

MARENGO. Village of N. Italy. S. of the Po, 5 m. E. of Alessandria, it is famous as the scene of Napoleon's great victory over the Austrians, June 14, 1800. After seven hours' fighting the Austrians under Count Melas seemed certain of victory. The French, under Desaix, were falling back. Then Napoleon appeared, and largely through the brilliant work of Kellermann's cavalry the Austrians broke and fled, losing about 7,000 in killed and wounded and 3,000 prisoners, out of a total force of some 30,000 men. The French lost about 7,000 killed.

MARE'S TAIL (*Hippuris vulgaris*) Aquatic perennial herb of the natural order Haloragaceae. It is a native of temperate and cold regions of the N. hemisphere. It has a stout rootstock which creeps in lakes and ponds, sending up slender, many-jointed stems, closely invested with whorls of slender leaves. The minute flowers are green, with red anthers, but without petals.



Mare's-tail. Stems and leaves of the aquatic plant

MARGAM. Coal mining centre of Glamorganshire, Wales. It is 4 m. S.E. of Aberavon. Near is Margam Abbey, long the residence of the Talbot family. Margam church, dedicated to the Virgin Mary, was originally the church of a 12th century abbey. Formerly an urban dist., Margam was amalgamated with Aberavon in 1921 to form the borough of Port Talbot (q.v.).

MARGARET (c. 1045-93). Scottish saint and queen. The daughter of Edward, a son of Edmund Ironside, her father was in exile when she was born. He died young, and the princess, having returned to England with her brother Edgar Atheling, took refuge with the king of Scots. About 1067 she was married at Dunfermline to Malcolm III. In 1093 her husband and eldest son were killed in battle with the English, and soon after the queen died in Edinburgh. Three of her sons, Edgar, Alexander I, and David I, became kings of Scotland. She was canonised in 1250.

MARGARET (1430-82). Queen of Henry VI of England. Born March 23, 1430, the

daughter of René of Anjou she was married to Henry VI of England at Titchfield Abbey in 1445. During the madness which attacked her husband, 1453-55, Margaret did her utmost to thwart Richard of York. War broke out, and after a series of defeats she died in France April 25, 1482. See Roses, Wars of.

MARGARET (1283-90). Queen of Scotland. Daughter of Eric II of Norway, and Margaret, daughter of Alexander III of Scotland, she was nominally queen of Scots from 1286-90, when, a marriage having been arranged between her and the future English king, Edward II, she was sent from Norway to Scotland, but died on arriving at Orkney.

MARGARET (1489-1541). Queen of Scotland. Eldest daughter of Henry VII of England, she was born Nov. 29, 1489. In 1503 she was married to James IV of Scotland, who was killed at Flodden in 1513, when Margaret became regent for her child James V. In 1514 she married Archibald Douglas, earl of Angus, and in 1527 Lord Methven. She died at Methven Castle, Oct. 18, 1541.

MARGARET (1553-1615). Queen of France, known as Marguerite of Valois and La Reine Margot of romance. The daughter of Henry II and Catherine de' Medici, she was born May 14, 1553. In 1572 she was married to Henry of Navarre, afterwards Henry IV. She died in Paris, March 27, 1615. She wrote poems and some Memoirs.

MARGARET (1492-1549). French princess. The daughter of Charles of Orleans and the elder sister of Francis I, she was born at Angoulême, April 11, 1492. She married in 1509 Charles, duke of Alençon, and after his death, Henry, king of Navarre. She died Sept. 21, 1549, leaving a daughter, Jeanne, who became the mother of Henry IV. Margaret was the author of *The Heptameron*.

MARGARINE. Name of a butter substitute. It is made of a great variety of animal and vegetable oils and fats and, when exposed for sale, must be labelled with the name, and the wrapper of all packages sold must bear the word margarine. The first butter substitute was the invention of a French chemist named Mège-Mouries. In this fresh beef fat was digested with a weak alkaline solution in the presence of pepsin. The resulting mixture, oiled and pressed, was sold in Paris as oleo-margarine. Mège-Mouries improved his process by churning the fat with cow's milk. Milk is used in the modern process of manufacture to impart butter flavour and to emulsify the fats.

MARGATE. Mun. bor., watering place, and seaport of Kent. In the isle of Thanet, it is 74 m. from London on the S.R. Chiefly



Margate, The harbour, with the tower of Holy Trinity church beyond
Dixon Scott

known as a pleasure resort, it has a jetty, pier, good sands, park, a fine esplanade, and remarkably bracing air. The chief industry, apart from providing for visitors, is fishing. The east end is known as Cliftonville. The town has electric tramway and motor-bus services, which connect it with Ramsgate and other places in Thanet. During the Great War, damage estimated at £275,000 was done by German aircraft. Pop. 46,475.

MARGAY. Small tiger cat of Central and S. America. Its fur is usually bright brown or grey, thickly spotted with black. It lives in forests and preys on birds and small mammals.



Margay Specimen of the South American tiger cat.
W. S. Berridge, F.Z.S.

MARGUERITE. Name given by florists to several plants of the order Compositae. It is more generally applied in gardens to *chrysanthemum frutescens*, which came from the Canary Islands and bears white or yellow flowers.

MARGUERITE, PAUL (1860-1918). French novelist. The son of General J. A. Marguerite, he was born in Algeria, and became a clerk in the ministry of instruction. After publishing several novels he collaborated with his brother Victor (b. 1866) in *Le Pariétaire*, 1896; *Le Carnaval de Nice*, 1897; and *Une Époque*, four volumes of striking stories of the Franco-Prussian War. Other joint works were *Femmes nouvelles*, 1899; *Quelques idées*, 1905; *Sur le vif*, 1906; and *Nos tréteaux*, 1911. Paul Marguerite's later works, written alone, included *La flamme*, 1909; *La maison brûle*, 1913; and *Jouir*, 1918. He died at Hossegor, Landes, Dec. 30, 1918.



Marguerite. Flowers of the daisy.

MARIA THERESA (1717-80). Ruler of the Holy Roman Empire. Born in Vienna, May 13, 1717, a daughter of the emperor Charles VI, she married Francis of Lorraine in 1736. In 1740, Charles VI died, leaving, by pragmatic sanction, Maria Theresa as his heiress, but Charles Albert of Bavaria procured his own election as emperor. Frederick the Great seized Silesia, and Europe was plunged in the war of the Austrian Succession. Before this was ended, in 1748, Charles Albert died.



Maria Theresa, Ruler of the Holy Roman Empire.
From the portrait by M. de Maitens

and Francis of Lorraine was elected emperor as Francis I, but Maria Theresa had to submit to the loss of Silesia. Her minister, Kaunitz, reconstructed the system of European alliances to crush Frederick, who opened the Seven Years' War. In 1765 Maria Theresa's son Joseph II succeeded his father as emperor, and under pressure from him the empress was accessory to the first partition of Poland in 1772. She died Nov. 29, 1780. Her children included the emperors Joseph II and Leopold II.

MARIE ANTOINETTE (1755-93). Queen of France. Daughter of the empress Maria Theresa and Francis I, she was born at Vienna, Nov. 2, 1755. In 1770 she married the dauphin, afterwards Louis XVI. Her lack of education, disregard of etiquette and devotion to Austria made her position at the French court difficult, and when her husband succeeded to the throne in 1774 the grossest libels were circulated about her.

The result of this campaign was that when the Revolution came it was she, rather than the dull and decorous king, who was blamed for the misgovernment of centuries.

The Tuileries was invaded by the mob, June 20, 1792. Louis XVI was treated with cold contempt; upon Marie Antoinette the crowd heaped such hideous abuse that her hair turned white in the night. Two months later the Tuileries was again stormed, the Swiss guards were killed at their posts, and the royal couple were sent as prisoners to the Temple. Louis was executed Jan. 21, 1793; Marie Antoinette's son was taken from her in July; in August she was moved to the Conciergerie; on Oct. 14, 1793, before the revolutionary tribunal, she was accused of treason. Sentence of death was passed at 4.30 a.m. Oct. 16, and at 11 o'clock she ascended the scaffold. See French Revolution.



Marie Antoinette.
Queen of France
After Greuze

MARIE DE' MEDICI (1573-1642). Queen regent of France. A daughter of Francis I, grand duke of Tuscany, in 1600 she married Henry IV of France. Henry was murdered in 1610 and Marie became regent for their son Louis XIII. An ambitious and unscrupulous woman, she was exiled to Blois 1617-19. When liberated she made an enemy of her former counsellor, Cardinal Richelieu, and in 1631 fled the country, dying, it is said, in a hayloft at Cologne, July 3, 1642.



Marie de' Medici,
Queen of France
From a medal

MARIE LOUISE (1791-1847). Empress of the French. A daughter of Francis I of Austria, she was married in Paris to Napoleon in 1810, and a son, the duke of Reichstadt, was born to them in 1811. She acted as regent during Napoleon's absence in 1814, but proved herself utterly incapable. After Napoleon's abdication she returned to Austria, and at the congress of Vienna the duchies of Parma, Guastalla, and Piacenza were settled upon her. In Parma she came under the influence of count von Neipperg, to whom she bore several children, and whom she married in 1822. She died at Vienna, Dec. 18, 1847.



Marie Louise,
Empress of the French
After Prud'hon

MARIETTE, FRANÇOIS AUGUSTE FERDINAND (1821-81). French Egyptologist. Born at Boulogne, Feb. 11, 1821, he discovered the Serapeum (q.v.), 1851; and the so-called temple of the Sphinx, Gizeh, 1853. He was first director of the national museum at Cairo, and directed excavations at Dendera, Edfu, Karnak, Abydos, and Tanis (see Mastaba). He wrote *Monuments of Upper Egypt and Outlines of Ancient Egyptian History*. He was made pasha, 1879, and died at Bulak, Jan. 19, 1881.

MARIGOLD (*Calendula officinalis*). Annual herb of the order Compositae, native of S. Europe. It has oblong leaves, and large orange-rayed flowers, which are produced plentifully from spring to autumn. The so-called African marigold (*Tagetes erecta*) and its smaller congener, the French marigold (*Tagetes patula*), both garden



Marigold. Flowers of African marigold

annuals, are natives of Mexico. In colour, the flowers of the first are citron-yellow, of the second more tawny. The marsh marigold (q.v.) belongs to a different order, Ranunculaceae.

MARINES, ROYAL. Soldiers raised and trained for service on board ship. From 1664 regiments were raised as required for service with the fleet, but in 1755 a permanent corps was formed. In 1802 the king granted them the title of Royal Marines; in 1804 artillerymen were added to the corps; and after the Crimean War the title Royal Marine Light Infantry was granted. In 1859 the corps was divided into two branches, the Royal Marine Artillery (R.M.A.) and the Royal Marine Light Infantry (R.M.L.I.). In 1923 R.M.A. and R.M.L.I. were amalgamated and incorporated as the Royal Marines. The king is colonel-in-chief. A Royal Marine Police Force was formed in 1922. The motto is *Per mare, per terram*. The record of the corps is a very distinguished one.



Royal Marines.
Cap Badge

The U.S.A. has a marine corps similar in its functions to the British. The French marines are used as colonial troops and do not serve on board ship. The German marines were mainly used for coast defence.

MARIOLATRY. Protestant term for the veneration of the Blessed Virgin Mary, as practised by the Roman Catholic Church. Strictly speaking, the term is incorrect. The supreme worship (latreia) is restricted to God alone. R.C. theologians ascribe to the B.V.M. only the highest veneration (hyperdulia), while a lesser reverence (dulia) is paid to the saints generally. In the liturgical prayers of the missal and breviary are to be found only petitions that the faithful may be aided by her intercession with God. But the popular devotions go much farther. At the Reformation the invocation of the B.V.M. was abandoned by Protestants as unwarranted by Holy Scripture. See *Angelus*; *Ave Maria*; *Mary: Rosary*.

MARIONETTE. Little figure generally made of wood, manipulated on a miniature stage by wires or strings. The name is thought to have been originally a diminutive of Marie. Small figures with limbs moved by mechanical means were used by the ancient Egyptians and were known to the Greeks and Romans. In medieval Italy they were familiar as fantoccini and burattini. They had their heyday in France from the end of the 16th century to the end of the 18th.

MARIS, JACOB (1837-99). Dutch painter. Born at The Hague, he came under the influence of the Barbizon school (q.v.), and exhibited at the Paris Salon, 1862-72. He painted Dutch landscape, river scenes, and coast scenery, remarkable for delicate rendering of atmospheric effects combined with a strong sense of design. He died Aug. 17, 1899.

Matthew Maris (1835-1917), Dutch painter, was a brother of Jacob Maris. He developed a mystic, emotional, and irresistibly attractive style. For several years he lived as a recluse in London, where he died Aug. 22, 1917.

Another brother, Willem Maris (1844-1910), painted chiefly pastoral landscapes, executed with freshness and vigour.

MARISCHAL, EARL. In Scotland, a high office of state with duties similar to those of the earl marshal in England. From the 12th century the post was hereditary in the family of Keith, but ceased to exist after the attainder in 1716 of the 10th earl marischal.

George Keith became the 10th earl in 1712. He served under Marlborough, but engaged in the Jacobite rising of 1715, and escaped to the Continent, whereupon he was attainted and his estates were forfeited. In 1719 he headed an

abortive Spanish attempt to invade Scotland. He continued to intrigue against the government, but took no part in the rebellion of 1745.



George Keith,
10th Earl Marischal
After P. Costanzi

Marischal College is one of the two colleges forming Aberdeen University. It was founded in 1593 by George Keith, 5th earl marischal, but of the original building hardly a fragment remains except the stone inscribed "They haif said; quhat say thay; lat thame say." See illus. p. 5.

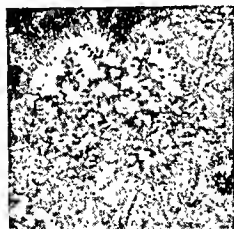
MARITSA. River of the Balkans, the ancient Hebrus. It rises in the Rhodope Mts., in Bulgaria, is 300 m. long, and navigable for small boats to Adrianople.

MARIUS, GAIUS (157-85 B.C.). Roman general and statesman. Born at Cereatae, near Arpinum, of humble parentage, he served



Gaius Marius,
Roman general
From a bust

under the younger Scipio Africanus in Spain, in Africa against Jugurtha, crushed the Cimbri and Teutones, and, hailed as saviour of the state, was elected consul for the sixth time in 100. In the Social War (90-88) Marius rendered further services to the state; but when war broke out with Mithradates, he was passed over in favour of the patrician Sulla, whom he attempted to deprive of the command. For a time a refugee, he returned and, with the aid of Cinna, entered Rome, took a terrible revenge on the patricians, and was elected consul for the seventh time. He lived to enjoy his consulship for only 18 days. See Sulla.



Marjoram. Flower-head
of *Origanum vulgare*

are gathered and dried, and purposes in cookery.

MARK. German coin. Virtually the equivalent of the English shilling. currency was re-established on a gold basis in 1924 the unit was the Reichsmark, which was coined in gold and silver, the gold coins being for 20 and 10 marks and the silver ones for 1, 2, 3 and 5 marks. Notes for 10 marks and over were issued and made legal tender.

In 1663 a Scottish mark was issued and valued at 13s. An old English weight was also called a mark; it was about a quarter of a pound.

MARK (Lat. Marcus). Jewish convert to Christi-

anity in the Apostolic age and writer of the second Gospel. He was apparently a Levite of Cyprus, cousin to Barnabas, and attended S. Paul and S. Barnabas on their first missionary journey, but turned back at Perga. He is said to have received from S. Peter the facts embodied in the second Gospel. His festival is April 25, and his symbol is a winged lion.

MARK, THE GOSPEL OF. Earliest of the three synoptic Gospels and the main source of the other two. It lays emphasis on the works rather than on the preaching of Jesus. Hence many of the miracles are related at greater length and with more vivid detail than in the other Gospels. Generally ascribed to 64-70, it may have been composed about a decade earlier. Many modern scholars hold that the present Gospel was preceded by an earlier and briefer edition, and that the last 12 verses replace the original ending, now lost.

MARK ANTONY OR MARCUS ANTONIUS (c. 83-30 B.C.). Roman statesman and orator. He was related through his mother to Julius Caesar. In spite of his dissipation, his talents and daring were soon recognized by Julius Caesar by whom he was rapidly advanced and with whom in 44 he was named as colleague in the consulship. After the murder of Caesar he and Caesar's adopted son Octavian secured their appointment, with a third and subordinate colleague, M. Lepidus, as triumvirs for the restoration of the commonwealth. At Philippi in 42 they crushed Brutus and Cassius, the leaders of the republican party, and divided the Roman world between them, Octavian taking the West and Antony the East. Later Antony became enslaved by the Egyptian queen, Cleopatra (q.v.). In 31 Antony and Octavian joined battle for the mastery. The victory fell to Octavian's fleet, under the command of Agrippa, in the sea-fight of Actium, and Antony fled to Egypt with Cleopatra. His death by his own hand in the following year left Octavian predominant in the Roman world.



Mark Antony,
Roman statesman
From a bust

MARKET (Lat. mercatus, trade). Place where goods are sold. In the Middle Ages the right to hold a market was one of the most

valuable privileges a king or lord could grant to his subjects. In time every town of importance had its market, held on certain days and under certain conditions; hence the phrase market town. Medieval markets were held in an open square in the centre of the town, therefore called the market place.

To-day markets form an important source of revenue, sometimes to individuals, but more usually to municipalities. The power to establish them or buy them was conferred on town councils and other bodies by an Act of 1875. A more modern

use of the word is for all dealings in a certain class of goods, e.g. the wool market, or the cotton market; while the term money market covers all transactions in instruments of credit.

MARKET CROSS. Stone structure surmounted by a cross, standing in a market place. Originally it was a plain cross-shaft upon a stepped pedestal, used for sermons and proclamations. Shelter for wayfarers was afterwards provided, and this developed into a poly-

gonal structure with arched openings, groined vaulting, and other enrichments.

MARKET BOSWORTH. Parish of Leicestershire, on the L.M.S. Rly. It has a grammar school at which Dr. Johnson was an usher. Bosworth Field, 2 m. to the S., was the scene of the battle in which Richard III was killed, Aug. 22, 1485. Pop. 886.

MARKET DEEPING. Parish of Lincolnshire. It stands on the Welland, 8 m. from Peterborough. In the fen country, it is surrounded by reclaimed land. Pop. 888.

MARKET DRAYTON. Market town and urban dist. of Shropshire, known also as Drayton-in-Hales. It stands on the Tern, 18 m. from Shrewsbury. The G.W.R. has a junction here with a branch of the L.M.S. S. Mary's Church dates from the 12th century, and at the old grammar school Robert Clive was educated. The town is an agricultural centre. Market day, Wed. Pop. 4,710.

MARKET HARBOROUGH. Market town and urban dist. of Leicestershire. It stands on the Welland, 16 m. from Leicester, and is served by the L.M.S. and L.N.E. Rlys. and the Union canal. The church of S. Dionysius is a fine medieval building, and the old grammar school is an interesting survival. There are manufactures of patent foods, corsets, etc. Market day, Tues. Pop. 8,918.

MARKET RASEN. Market town and urban dist. of Lincolnshire. It stands on the Rasen, 13 m. from Lincoln, on the L.N.E.R. Race meetings are held twice yearly. Market day, Tues. Pop. 2,177.

MARKET WEIGHTON. Market town of Yorkshire (E.R.). It is 19 m. from York, on the L.N.E.R. It is connected with the Humber by a canal, and is an agricultural centre. Market day, Wed. Pop. 1,717.

MARKHAM, SIR CLEMENTS ROBERT (1830-1916). British traveller and geographer. Born at Stillingfleet, July 20, 1830, he was educated at Westminster, and was in the navy from 1844-52. In 1850 he went with the expedition for the relief of Sir John Franklin. His travels in Peru, 1852-54, led him to introduce quinine yielding cinchona trees in India.



Sir C. Markham,
British traveller
Russell

Appointed to the India Office, 1867-77, he accompanied the expedition to Abyssinia, 1867-68. He was knighted in 1896, and died Jan. 30, 1916. He wrote Franklin's Footsteps, 1862; Travels in Peru and India, 1862; Richard Hakluyt, 1896; and The Lands of Silence, 1921.

MARKHOR (Capra falconeri). Species of wild goat, found in Kashmir and Afghanistan. It has massive horns, twisted either closely like a screw, or open like a corkscrew. A fine specimen stands about three and a half feet high at the withers. The chin-beard often reaches nearly to the knees, and the colour varies from greyish brown to nearly white.



Markhor. Specimen of the wild
goat found in Afghanistan
W. S. Berridge, F.Z.S.

MARKIEVICZ, CONSTANCE GEORGINE COUNTESS (1884-1927). Irish politician. Daughter of Sir Henry Gore-Booth, she married, in 1900, a Polish count, Casimir Markiewicz. She became identified with the extreme section of Irish politics and took a leading part in James Larkin's industrial movement in 1913. For her share in the Irish



Mark. Reverse and
obverse sides of the
German silver coin;
slightly reduced

rebellion of April, 1916, she was sentenced to death, a sentence afterwards commuted to a term of penal servitude. In 1918 she was elected M.P. for S. Patrick's, Dublin, the first woman to be returned to the British Parliament, but she never took her seat. She died July 15, 1927.

MARKINCH. Burgh of Fifeshire, Scotland. It is 33 m. from Edinburgh, on the L.N.E.R. In a coal-mining area, its industries include paper making. Pop. 1,610.

MARKING NUT TREE (*Scmecarpus anacardiaceae*). Evergreen tree of the order Anacardiaceae. A native of the East Indies, it is also called the kidney bean of Malacca. It has alternate, ohlong, leathery leaves, and small, greenish-yellow flowers in terminal clusters. The nut or bean is enclosed in a hard shell attached to a pear-shaped, fleshy, yellow receptacle, which is roasted and eaten. The unripe fruit yields a kind of ink. Mixed with quicklime, the juice forms an indelible stain for marking cotton or linen.

MARKINO, Yoshio (b. 1874). Japanese artist and author. Born Dec. 25, 1874, he settled in the U.S.A. in 1893. In 1897 he came to London. He published *A Japanese Artist in London, 1910*; *My Recollections and Reflections, 1913*; and illustrated in colour a number of travel books.

MARL. Mixture of calcium carbonate, clays, and sands. The word is loosely applied to a large number of friable clays of widely differing composition, and though most contain calcium carbonate, many so-called marls are almost entirely deficient in it. Blue or shell marl, consisting largely of shells of molluscs, contains 40 to 50 p.c. of carbonate of lime. Marls are used in agriculture as fertilisers.

MARLBOROUGH. Mun. bor. and market town of Wiltshire. It stands on the Kennet, 11 m. from Swindon, and is served by the G.W. and L.M.S. Rlys. The Castle Inn is a famous old coaching inn. There is a 16th century grammar school as well as the modern public school. Marlborough was a settlement of the Britons and probably of the Romans. Market day, Sat. Pop. 4,198.

Marlborough Downs is the name given to a range of chalk hills lying to the W. of the town. Marlborough College is an English public school. Founded in 1843 for the sons of the clergy, it stands in large grounds at Marlborough, and was thrown open to the sons of laymen in 1853. It has an army department.

Marlborough. District of S. Island, New Zealand. Its area is 4,225 sq. m. It exports wool, timber, and hides. Pop. 18,317.

MARLBOROUGH, DUKE OF. British title borne since 1702 by the family of Churchill. From 1626 to 1679 there was an earldom of Marlborough held by the family of Ley. In 1689 the title was revived for John Churchill, who, in 1702, was made a duke. His titles passed to his eldest daughter, Henrietta, wife of the 2nd earl of Godolphin, and then to Charles Spencer, 5th earl of Sunderland, the son of Marlborough's second daughter. From him the later dukes are descended. The family name is Spencer-Churchill.

Charles Richard John, born Nov. 13, 1871, succeeded as 9th duke in 1892. He was assistant military secretary to Lord Roberts in S. Africa, 1900; paymaster-general 1899-1902; colonial under-secretary 1903-5; parliamentary secretary to the board of trade 1917-18. In 1895 he married Consuelo Vanderbilt. He was divorced Nov., 1920, and in June, 1921, married Gladys Deacon of Boston, U.S.A. The duke's eldest son is called the marquess of Blandford.

MARLBOROUGH, JOHN CHURCHILL, 1st DUKE OF (1650-1722). English soldier. He was born of a Dorset family, at Ashe, near Axminster, in June, 1650. He entered the house-

hold of James, duke of York, as a page, became an ensign in the Guards, saw service at Tangier, and in 1678 married Sarah Jennings.



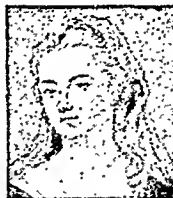
Duke of Marlborough,
English soldier
After Sir Godfrey Kneller

He held high command in the army of James II, but deserted him for William of Orange, who, on accepting the English crown, created Lord Churchill, as he then was, earl of Marlborough. Created a duke and made head of the British and Dutch forces in 1702, he won the overwhelming victory over the French and Bavarians at Blenheim, Aug. 13, 1704. At Ramillies, on May 23, 1706, he struck another crushing blow, and there followed the brilliant victories over the French at Oudenarde in 1708, and at Malplaquet in 1709. Charged in 1711 with misappropriating public moneys, he was deprived of all his offices and retired abroad. He was recalled in 1714; but, broken by a stroke of apoplexy in 1716, he died on June 16, 1722, and was buried in Westminster Abbey. See Blenheim; Malplaquet.

Marlborough was one of the greatest masters of the art of war known to history. As a diplomatist he was hardly less supreme than as a soldier. That he was also grasping, avaricious, and capable of intrigue with the exiled James II it is hardly possible to dispute.

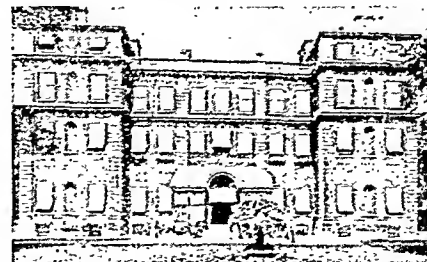
MARLBOROUGH, SARAH JENNINGS, DUCHESS OF (1660-1744). English courtier. Daughter of Richard Jennings, of Sandridge, Hertfordshire, she was

born on June 5, 1660. As maid-in-waiting to the duchess of York, she became intimate with the young princess Anne. In 1678 she married John Churchill, afterwards 1st duke of Marlborough. On Anne's accession in 1702 the duchess received high favours and exerted almost unlimited influence in favour of the Whigs till her dismissal from court in 1710. She then used her biting wit against Anne and the Tories, and in later life wrote a vindication of her husband and her own conduct. She died, Oct. 18, 1744, leaving, it is said, a fortune of three millions.



Sarah Jennings,
Duchess of Marl-
borough
After Lely

MARLBOROUGH HOUSE. London royal residence. Standing in a garden of four acres between Pall Mall and the Mall, it is of red brick, and was built by Wren in 1709-10 for the first duke of Marlborough. It was the residence, after his marriage to Princess Charlotte, of Prince Leopold, 1817-31; of Queen Adelaide, 1837-49; Edward VII, when prince of Wales, 1863-1901; and



Marlborough House, London, one of the royal residences. The main front, overlooking the Mall

George V, when prince of Wales, 1901-10. The house then became the residence of the queen-mother Alexandra, and after her death was prepared for the Prince of Wales.

MARLOW OR GREAT MARLOW. Market town and urban district of Buckinghamshire. It is on the N. bank of the Thames, 32 m. from London, on the G.W.R., and is a popular boating centre, with paper, beer, and chair manufactures. There is a 17th century grammar school. A tablet marks the house in which Shelley lived and wrote. Market day, Mon. Pop. 5,146. Little Marlow is a village on the river, 2 m. from Great Marlow.

MARLOWE, CHRISTOPHER (1564-93). English poet and dramatist. Born at Canterbury, son of a shoemaker and parish clerk, he was educated at the King's School in the cathedral city, and Benet (Corpus Christi) College, Cambridge. He adopted free thought, and shortly after a warrant had been issued for his arrest on some unknown charge he was killed in a brawl at a Deptford inn.

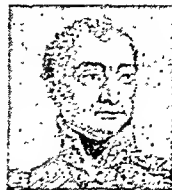
His first tragedy, *Tamurlaine the Great*, 1588, introduced a pliant, passionate, and resonant form of blank verse which gave a lasting impulse to English romantic drama. The *Tragical History of Doctor Faustus*, containing some of the finest poetry in the language, was produced a year later, being followed by *The Jew of Malta*, *Edward the Second*, *The Massacre at Paris*, and the unfinished *Tragedy of Dido*. As a poet Marlowe also lives in his pastoral lyric, *Come, live with me and be my love*. Consult Marlowe and his Circle, F. S. Boas, 1929.

Marmalade. Name given to a preserve of Seville oranges or other fruit. Originally it was a kind of quince jam.

MARMALADE TREE (*Lucuma mammosa*). Tree of the order Sapotaceae, native of S. America. It has large leathery leaves and small solitary, whitish flowers. The fruit is more or less oval, 4 or 5 ins. long, with a rough, rusty brown skin, and a single seed embedded in a luscious, edible pulp with a flavour akin to that of quince marmalade.

MARMARA OR MARMORA, SEA OF. The ancient Propontis. It separates S.E. Europe from Asia Minor. It is connected with the Black Sea by the Bosphorus, and with the Aegean by the Dardanelles. With an area of 4,500 sq. m., it is 175 m. in length, and at its broadest is about 50 m. wide. It derives its name from its island, Marmara, which is famous for marble. The control of the sea was placed by the treaty of Sévres, 1920, under a commission of the Allied powers. See Dardanelles; Gallipoli; Turkey.

MARMONT, AUGUSTE FRÉDÉRIC LOUIS VIESSE DE (1774-1852). French soldier. Born July 20, 1774, he entered the revolutionary



Marshal Marmont,
French soldier
After P. Guérin

army in 1791. He held commands at Marengo and Ulm, and was governor of Dalmatia 1805-9. In 1810 he took command in Spain, where, after capturing Ciudad Rodrigo, he was beaten at Salamanca. He appeared next in Napoleon's lost battles of 1814. He was honoured by the restored Bourbons, whom he served after 1814, and in whose cause he became an exile in 1820. He died March 22, 1852. His *Memoirs* were published in 1856.

MARMOSET (*Hapalidae*). Family of very small monkeys, found only in Central and S. America. In general form nearly approaching the lemurs, they are somewhat squirrel-like in appearance, are covered with

thick fur, and have non-prehensile tails, often bushy. Many species have tufts or fringes on the ears. The toes and fingers have claws instead of nails, except in the case of the great toes. Marmosets live in the trees and climb about like squirrels. Their food consists mainly of insects and fruit.



Marmoset. Small monkey native of S. America. W. S. Berridge, F.Z.S.

several species. All live upon seeds, roots, and leaves, move about in the daytime, and live in burrows, usually in large colonies.

MARNE. River of France. It rises in the Langres plateau, and flows through Champagne to join the Seine at Charonton. Over 200 of its 326 m. are navigable, and it forms part of the Marne-Rhine canal navigation, while the Haute Marne canal joins it to the Saône. It gives its name to a dept. of France famous for champagne. The capital is Châlons-sur-Marne. It covers 3,167 sq. m.

BATTLES OF THE MARNE. Of the three battles, the first, which took place Sept. 6-10, 1914, was a victory for the Allies. After their retreat from Mons and Charleroi the British and French decided to make a stand on the line of the Marne, and on Sept. 4 orders were given for a general attack on the pursuing German armies.

The main battle began on Sept. 6, though the 6th French army attacked the day before. On the British right the 5th French army forced the Germans N. after prolonged fighting, and on the 7th pressed Bülow hard and pushed back his right six miles. On Sept. 8 a fierce engagement raged on the Ourcq, where each side strove to outflank the other without success. On this day Foch's centre and right were forced back, and all but broken, but his coolness and good generalship retrieved the position. On Sept. 9 the flank battle on the Ourcq was fiercely maintained, as fresh German troops of Kluck's army assailed the 6th French army. The British were thrusting N. into the gap between Kluck and Bülow, and Kluck was now in danger of being enveloped on both flanks and crushed.

At the critical moment the German staff lost heart and Kluck began to retreat, while Bülow's right quickly followed. Early in the day the British advanced 4 m. N. of the Marne, threatening Kluck's rear and Bülow's right flank. Fighting continued in St. Gond marshes and elsewhere, and on Sept. 10 the

Allied advance was accelerated. The Allies had won a decisive victory and Paris was saved. The British took 2,000 prisoners and the French 38,000 with 160 guns, though the latter suffered heavy losses. A memorial just outside Meaux commemorates the battle.

The second battle, July 15-17 1918 began with an offensive by the Germans, with the capture of Épernay and Châlons as their objectives. Their victory in the third battle of the Aisne (q.v.) had given them a huge salient, and they desired to extend it and, if possible, break through to Paris. On July 15 the Germans attacked, but were severely checked both W. and E. On the 17th the 7th German army, to facilitate the retirement of the German troops S. of the Marne, made a furious effort to recover the heights dominating the Marne, but failed. Completely checked, the Germans broke off the battle, finding themselves with a long flank from Soissons to Château-Thierry. This was the last great German offensive.

In the third battle, July 18-Aug. 4, 1918, Foch, the Allied generalissimo, delivered his great counter-offensive. Early on July 18, supported by a large force of tanks, French and American divisions under Mangin delivered a sudden attack on the exposed German flank between the Aisne and Château-Thierry. They captured 20,000 prisoners and 400 guns, and forced the crown prince's army across the Marne. See Foch.



Marmot. Specimen of the Alpine species, *Arctomys marmotta*. W. S. Berridge, F.Z.S.

MAROCCHETTI, CARLO, BARON (1805-68) Italian sculptor. Born at Turin he studied art in Paris, where his Young Girl playing with a Dog, 1829, attracted attention. He executed the relief of the battle of Jemappes on the Arc de Triomphe, made some successful statues, that of Emmanuel Philibert at Turin, 1833, being one of the best, and after the revolution of 1848 came to London. Two of his best known works in England are the statue of Richard I at Westminster, and the Inkerman memorial in S. Paul's. He was responsible for the Cawnpore memorial. He died June 4, 1868. See Cawnpore.

MAROON. Name given to certain negro inhabitants of Jamaica. It is an adaptation of the Span. cimarron, applied by the Spaniards

MAROT CLÉMENT (1496-1544). French poet. Born at Cahors, he was educated at Paris, studying law, but gave his time to verse making. In 1526 he was arrested for heresy and in 1535 took refuge in Italy, but soon abjured his heretical opinions and returned. He died an exile at Turin. His popular translation of the Psalms, condemned by the Sorbonne was one of the reasons for his flight. Marot was one of the first to break away from the conventional poetic forms of his time.

MARPLE. Urban dist. of Cheshire. On the river Goyt, on the borders of Derbyshire, it is 12 m. from Manchester, of which it is practically a residential suburb, having stations on the L.N.E. and Cheshire Lines Ryss. The industry is cotton manufacture. Pop. 6,608.

MARPRELATE, MARTIN. Name given to the controversy between the Puritans and the Church of England in 1588-90. It was started by a series of seven secretly printed tracts, signed Martin Marprelate, Gentleman; Martin Junior; and Martin Senior. Martin appears to have been a scholar of Oxford, a theologian, and a man of means—possibly Job Throckmorton. The tracts attacked abuses in church and state, and the character of certain bishops.

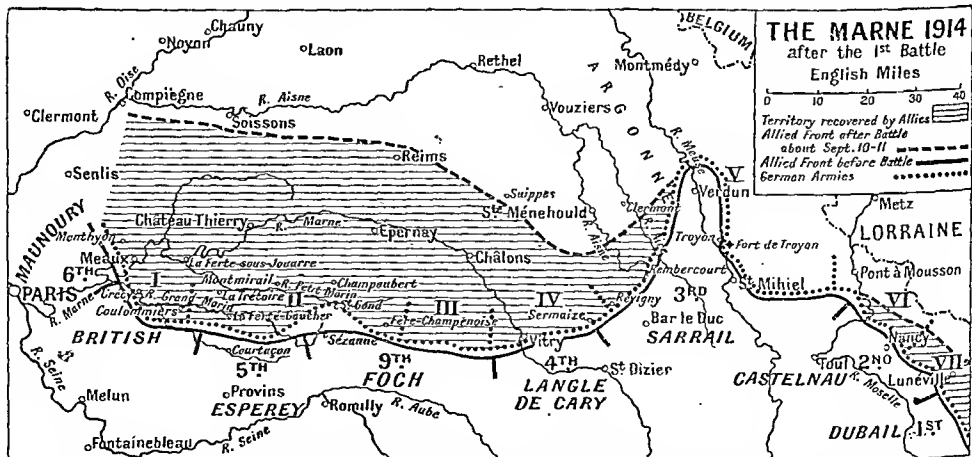
MARQUESAS. Group of French volcanic islands in the Pacific Ocean, N. of the Low or Paumotu Archipelago. Nukahiva and Ilivaoa are the largest. Copra and pearl shell are the chief products. They have been French since 1842. Their area is 480 sq. m. Pop. 2,255.

MARQUESS OR MARQUIS. Title of nobility in the British peerage the title rank between duke and earl; it was introduced in 1385 by Richard II, who made Robert de Vere marquess of Dublin. A marquess is most honourable, and his wife is a marchioness. The eldest son of a duke who is also a marquess takes his father's second title by courtesy. The sons of a marquess are styled lord and his daughters lady before the Christian name. See Peerage.



Marquess. Coronet of an English marquess.

MARQUETRY (Fr. marqueteur, to inlay) Mosaic of ornamental woods, metals, or ivory, inlaid in furniture and smaller articles in Venice, in the 15th century, caskets were



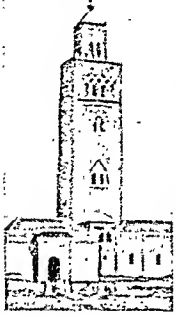
Marne. Map showing how the German advance was arrested by the French and British armies, and the line forced back beyond Reims after the first battle.

to runaway slaves who escaped to the mountains (cima, mountain-top). On the expulsion of the Spaniards from Jamaica in 1658 their slaves took to the hilly interior, and were long a source of trouble to the British.

inlaid with geometrical shapes of wood and ivory, and the Italian "intarsia" work of the 16th century was at first geometrical, and later developed into pictorial design. The English furniture makers of the 18th century

employed marquetry freely. At first it was executed with woods of natural hues. Later, stained woods were employed. *See* Bureau; Inlaying; Louis Style; Mosaic.

MARRAKESH. City of Morocco, one of the country's capitals. It is surrounded by walls and contains several notable mosques, especially the Kutubia. Outside the walls is the palace of the sultan, an immense building. Sometimes called Morocco, the town is an important trading centre. Pop. 150,000. *See* Morocco.



Marrakesh. The Kutubia mosque

stems, 3 or 4 ft. high, bear long, stiff leaves which are rolled up from the side. The flowers are grouped in a long, rounded panicle.

MARRIAGE (Lat. maritus, husband). Union of man and woman sanctioned by the community.

Various considerations early led to the formulation of rules binding men to find their wives either within their own social group, hence called endogamous, or outside it, thus giving rise to the principle of exogamy. An early form of exogamy was marriage by capture, a custom which survives to-day in certain countries. In some Australian tribes the captive is stunned; she may be abducted on horseback, with pretended pursuit; there may be realistic fights among the relatives, as in the New Hebrides.

MARRIAGE LAW. In England, marriage in a church of the establishment must be preceded by publication of banns unless the parties have obtained a marriage licence. The special licence of the archbishop of Canterbury is necessary where the marriage service is to be performed in a building other than a church, or not within the authorised hours, which are 8 a.m. to 3 p.m. Marriage, without publication of banns, may take place in church under the authority of a bishop's licence, but one of the parties must have had his or her usual place of abode in the parish for fifteen days before the granting of the licence. If either of the parties is under 21 years, and has not previously been married, the consent of the parent or guardian must be obtained. Immediately after the marriage the clergyman must enter the particulars in duplicate in two registers, and the record is signed by him, and by the parties and by two witnesses. By the Marriage Act of 1929 the marriage of persons under 16 is illegal.

Marriage may also take place in Nonconformist churches and in other places of worship which are registered for solemnising marriages.

CIVIL MARRIAGE. Marriages can also be conducted at the registrar's office, this being a civil ceremony only. A certificate or a licence is required. For a certificate notice must be given to the superintendent registrar of the district in which the parties live, or to two registrars if they live in separate districts. They must have resided for seven days in the district. The certificate will be issued 21 days after the notice has been given.

In the case of marriage by licence, only one of the parties need give notice to the superintendent registrar, and the licence will be issued after 24 hours have expired. In this case the party giving notice must have lived for 15 days in the district. A certificate costs a few shillings only; a licence about £2 10s.

In Scotland there are regular and irregular marriages. A regular marriage is one celebrated by a minister before two witnesses, after banns or notice to the registrar of marriages. Any acknowledgment of marriage, even without witnesses, will constitute an irregular marriage, which is just as valid as a regular one, provided that one of the parties has his or her usual place of residence in Scotland, or has resided there for at least 21 days before the marriage. It may be registered on application to a sheriff, who gives a warrant to the registrar. *See* Banns; Divorce.

MARROW. Soft tissue found in bone. Red marrow occupies that part of the bone which is made up of spongy tissue. It is very vascular, and contains certain cells, known as erythroblasts, from which the red corpuscles of the blood are developed. Yellow marrow consists chiefly of fat cells, and fills the medullary cavity in the shaft of long bones.

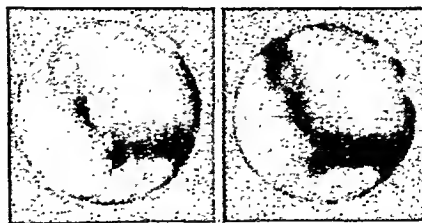
MARROW CONTROVERSY. Dispute in the Church of Scotland. Arising in 1718, it led finally to the formation of the Secession Church. It was named after The Marrow of Modern Divinity, 1644, by Edward Fisher, an English Calvinist, and was caused by the republication of this work in 1718. *See* Presbyterianism; Scotland, Church of.

MARRYAT, FREDERICK (1792-1848). British novelist and sailor. Born at Westminster, July 10, 1792, in 1806 he entered the navy and saw a great deal of service, both in European and American waters. He turned his experiences to good account in his numerous stories of nautical life. He began with *Frank Mildmay*, 1829; followed by *Newton Forster*, 1832; *Peter Simple*, 1834; *Jacob Faithful*, 1834; *Mr. Midshipman Easy*, 1836; and *Snarley Yow, or The Dog Fiend*, 1837. His later books include *Masterman Ready*, 1841; *The Settlers in Canada*, 1844; and *The Children of the New Forest*, 1847. He died Aug. 9, 1848.

His daughter, Florence Marryat (1838-99), was born at Brighton, July 9, 1838. She wrote about 70 novels. There is no *Death*, 1891; *The Risen Dead*, 1893; and *The Spirit World*, 1894, embody the results of some of her researches in spiritualism. She died Oct. 27, 1899.

MARS. In classical mythology, the Italian god of war and agriculture. He was extensively worshipped by the Romans, who claimed him as the father of their founder Romulus. The Campus Martius or field of Mars, where stood an altar to the god was the place of exercise for the youth. *See* Arès.

MARS. First of the superior planets. Its mean distance from the sun is 141,384,000 m., and its orbit is extremely eccentric. The mean diameter of the planet is 4,230 m.; its year 1.88 of our years, or 687 days; and the Martian day 24 hours, 37 minutes, 23 secs. The mass of Mars is a little more than one-tenth that of the earth (0.105), and its mean density as compared with the earth is 0.71. The tilt of Mars, or the angle between the



Mars. Photographs taken by Dr. Hale at Mount Wilson Observatory, California, showing the planet's changing appearance on a night in October, 1909

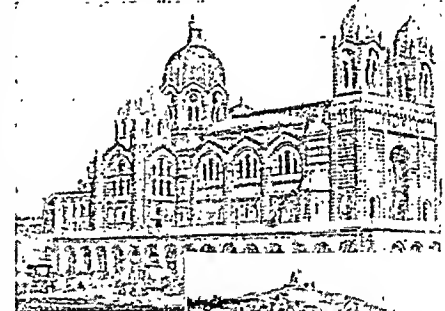
plane of the planet's equator and the plane of its orbit is 24° 52', and it has an analogous division of seasons to the earth, though they are longer. Mars has two small moons.

The planet's atmosphere is in quantity much less than that of the earth. It has clouds, which are said to lie over the so-called desert regions. Seasonal changes occur in the markings on the planet, and the darker appearance of some regions has been attributed to the presence of vegetation. In 1877 Schiaparelli discovered what he called channels, but what others called canals, extending from the darker patches on Mars over the lighter ones. P. Lowell mapped out the "canals" into an elaborate system of triangulation, which included several hundred straight lines. Some were hundreds, some thousands of miles long. *See* Astronomy; Planet.

MARSALA. Seaport of Sicily. On the W. coast, 19 m. by rly. S. of Trapani, it is the centre of a wine-producing district, and exports a large quantity of Marsala, a white, sweet, strong wine resembling sherry. It is built on the site of the ancient Lilybæum, a Carthaginian stronghold captured by the Romans, 241 B.C. Pop. 72,575.

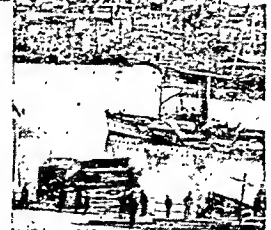
MARSDEN. Urban dist. and market town of Yorkshire (W.R.). On the Colne 7 m. W.S.W. of Huddersfield, on the L.M.S. Rly., it has manufactures of woollens, cottons, and silks. Market day, Sat. Pop. 5,901

MARSEILLAISE, LA. National hymn of France. It was written in 1792 at Strasbourg by an officer of engineers, C. J. Rouget de Lisle, and received its name from the fact



of its having been sung by a party of revolutionaries from Marseilles on their entry into Paris, and again during the attack on the Tuileries. It was prohibited under the Bourbon and Bonaparte régimes.

MARSEILLES (Fr. Marseille). City and seaport of France. It lies on the Gulf of the Lion, 42 m. by rly. W.N.W. of Toulon. Built on a ridge of hills, the city stands with the Vieux Port, or Old Harbour, stretching almost up to its principal streets. The old city still has narrow and steep streets, but Marseilles, despite its antiquity, is chiefly modern. The town is finely laid out, with broad and handsome boulevards, such as the Cannebière and the Rue Noailles. The modern cathedral, 1852-93, is a Byzantine basilica, with cupola towers, its interior ornamented with marbles and mosaics. The church of Notre Dame de la Garde, on a hill S. of the Vieux Port, is frequented by pilgrims; that of S. Victor dates chiefly from the 13th century. The Préfecture, 1867, the Palais de Justice, 1862, and



Marseilles. 1. Cathedral, built 1852-93. 2. Vieux Port or Old Harbour, which stretches up into the centre of the city

the 17th century Hôtel de Ville are among the chief public buildings. The Palais de Longchamp, a Renaissance building, erected 1862-69, contains a fine arts museum and a museum of natural history. Behind are zoological gardens, in which is the end of the Canal de Marseille, connecting with the river Durance. The city has faculties forming part of the university of Aix-Marseille.

The Vieux Port connects with the Bassin de la Joliette by a canal. The Marseilles-Rhône canal, opened in 1926, connects Geneva and Lyons with the Mediterranean, by means of a canalised Rhône and a canal to the harbour at Marseilles. The port has passenger and commercial traffic with most parts of the world. Its importance was greatly increased by the opening of the Suez Canal; the trade with French Colonies in N. Africa is of special importance. Its industries include soap making, shipbuilding, flour milling, printing, the making of chemicals, paper, bricks, and tiles.

MARSHAL (old High Ger. *mara*, war horse; *scale*, servant). Title of various high military and civil officers. In England and Scotland the marshal had important duties and became a great officer of state. In France the marshal, associated with the constable, originally had high military command. The dignity was revived by Napoleon, and again during the Great War, when it was given to Foch and others. See Earl Marshal; Field Marshal; Marischal, Earl.

MARSHALL ISLANDS. Archipelago of the N. Pacific Ocean, in Micronesia, E. of the Carolines. They are composed of the Ratak and the Ralik groups. Phosphate and copra are exported. The chief island and seat of government is Jaluit. Formerly belonging to Germany, they were seized by the Japanese early in the Great War, and are now administered under mandate by Japan. The area is 158 sq. m. Pop. 9,314 natives.

MARSHALL, SIR WILLIAM RAINE (b. 1865). British soldier. Born Oct. 29, 1865, he served on the N.W. frontier of India, 1897-98, and in 1899-1902 took part in the S. African War. When the Great War broke out Marshall was commanding a battalion in India. In 1915 he commanded the 87th brigade in Gallipoli, being soon promoted to a division. In Sept., 1916, he commanded one of the two corps in the Mesopotamia forces during the advance to Bagdad, and on Maude's death, Nov. 18, 1917, was given the supreme command. He finished the campaign with credit and success. In 1917 he was knighted. From 1920 to 1923 he was head of the Southern Command, India. He wrote *Memories of Four Fronts*, 1929.

MARSHALL HALL, SIR EDWARD (1858-1927). British lawyer. Born at Brighton, Sept. 16, 1858, he became a barrister in 1883, and began to practise on the south-eastern circuit. He made a particular reputation in criminal cases, and from about 1900 he was the foremost advocate of this kind at the bar. In 1898 he took silk, and in 1917 he was knighted. Marshall Hall was Unionist M.P. for Southport, 1900-06, and for East Toxteth division of Liverpool, 1910-16. He died Feb. 24, 1927. Consult *Life*, E. Marjoribanks, 1929.

Marshalling. In heraldry, the art of grouping and blending insignia so as to form an heraldic record. See *Heraldry*.

MARSHAL OF THE AIR. Highest rank in the British Royal Air Force. It is equivalent to field marshal in the army and admiral of the fleet in the navy. See *Air Force*, Royal.

MARSHALSEA. Old London prison. It stood opposite Maypole Alley, in Borough High Street, Southwark. Mentioned in the 14th century, in Elizabethan times it was the second of the London prisons, and in the 18th century the county gaol for felons, an admiralty gaol for pirates, and a debtors' prison. It was pulled down about 1780, and rebuilt in 1811 on ground adjoining S. George's Churchyard, and this structure was the one made famous by Dickens in *Little Dorrit*. It remained in use until the court was abolished in Dec., 1849, and was demolished in 1887, with the exception of a turret.



Marshalsea. Part of the north side of the old London prison. Left, buildings of the original prison; right, the court house, which was a later addition. From a print of 1773

MARSH CYPRESS (*Taxodium distichum*). Tall coniferous tree of the order Pinaceae. A native of N. America, it is also



Marsh Cypress, showing the knee-roots sent up to obtain oxygen

known as the bald or black cypress. The leaves are slender and yew-like, and are shed in autumn; the cones globular, of thick, shield-shaped scales. It grows in swamps, and its roots send up above the surface "knee-roots" for the purpose of supplying the roots with oxygen. These growths, which are hollow, may be more than 3 ft. in height. Correlated with them the trunk has a hollow space, into which the oxygen is conducted.

MARSH GAS, METHANE, OR FIRE-DAMP. Colourless, odourless gas. Burning with a luminous flame, and found in the free state in nature, its chemical formula is CH_4 . It is the lowest of the paraffin series of hydrocarbons and is the only one with but a single atom of carbon in the molecule. Also known as methyl hydride, it is given off by decaying vegetable matter in stagnant pools and marshes, and, when ignited, forms the will-o'-the-wisp. Large quantities, fire-damp, are formed in coal measures by slow decomposition of the coal. Marsh gas is a constituent of coal gas. See *Gas*.



Marsh Mallow, a plant that thrives near the sea

MARSH MALLOW (*Althaea officinalis*). Perennial herb of the order Malvaceae. A native of Europe, Asia, and N. Africa, it has roundish or oval thick leaves with toothed edges, and large rosy flowers. The whole

plant is downy. It grows in marshes near the sea. The hollyhock is a Chinese species.

MARSH MARIGOLD (*Caltha palustris*). Perennial herb of the order Ranunculaceae. A native of Europe, Asia, and N. America, it is also known as king-cup. It has a stout, creeping root-stock and large, kidney-shaped leaves. The flowers are exaggerated buttercups of golden yellow sepals, the petals being absent. The unopened buds are pickled and eaten as a substitute for capers.



Marsh Marigold or King-cup. Flowers and leaves

MARSTON, JOHN (c. 1575-1634). English satirist and dramatist. He wrote a number of satires, several tragedies and comedies, and became involved in the famous stago quarrel with Jonson and Dekker. He ceased writing for the stage after 1607, held the living of Christchurch, Hampshire, 1616-31, and died in London, June 25, 1634.

Marston's first work, an amatory poem, *The Metamorphosis of Pigmalion's Image*, and his series of satires, *The Scourge of Villanies*, were both published in 1598. His best plays are *The Malcontent* and *The Dutch Courtesan*. What You Will satirises pedantry. Marston collaborated with Ben Jonson and Chapman in *Eastward Hoe*. His plays were edited by A. H. Bullen in 1887.

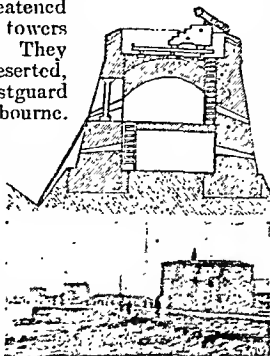
MARSTON MOOR, BATTLE OF. Fought July 2, 1644, during the English Civil War. The Scottish army had entered England and united with the parliamentary force in the north. Newcastle, the king's general, fell back on York, and that city was besieged. A royalist force under Rupert was sent to its relief. The Scots and their allies awaited the enemy on Marston Moor, between York and Knaresborough. Rupert, however, avoided them, and, entering York, urged Newcastle to fight. The parliamentarians were already in retreat, but when pursued they turned and attacked. A decisive victory was mainly due to Cromwell's *Ironsides*. See *Civil War*.

MARSUPIAL (Lat. *marsupium*, a pouch). Lowest order but one of the mammalia. They are provided with pouches in which the later stages of the development of the young take place, and are distinguished by the details of their embryology. The young are born after a short gestation. The mother places them in the abdominal pouch, which contains the teats. Here they are attached by their lips, which at this stage resemble a cylindrical sucker, and the milk is injected into their throats by muscular contraction on the part of the mother. In a few species the pouch is absent, the young being concealed by the long hair as they cling to the teats.

Marsupials are found chiefly in Australasia, the geographical isolation of which has protected them, and where they constitute the great bulk of the mammalian fauna; but they are represented in America by the opossums and a ratlike animal known as the yapook or water opossum. Carnivorous marsupials include the Tasmanian wolf, the dasyure, the bandicoots, the banded anteater, and American opossum. Herbivorous marsupials include the kangaroo and wallaby, the phalanger, the kangaroo rat, the wombat, and the koala. They vary in size. See under names of marsupials quoted.

MARTELLO TOWER. Type of building erected for coast defence. About 40 ft. high and frequently surrounded by a moat, martello towers are of solid masonry and contain rooms for a garrison of about 30. The only entrance is some 20 ft. above the ground, reached by a

ladder or drawbridge. A platform on the top served for the guns, which were protected by a parapet. Although erected at enormous cost at the time of Napoleon's threatened invasion, the towers were never used. They are now mostly deserted, or serve as coastguard stations. *See* Eastbourne.



Martello Towers on the coast at Hythe, Kent. Top, sectional diagram of internal arrangement

MARTEN

(*Mustela*). Genus of carnivorous mammals belonging to the weasel tribe. They differ from the weasels, stoats, and polecats in their larger size, longer limbs, tree-climbing habits, and in details of dentition. They have fine and valuable fur of reddish-brown colour, and a long and bushy tail. There are several species, of which only the pine marten occurs in Great Britain. This species has chocolate-brown fur, with orange chest and throat, and the edges of the ears are white. A fine specimen will measure 20 ins. in length. Formerly fairly common, persecution has now made it rare. It

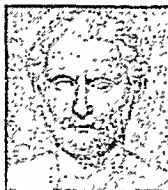


Marten. Specimen of the pine marten, *M. martes*

occurs in pine woods in N. Wales, the Lake District, the Scottish Highlands, and in the N. of Ireland, and ravages the covert and the poultry yard. It is savage in disposition.

MARTHA. New Testament character. In Luke 10 and John 11-12 she is represented as the sister of Lazarus and Mary, at whose house Jesus stayed when in Bethany. Martha was gently reproved by Christ for her over-anxious spirit of hospitality.

MARTIAL (c. 43-c. 104). Roman writer. Marcus Valerius Martialis was born at Bilbilis in Spain, and came to Rome in 66. His life was that of a parasite, as is evidenced by his fulsome flattery of his patrons, especially of the sinister emperor Domitian. The great majority of his writings are epigrams, which afford valuable information on every aspect of the life of the period.



Martial, Roman epigrammatist
From a bust

MARTIAL LAW. Term employed to indicate the suspension of the administration of normal civil law and its replacement by military authority, when such a change is rendered desirable by special circumstances, of which war and rebellion are the most usual examples. Prior to a district being placed under martial law a proclamation is published by the executive, after which the military authority specifies what, if any, special regulations will be applied, and issues orders regarding such restriction of personal and public liberty as is thought necessary. Under martial law the ordinary civil courts may be maintained co-existent with, or entirely replaced by, military tribunals. *See* Court Martial.

MARTIN. Name given to various members of the swallow tribe. Two species occur in Great Britain, the house martin and the sand martin. The former (*Chelidon urbiea*) is a familiar summer visitant. The plumage of the upper parts is black with violet reflections, and of the lower parts pure white. Its mud nest is fixed to a wall, generally under the eaves of a house. The sand martin (*Cotile riparia*) arrives in spring before the house martin, and is fairly common. It is mouse-coloured above with white below, and has a short tail. It nests in burrows in sand pits and banks of clay.



Sand Martin at the entrance to its nest
W. S. Lerridge, F.Z.S.

MARTIN (c. 316-c. 400). Saint and bishop. A native of Pannonia, he placed himself under S. Hilary of Poitiers, and after labouring as a missionary in Pannonia and being persecuted by the Arians, he founded a monastery near Poitiers, about 360, and there remained till appointed bishop of Tours in 371.

MARTIN, SIR GEORGE CLEMENT (1844-1916). British organist. Born at Lambourne, Berkshire, Sept. 11, 1844, he was appointed master of song at the choir school, S. Paul's Cathedral, in 1874, and on the retirement of Stainer in 1888 became organist to the cathedral. Elected teacher of the organ at the Royal College of Music in 1883, he was appointed to a similar post at the Royal Academy of Music in 1895, and was knighted in 1897. Martin wrote much church music. He died Feb. 23, 1916.

MARTIN, SIR THEODORE (1816-1909). British poet and biographer. Born at Edinburgh, Sept. 16, 1816, he became a solicitor there, and from 1846 in London, where he built up a large parliamentary practice. His first notable literary effort was the still popular *Bon Gaultier Ballads*, 1845, written in collaboration with Prof. Aytoun. Martin's fame as a translator, however, rests chiefly on his translations of Horace, 1882. He also translated Catullus, Heine, and Dante. In 1866, at the request of Queen Victoria, he undertook the biography of the Prince Consort, which was published in five volumes from 1875 to 1880, in which year he was made a K.C.B. Queen Victoria as I Knew Her, written for private circulation, was not published till 1908. He died Aug. 8, 1909.

MARTINEAU, JAMES (1805-1900). British theologian and philosopher. Born April 21, 1805, he was descended from a Huguenot family long settled in Norwich. Harriet Martineau was his elder sister. He went to schools in Norwich and Bristol, and later studied for the Unitarian ministry at York. In 1828 he became minister of a church in Dublin, and in 1832 took charge of one in Liverpool. In 1837 he became minister of a chapel in Little Portland St., London. Martineau also held posts in Manchester New College, both in Manchester and after its removal to London. In 1840 he was appointed professor of mental and moral philosophy, an office which he retained until he became principal in 1869. He retired from the ministry in 1872 and from the college in 1885. He died Jan. 11, 1900.

A prominent Unitarian, an impressive preacher, and essentially an ethical teacher, he



James Martineau,
British theologian
and philosopher

based his intuitionist philosophy on conceptions of God, freedom, and immortality, and won fame as a force countering the sensationalism and materialism of the utilitarians.

Martineau's sister, Harriet Martineau (1802-76), was known as a writer. She began with *Illustrations of Political Economy*, 1832, and later, after a visit to America, wrote *Society in America*. In her *History of the Peace* she embodied the views of the philosophic radicals. Her other works include an *Autobiography*. She died June 27, 1876.

MARTINI, FRIEDRICH (1832-97). Austrian inventor. Born at Mehadia, Hungary, he entered the Austrian army served in the engineers in the Italian campaign of 1859, and then settled as a civil engineer at Frauenfeld, Switzerland. Adapting his invention of a block action breech mechanism to the 7-groove, .45-in. calibre rifle of Henry, he offered the model to the British government, which adopted it in 1871 under the name of Martini-Henry rifle. *See* Rifle.

MARTINI, SIMONE (1283-1344). Italian painter, commonly but wrongly known as Simone Memmi. Born at Siena, the earliest known example of his work is the fresco of *The Enthroned Virgin and Child in the Palazzo Pubblico* at Siena painted in 1315. In 1339 he went to Avignon, where he executed frescoes, and where he met Petrarch and painted the portrait of Laura. He died at Avignon, 1344. Of his other works, the most notable are *The Annunciation in the Uffizi Gallery*, *Christ Carrying His Cross*, *Louvre*, *The Crucifixion*, *Deposition*, and *Annunciation*, *Antwerp*.

MARTINIQUE. French island in the West Indies. One of the largest of the Windward Islands, it lies between the British islands of Dominica and Santa Lucia and covers 385 sq. m. One of its volcanoes is Mt. Pelée (4,500 ft.), the scene of a disastrous eruption in 1902. The chief harbour is Fort-de-France, and the chief towns are Lamentin and Gros Marne. Pop. 234,695.

MARTINMAS. Feast of S. Martin, Nov. 11. It is a quarter day in Scotland. At Martinmas hiring fairs for servants are held in some parts of England, and the Martinmas or Martlemas ox, or Mart, was killed to be salted for winter. In Germany, goose was a Martinmas dish. The spell of fine weather sometimes occurring at Martinmas is called S. Martin's summer.

Martlet or **MERLOT.** Common charge in heraldry. It is represented as a bird without legs. It is also used as a mark of eadency (q.v.).

MARTYR (Gr. a witness). Person, especially a Christian, who suffers death in testimony to his faith. One who suffers but does not lose his life is usually known as a confessor. The first Christian martyr was Stephen.

Apparently martyrs only were at first regarded as saints. Their tombs were held in high honour. When it became possible to erect special buildings for Christian worship, they were usually built over the tombs of martyrs, and the actual tomb was often converted into an altar, or the remains of the martyr were re-interred under the altar. This practice is alluded to in Rev. 6, 9.

In the Roman Catholic Church a list of martyrs, with notices of their life and death, designed for devotional uses is known as a *martyrology*.

MARVELL, ANDREW (1621-78). English poet. He was born March 31, 1621, and educated at Hull Grammar School and Trinity College, Cambridge. After four years' continental travel he became in turn tutor, at Nun Appleton, the scene of his lyrical poems, to



Andrew Marvell,
English poet

Mary, daughter of Lord Fairfax and afterwards duchess of Buckingham, and to William Dutton, a nephew of Cromwell, at Windsor. In 1657 he was appointed Milton's colleague in the Latin secretaryship. From Jan., 1669, until his death he was M.P. for Hull. He died in London, Aug. 16, 1678. A complete edition of Marvell's works did not appear until 1776. His poems, especially those on gardens and country life, display an exquisite feeling for nature and language.

MARVEL OF PERU, OR BELLEDE NUIT (Mirabilis jalapa). Perennial herb of the order Nyctaginaceae, native of tropical America. It has tubercous roots, and the leaves are large, smooth, and without teeth. The handsome, fragrant flowers are in crowded cymes at the end of the branches, and are white, yellow, red, or variegated in colour. The corolla is five-lobed, with a long, slender tube. The flowers open in the evening, and fade next day. The fruits are nut-like. The plant is grown in Britain as an ornamental herb.

MARWICK HEAD. Headland of Mainland, one of the Orkney Islands. Here is the Kitchener Memorial Tower, unveiled in 1925, marking the place nearest to where he died.

MARX, HEINRICH KARL (1818-83). German economist and Socialist. Born at Trèves, May 5 1818, of Jewish origin, he was educated at the universities of Bonn and Berlin. He became in 1842 editor of *The Rhenish Gazette*, a journal whose advanced views led to its suppression by the authorities. From 1843-45 he was in Paris, engaged in literary work, and formed his life-long friendship with Engels (q.v.). Expelled from Paris as a dangerous person, he settled at Brussels, where with Engels, he drew up, in 1847, the manifesto of the Communist Party which may be regarded as the foundation of modern socialism. In 1848 Marx returned to Germany to take part in the revolutionary outbreaks of that year in the Rhine country, but all the movements ended in failure, and in 1849 he migrated to London, where he spent the rest of his life. In 1867 appeared the first volume of Marx's work, *Capital*, and two further volumes appeared after his death in London, March 14, 1883.

Marx was a leading exponent of what is known as the materialist conception of history, i.e. he believed that the basis of historical development is to be found above all in economic considerations. There is, he held, nothing in common between the employer and the employed, and the latter must aim at the overthrow of capitalism.

MARY (Heb. Miriam). Saint and virgin, the mother of Jesus Christ, usually called the Blessed Virgin Mary. Sister of Mary, wife of Alphaeus, she was espoused to Joseph, a carpenter, of Nazareth. Being told by the angel Gabriel that she should become the virgin mother of the Son of God, she replied: Behold the handmaid of the Lord; be it unto me according to thy word. She went with Joseph to Bethlehem, and there gave birth to Jesus Christ. According to tradition Mary died at Jerusalem, and her tomb was found vacant. See Annunciation; Assumption; Jesus Christ.

MARY (b. 1867). Queen consort of King George V. Born at Kensington Palace, May 26, 1867, she was the eldest child and only daughter of the duke of Teck and his wife.



Her majesty Queen Mary, from a photograph taken about 1923
Hornby

Mary, a daughter of the duke of Cambridge and a granddaughter of George III. The princess was baptized Victoria Mary Augusta Louise Olga Pauline Claudine Agnes, and was known in the home circle, which included three brothers, as May. The family lived mainly at Kensington until 1883, after which they made their home at White Lodge, Richmond.

In 1891 the princess Mary was betrothed to the duke of Clarence. He died, however, Jan. 14, 1892. On May 3, 1893, the engagement of the princess and his brother, the duke of York, was announced, and the marriage was celebrated, July 6, 1893, in the chapel of St. James's Palace. The duke and duchess made York House their London home and York Cottage their Norfolk one. Six children were born to them between 1894 and 1905, of whom one, John, died in 1919. On May 6, 1910, George became king, and on June 22, 1911, Mary was crowned with him. See George V.

MARY I (1516-58). Queen of England. Daughter of Henry VIII and Catherine of Aragon, she was born at Greenwich, Feb. 18, 1516. She remained faithful to the Roman Catholic religion and lived in retirement, chiefly at Hunsdon and Kenninghall, until the death of Edward VI on July 6, 1553. Despite the efforts of the duke of Northumberland to secure the succession for Lady Jane Grey Mary was proclaimed queen July 19.

Her reign was inaugurated by a series of Acts of Parliament declaring her legitimacy, restoring the Latin Mass and the celibacy of the clergy, and abolishing the title of supreme head of the Church which Henry had assumed. New bishops were consecrated, and by Dec., 1554, the reconciliation with Rome was virtually complete. Mary married Philip II of Spain, July, 1554, and the final blow in an unhappy life was the loss of Calais. Shortly afterwards Mary died, Nov. 17, 1558.

MARY II (1662-94). Queen of England. The elder daughter of James, duke of York, afterwards James II, and Anne Hyde, she was born in London, April 30, 1662. She was married in Nov., 1677, to William, prince of Orange, and went to live in Holland. In 1689 she followed William to England, and the pair were proclaimed king and queen. On Dec. 28, 1694, Mary died of smallpox. She was childless.



Mary II
Queen of England
After Wissing

MARY (1542-87). Queen of Scots. Born at Linlithgow, Dec. 8, 1542, five days before the death of her father, James V, she then

became queen of Scotland. She was brought up at the French court under the charge of the Guises, the kinsfolk of her mother, Mary of Lorraine. In 1558 she was married to the dauphin Francis, who succeeded to the French throne in 1559, but died next year.

In 1561 Mary returned from France to a Scotland dominated by John Knox. She married her cousin Henry Stuart Lord Darnley. July 29, 1565. Finding Darnley a broken reed, she gave all her confidence to her secretary, David Rizzio. The nobles made ready use of Darnley's jealousy; and on March 9, 1566, Darnley and his fellow-conspirators murdered the secretary in Holyrood Palace. Mary never forgave her husband, although there was a formal reconciliation after the birth, June 19, 1566, of her child, who afterwards became James VI. On Feb. 9, 1567, when Darnley was lying ill at a house called Kirk o' Field, near Edinburgh, the house was blown up.

On April 24, Bothwell, one of Darnley's murderers, captured the queen after a formal show of resistance, and on May 15, after he had divorced his wife, Mary married him. The nobles rose in arms. At Carberry Hill, June 15, Bothwell escaped and fled the country, while Mary surrendered to the lords, by whom she was imprisoned in Loch Leven Castle and compelled to abdicate in favour of James VI on July 24, 1567. On May 2, 1568, Mary escaped from Loch Leven. Her few followers were defeated at Langside on May 13 by the forces of the regent Moray, and Mary made her way to England. There she was a prisoner for 18 years. At length she was brought to trial, was found guilty on Oct. 25, 1586, and parliament demanded her execution. Elizabeth, after efforts at evasion, sealed the death warrant, and on Feb. 8, 1587, Mary was beheaded at Fotheringhay. See Holyrood.

MARY (b. 1897). British princess. Only daughter of King George V and Queen Mary, she was born at York Cottage, Sandringham. April 25, 1897, and christened Victoria Alexandra Alice Mary. Educated mainly at home, the princess went through a course of training in nursing at the Hospital for Sick Children, London. On Feb. 28, 1922, she married Viscount Lascelles, afterwards earl of Harewood (q.v.). Sons were born Feb. 7, 1923, and Aug. 21, 1924.

MARYBOROUGH. Co. town of Leix (Queen's County), Irish Free State. It stands on a tributary of the Barrow, 51 m. from Dublin, with a station on the Gt. Southern Rlys. The industries are connected with agriculture. Pop. 3,374.

There are two Maryboroughs in Australia. One is a mining town of Victoria, 118 m. from Melbourne. The other is a seaport of Queensland.

MARYLAND. State of the U.S.A., one of the thirteen original states. The area is 12,325 sq. m., and it is divided into two parts by Chesapeake Bay. In the S. it has a coastline on the Atlantic, but farther N. Delaware divides it from the sea. Another boundary



Mary Queen of Scots
From a painting at Hardwick
Hall made in 1578, when the
queen was in captivity in
Sheffield Castle



Mary I,
Queen of England
After Holbein



Princess Mary,
Countess of Harewood
Spearhead

is the estuary of the Potomac. In the E. the surface is low and marshy, but to the W. it is hilly. Wheat, maize, potatoes, fruit, and tobacco are cultivated. The capital is Annapolis, but Baltimore (q.v.) is much the largest place. The colony of Maryland, named after Henrietta Maria, the queen of Charles I was founded in 1634. Pop 1 616,000.

MARYLEBONE. Borough of the eo. of London. It includes the district of St. John's Wood; the greater part of Regent's Park; Cavendish, Portman, Manchester, and other squares; Harley Street; Lord's cricket ground; Lisson Grove; a terminus of the L.N.E. Ry.; and the Baker Street station on the Met. Ry. The name of the borough is a corruption of S. Mary's-le-bourne. The parish church of S. Mary contains an altar-piece of the Holy Family by Benjamin West. A new town hall was opened in 1916. Two members are returned to parliament. Pop. 104,222.

The Marylebone Cricket Club is regarded as the governing body of the game and known as the M.C.C. It dates from 1787, when some members of the White Conduit club began to play on Lord's ground in Dorset Square, and called themselves the Marylebone club. In 1788 the club revised the rules of cricket, and since then it has been the controlling body. See Cricket; Lord's Cricket Ground.

MARY MAGDALENE. Name of the woman mentioned with others in the N.T. as being healed of evil spirits and ministering to Christ of her substance. She was present at the Crucifixion, and it was to her that Jesus is said to have first appeared after the Resurrection. The name is generally understood as indicating that she was a native of Magdala, the modern El Mejdel, on the W. shore of the Sea of Galilee. Tradition identified Mary of Magdala with the unnamed penitent of S. Luke who anointed Christ with the spikenard.

MARYPORT. Seaport, market town, and urban dist. of Cumberland. It stands at the mouth of the river Ellen, 28 m. from Carlisle, with a station on the L.M.S. Ry. The principal buildings include the churches of S. Mary and Christ Church. There is a shipping trade, for which there is good accommodation. Originally known as Ellenfoot, the town was renamed Maryport in 1750 because Mary Queen of Scots landed here in 1568. Market day, Fri. Pop. 11,100.

MASACCIO (1401-c. 1428). Florentine painter. Born at Castel San Giovanni di Valdarno, Dec. 21, 1401, he was named Tommaso Guidi, but is invariably known by his nickname Masaccio, meaning loutish Tom. In 1417, commissioned to decorate a chapel for Cardinal San Clemente, he painted a Crucifixion and scenes from the lives of SS. Catherine and Clement. Between 1423 and 1428 he painted 12 frescoes in the Brancacci Chapel in the Carmine, representing scenes from the Bible. He died in Rome about 1428. His Madonna and Child with Angels is in the National Gallery, London.



T. G. Masaryk,
President of
Czechoslovakia

MASARYK, THOMAS GARRIGUE (b 1850). First president of the republic of Czechoslovakia. He was born Mar. 7, 1850, at Hodonin, Moravia, his father being a Moravian coachman, and his mother of mixed Slovakian-German descent. Employed by a Vienna locksmith, and then as a blacksmith in Moravia, he was enabled to continue his studies at Brno, at Vienna, where he graduated, and at Leipzig. In 1882 he became professor at Prague University. In 1891 he was elected a member of the Austrian Reichsrath;

but after two years he resigned, to be again elected in 1907.

Shortly after the Great War broke out Masaryk escaped from Austria, and worked unceasingly for his country. In 1915 he was appointed professor of Slavic studies in King's College, London; and later was one of those mainly instrumental in winning recognition from the Allies for Czechoslovakia. When the Czechoslovak republic was formed, Masaryk was called to be president. His position was confirmed on May 27, 1920, and in 1930 he was still in office.

MASCAGNI, PIETRO (b. 1863). Italian composer. Born at Leghorn, Dec. 7, 1863, the son of a baker, he studied music there and at Milan, producing compositions when only 16. In 1890 Mascagni leapt suddenly into fame by the production at Rome of the opera *Cavalleria Rusticana*. In 1895 he was made director of the Conservatoire at Pesaro, and after a tour in the U.S.A. he became a teacher in Rome. His other operas include *L'Amico Fritz*, 1891; *Iris*, 1898; *Edward and Parisina*, 1913



Pietro Mascagni,
Italian composer

MASEFIELD, JOHN EDWARD (b. 1878). British poet and dramatist. Born at Ledbury, June 1, 1878, he was the son of a solicitor. His *Salt-water Ballads* were published in 1902.

A *Mainsail Haul* 1905, and his edition of *Dampier's Voyages* in 1906. Many of his earlier poems, as seen in the volumes of 1902-5, and in the *Ballads and Poems*, 1910, were marked by the bold rhythms of the Kipling school. In 1911 came the first of his long narrative poems, *The Everlasting Mercy*. It was followed by similar works, unequal but vivid in style: *The Widow in the Bye-Street*, 1912; *The Daffodil Fields* 1913; and *Dauber*, 1913. *Reynard the Fox*, 1919, and *Right Royal*, 1920, are animated pictures of the sporting life of the English shire.

Masefield's plays include *The Tragedy of Nan*, a dialect play, 1909; *Pompey the Great*, 1910; *Philip the King*, 1914; *The Faithful*, 1915; *Good Friday*, 1916; *The Trial of Jesus*, 1925; and *Tristan and Isolde*, 1927.

In June, 1928, his play *The Coming of Christ* was performed on the chancel steps of Canterbury Cathedral. Among his novels are *Captain Margaret*, 1908; *Multitude and Solitude*, 1909; *Lost Endeavour*, 1910; *Sard Harker*, 1924; *Odtaa*, 1926; *The Hawbucks*, 1929; and a collection of sea stories, *A Tarpaulin Muster*, 1907. Among his other writings are a study of *Shakespeare*, 1911; *The Old Front Line* 1917; and *Gallipoli*. In 1930 he succeeded R. Bridges (q.v.) as poet laureate.

MASHAM. Urban dist. and market town of Yorkshire (N.R.). It stands on the Ure, 8 m. from Ripon, on the L.N.E.R. The church of S. Mary the Virgin is partly Norman. There is a trade in agricultural produce. Market day, Wed. Pop. 2,047.

MASHONALAND. District of S. Africa, now part of S. Rhodesia (q.v.). It is named after the Mashonas. Lying to the N.E. of Matabeleland, it is a mountainous area, but is rich in minerals, and contains excellent pasture land. Salisbury is the chief town; others are Hartley, Gatooma, Umtali, and Victoria. Mashonaland was included in the grant made in 1889 to the British South Africa Co., and in June, 1890, a force was sent to take possession of it. In 1893 the inroads of the warlike Matabele, long the enemies of the more peaceful Mashonas, led to the Matabele War. In June, 1896, the Mashonas rebelled, and for over a year the rising continued, but in the end it was put down.

MASK (Fr. masque, vizor). Covering for the face, assumed either to conceal the features or to represent a character. The hideous masks ceremonially used by many savage peoples are intended to ward off demons, to express totemistic ideas, and to terrify enemies. In the presentation of the Greek drama every actor wore a mask suited to the character he personified (see illus. p. 437). They were made of bronze or copper, enamelled or painted, and added power to the voice.

In sculpture the word mask is used for a representation of the human face in gargoyles, on tiles fixed at the end of cornices and caves, or in the keystone of an arch, and for a cast of a face taken after death. For protective purposes masks have been developed into various forms, e.g. the inhalers used by firemen, miners, and divers when working in smoke or vitiated air or under water, and the gas masks worn by troops. See illus. below; also p. 642.

MASK. Lough or lake of the Irish Free State. It forms part of the boundary between counties Galway and Mayo and contains about 20 islands. Its length is 12 m., while its breadth varies from 2 to 4 m.

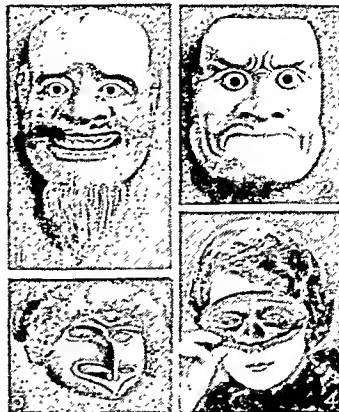
MASKELYNE, JOHN NEVIL (1839-1917). British entertainer and illusionist. Born at Cheltenham, Dec. 22, 1839, he was apprenticed to a watchmaker, but studied conjuring in his spare moments, and began entertaining at the age of 16. In 1865 he entered into partnership with Cooke, exposed the mysteries of the Davenport spiritualistic quacks, and in 1873 moved to London. The partners took the Egyptian Hall, Piccadilly, London, moving to St. George's Hall in 1905. Maskelyne died May 18, 1917. The firm of Maskelyne and Cooke became later Maskelyne and Devant. After the retirement of David Devant it was known simply as Maskelyne's.

MASKELYNE, NEVIL (1732-1811). British astronomer. Born Oct. 6, 1732, he early took an interest in astronomy. In 1761 he observed the transit of Venus from St. Helena on behalf of the Royal Society. He was appointed astronomer royal 1765, and founded the *Nautical Almanac* the following year. He also compiled a valuable catalogue of fundamental stars, and introduced the important innovation of the systematic publication of results of Greenwich observatory. Maskelyne, who took orders, was rector of Shroavardine, 1775-82, and of North Runciton, Norfolk, 1782-1811. He died Feb. 9, 1811.

MASON, ALFRED EDWARD WOODLEY (b. 1865). British novelist. Born May 7, 1865, his name was made with *The Courtship of Morrice Buckler*, 1896, followed by *Miranda of the Balcony*, 1899; *Clementina*, 1901; *The*



John Masefield,
British poet



Mask. 1 and 2. Japanese theatrical masks of carved and lacquered wood. 3. Dancing mask, Puget Sound. 4. Modern carnival mask. See above

Four Feathers, 1902; The Truants, 1904; At the Villa Rose, 1910; The Summons, 1920; The House of the Arrow, 1924; No Other Tiger, 1927; The Prisoner in the Opal, 1929; and The Dean's Elbow, 1930. With Andrew Lang he wrote Parson Kelly. At The Villa Rose and Miranda have been dramatised; while The Witness for the Defence was written for the stage and then turned into a novel. Mason was Liberal M.P. for Coventry from 1906 until 1910.



A. E. W. Mason,
British novelist
Russell

MASON, GEORGE HEMINO (1818-72). British painter. Born at Stoke-upon-Trent, March 11, 1818, he settled in Rome in 1845, where he painted portraits. Many of his pictures are scenes in the Campagna, such as Ploughing in the Campagna, and In the Salt Marshes, 1856. In 1858 he returned to England. Of his English period, the chief pictures are Wind on the Wold, The Cast Shoe, both in the Tate Gallery, The End of the Day, and The Harvest Moon. He exhibited at the R.A., 1857-72, was elected A.R.A., 1869, and died Oct. 22, 1872.

MASON, SIR JOSIAH (1795-1881). British manufacturer and philanthropist. Born Feb. 23, 1795, the son of an artisan at Kidderminster, he became a manufacturer of hardware, soon devoting himself mainly to the making of pens, which bore the name of James Perry, the London stationer who placed them on the market. Mason became interested in other industries in Birmingham. In 1872 he was knighted, and he died June 16, 1881. He founded Mason College, Birmingham, and an orphanage at Erdington.

MASPERO, GASTON CAMILLE CHARLES (1846-1916). French Egyptologist. Born in Paris, June 23, 1846, he became professor of Egyptology there in 1873. He succeeded A. Mariette as director-general of excavations in Egypt, 1881-86, signalling this appointment by recovering the royal mummies at Deir el-Bahri, 1881. His translated works include Egyptian Archaeology, 5th ed. 1902; The Ancient Peoples of the Classic East, 1894-1900; and Art in Egypt, 1912. He died in Paris, June 30, 1916.

MASQUE (Fr. mask). Theatrical entertainment of an allegorical nature, usually written for a particular occasion, and distinguished chiefly by the splendour of the spectacular effects provided by machinist, scene painter, and costumer, to embellish the poetical conceits of the author. As a fashionable amusement in England the masque, introduced, it is said, from Italy in 1512, had its greatest vogue in the time of James I and Charles I. Ben Jonson was the author of many masques, pageants, and court entertainments. The most beautiful example is Milton's Comus, presented at Ludlow in 1634.

MASS (Lat. missa, dismissed.) Roman Catholic name for the Eucharist. It is regarded as a service of adoration, praise, and thanksgiving, as a sacrifice of propitiation for sin, and as a means of grace. The doctrine of the Mass implies that Christ, in the integrity of His Person, human and divine, in or under the form of a wheat cake and a cup of wine, is sacrificed by a priest as a propitiation of God and in expiation of sin. The twelve Masses include High Mass, celebrated with incense, music, the assistance of deacon, subdeacon, etc., usually on Sundays and great feasts; Low Mass, said by the priest without music; and the Requiem Mass, which is said for the dead. See Communion, Holy; Eucharist; Transubstantiation.

MASSACHUSETTS. State of the U.S.A., one of the 13 original states of the Union. Its area is 8,266 sq. m., in which is included the islands of Nantucket and Martha's Vineyard. The Cape Cod peninsula is a curiously shaped extension. Massachusetts Bay is a broad inlet on the E. coast. The surface rises from the low coastal plain to heights of over 3,500 ft. The state has a number of lakes, its water area being 220 sq. m. Hay, potatoes, and maize are the chief crops. Tobacco is grown, and much land is under fruit, including cranberries. The fisheries are important. Boston is the capital. Harvard is in the state, as are many places associated with New England's early days. Pop. 4,290,000.

MASSAGE. Method of curing various muscular, nervous, and vascular maladies by rubbing, stroking, kneading, and otherwise treating the muscles with the hand. The four principal actions in massage are termed pétrissage, effleurage, friction, and tapotement. Pétrissage or kneading is done by pressing the palm of the hand into the muscles, and grasping, kneading, rolling, and squeezing them by the thumb and fingers. Effleurage, or stroking, should be done with the palm of the hand, which at the end of a stroke should glide back to the starting point. Friction is a circular movement done with the finger tips or palm of the hand. Tapotement is done by the hands swinging from the wrists, and this movement should be light, sharp, springy, and very rapid.

Another division of the movements in massage is associated with the Swede, Peter Henry Ling. He divided them into three: active, passive, and resistive. Passive movements are done by the operator, active movements by the patient himself. Resistive movements are done while the patient resists, or by the patient while resistance is supplied by the operator. These movements increase circulation.

The National Hospital, Queen's Square, London, W.C., gives a recognized certificate. Students from other hospitals and schools must satisfy the examiners of the Incorporated Society of Trained Masseuses.

MASSAWA OR MASSOWAH. Town on a coral island in the Red Sea. It is off the coast of the Italian colony of Eritrea, of which it is the chief port, and is joined to the coast by a causeway and connected with Asmara by rly. It is the centre of a pearl-fishing industry. There is a wireless station. Pop. 12,275.

MASSÉNA, ANDRÉ (1758-1817). French soldier. Born at Nice, May 6, 1758, he served first in the Sardinian army. Joining the forces of the French Republic, he gained rapid promotion and became a general in Dec., 1793. Appointed a marshal in 1804, he rendered brilliant services in the Wagram campaign of 1809, and was created Duke of Rivoli and prince of Essling by Napoleon. In 1810 he was given the command against Wellington in the Peninsular War. On May 6, 1811, he was defeated at Fuentes d'Onoro, and was superseded. On Napoleon's abdication, April, 1814, Masséna gave his adherence to the restored Bourbons. He died April 4, 1817.



André Masséna,
French soldier

MASSNET, JULES ÉMILE FRÉDÉRIC (1842-1912). French composer. Born May 12, 1842, he studied at the Paris Conservatoire, and became professor of composition, his talents winning for him also membership of the Academy and the Legion of Honour. His first opera was produced in 1867, and for the next forty years he turned out a succession of operas, oratorios, overtures, orchestral suites,

etc. The most successful of his operas are Le Cid, Manon, Thaïs, and Le Roi de Lahore.

He died Aug. 14, 1912.



J. E. F. Massenet,
French composer

MASSEY, WILLIAM FERGUSON (1856-1925). New Zealand statesman. Born at Limavady, co. Derry, Ireland, March 26, 1856, he went in 1870 to New Zealand, where he took up farming. He was elected to parliament in 1894, becoming leader of the opposition in 1903. In 1912 he became prime

minister and minister of lands and labour. He was a member of the Imperial war cabinet, 1917-18, represented New Zealand at the peace conference in Paris, 1919, and attended the Empire conference which was held in 1921. He died May 10, 1925.

MASSICOT. Native lead·monoxide, PbO. It is brownish yellow in colour, is found massive, and is also known as lead ochre. Massicot is more usually prepared by heating lead or white lead in the air to a temperature below the fusing point of the oxide. It is largely used in the manufacture of red lead or minimum. See Lead; Litharge.

MASSILLON, JEAN BAPTISTE (1663-1742). French prelate. Born at Hyères, June 24, 1663, the son of a notary, he became an Oratorian in 1681. He was bishop of Clermont from 1717 until his death, Sept. 18, 1742. Regarded as the greatest preacher of France, his character was as above suspicion as it was uncompromising. Unpopular at court, he pronounced the funeral oration over Louis XIV, and preached 10 Lenten sermons (Le Petit Carême) before Louis XV in 1718, urging upon that monarch the need of morality and just government.

MASSINGER, PHILIP (1583-1640). English dramatist. Born at Salisbury in Nov., 1583, he lived by his pen in London from 1606 till his death, March, 1640. A voluminous

writer, and collaborator with Fletcher, Field and Dekker, he is now known to have been part author of plays usually attributed to Beaumont and Fletcher. Fifteen of the plays which he wrote independently are extant. A master of plot and also of construction, his plays held the stage till the final quarter of the 19th century. Of his works, The Bondman, The Maid of Honour, The Emperor of the East, and Believe As You List, are replete with contemporary political allusions. His masterpiece is A New Way to Pay Old Debts.



Philip Massinger,
English dramatist

MASSINGHAM, HENRY WILLIAM (1860-1924). British journalist. Born at Old Catton, Norwich, he was for a time on the staff of The Norfolk News and The Daily Press, Norwich. In London he was editor of the National Press Agency, succeeded T. P. O'Connor as editor of The Star, and was editor of The Daily Chronicle, 1895-99. He was London editor of The Manchester Guardian, 1899-1901, parliamentary representative of The Daily News, 1901-7, and editor of The Nation until his death, Aug. 27, 1924.

MASSON, DAVID (1822-1907). Scottish essayist and biographer. Born at Aberdeen, Dec. 2, 1822, he edited The Banner, an Aberdeen weekly paper, 1841-42, and in 1844-47 was on the literary staff of W. and R. Chambers. He was professor of English literature, University College, London, 1852-65, and of rhetoric and English literature at

Edinburgh University, 1865-95. He became historiographer royal for Scotland in 1893. He died at Edinburgh, Oct. 6, 1907.

Masson's numerous works include a monumental life of John Milton, 6 vols., 1859-80. Notable also are his British Novelists and Their Styles, 1859; Life of Drummond of Hawthornden, 1873; and Life of De Quincey, 1878. He was the first editor of Macmillan's Magazine, 1859-67.

MASSYS, QUINTEN, OR MATSYS, QUENTIN (1466-1530). Dutch painter. Born at Antwerp or at Louvain, the main early influence was that of Dierick Bouts. The chief pictures of his early period are Madonna and Child (Brussels), S. Christopher, and Virgin at Prayer (Antwerp). The Crucifixion in the National Gallery, London, is one of many Calvary pictures. Of his later works, The Magdalen and Madonna Enthroned are noteworthy. He painted genre pictures in a satirical vein, e.g. a Money-changer and his Wife, 1518, in the Louvre.

MAST. In sailing vessels, the spar set upright from the keel-plate, on which sail is set. Built-up masts comprise two or more sections, the upper of which may be lowered when reducing the amount of sail. From the deck upwards the sections are termed the lower mast, topmast, top-gallant mast, and royal mast. Pole masts are usually constructed in a single piece. Metal masts are frequently hollow, internal bracing being provided to give the necessary strength. Where a ship has more than one mast a distinctive name is given to each, e.g. foremast, mainmast, and mizzen or mizzenmast. There are also mooring masts for airships. See Aerodrome; Airship, illus. p. 39; Mooring Mast; Ship.

MASTABA (Arab. bench). Early form of Egyptian tomb. Rectangular and flat-roofed, with sloping sides, it was faced at first with sun-dried brick, and afterwards with limestone. Representing the earliest elaboration under the Old Kingdom of the pre-dynastic pit-tomb, mastabas are best preserved at Dabshur and Sakkara.

MASTER (Lat. magister, master). Term for a man exercising control, authority, or headship, especially one empowered to direct or teach. The eldest son of certain Scottish viscounts and barons is known as master, e.g. Master of Falkland, Viscount Falkland's heir. The British royal household has its master of the household, master of the horse, master of the ceremonies, and master of the king's music. The commander of a merchant ship is the master, originally master-mariner or sailing-master, by courtesy called captain. In the British Navy the head of the police aboard a warship is called the master-at-arms. The term "old masters" is applied to the great painters from the 13th to the 17th centuries approximately, and also to their works. Master is the title of a university degree.

Master is the title of various legal officials in England. The master of the faculties is superintendent of the court of faculties, a tribunal belonging to the archbishop. Masters of the supreme court are officials with duties partly judicial, partly administrative. There are also masters in the chancery division, that title having been substituted in 1897 for the former title of chief clerk. The Master of the Rolls now presides over the court of appeal, and ranks after the lord chief justice. He has charge of the public records, and is chairman of the Historical Manuscripts Commission.

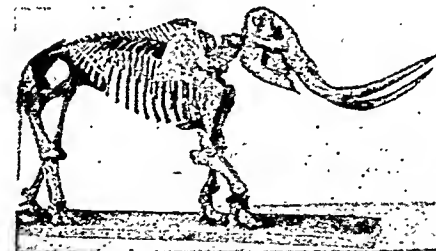
The legal relation of master and servant is created where one person hires the services of another, either generally or for a fixed period, in such a way that the servant is bound to obey all reasonable commands of the master; and, moreover, can be told, not only what work to do, but how to do it.

MASTERTON. Town of North Island, New Zealand, 67 m. N. of Wellington by rly. It is the centre of one of the finest sheep-rearing areas in the world. Pop. 5,781.

MASTIC. Variety of gum resin, used in the East as a chewing gum. It is a product of the mastic or lentisk tree, and is extensively used in the manufacture of varnishes for map making, and in dentistry as a tooth stopping. The lentisk plant is indigenous to the Mediterranean coast region, and various plants yielding a similar substance are found in S. Africa, India, and S. America.

MASTIFF. Large type of dog, now mainly kept as a watchdog. The chief breeds are the Asiatic, of which the Tihetan is the best known type, the English, and the Bordeaux. The modern English mastiff is a large and powerful animal, possessing a keen scent, with something of the bulldog about its head, due to crossing with that breed. Its temper is variable, but it is usually docile with those whom it knows. The mastiff usually stands about 30 ins. high at the shoulder.

MASTODON. Fossil elephant. The mastodon, so called from the conical tubercles or projections on its teeth, was of a more primitive type than the mammoth, and its remains are more widely scattered. The animal lived in the Miocene age and died out during the Pleistocene. The American mastodon strongly resembled the modern Indian elephant both in general size and in shape of tusks. The animal was covered with a thick, woolly brown hair much like the mammoth. See Elephant; Mammoth.



Mastodon. Skeleton of American mastodon found in Northern Yukon.

Natural History Museum, New York

MASTOID PROCESS. Bony protuberance immediately behind the lower part of the ear. The interior contains a number of hollow spaces, lined with mucous membrane, which communicate with the tympanic cavity of the ear. Suppuration in the ear may spread to the interior of the mastoid bone, producing the condition known as mastoiditis. See Ear.

MASULIPATAM. Port of India, in Madras. In the Kistna dist., it lies N. of the Kistna delta, at the end of a branch rly. from Bezvada. Printed cottons, canopies, prayer cloths, etc., are manufactured, but this industry, like that of carpet weaving, is decadent. An English settlement was founded here in 1611. From 1686-90 it was held by the Dutch, and in 1750 was given to the French by the nizam of Hyderabad. In 1758 Clive sent a force against it, and under Col. Forde it was taken in April, its capture having im-

portant results in extending the British power in India. Pop. 43,940.

MASURIAN LAKES. Network of lakes, marshes, and watercourses in the district inhabited by the Masurians, a Polish people in the S.W. of East Prussia. Important fighting took place in this region between the Russians and Germans in the Great War. What is often described as the first battle took place Sept. 5-15, 1914, when Hindenburg immediately after Tannenberg, attempted to crush Rennenkampf's retreating army. The second battle was fought between the Germans and the Russians in Feb., 1915.

MASURIUM (Ma). Substance believed to be a chemical element with the atomic number 43. It was discovered, together with rhenium, in the mineral columbite by Noddack and Tacke, in 1925. See Rhenium.

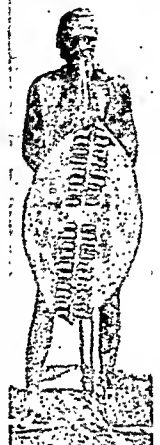
MATABELELAND. District of S. Africa, now part of S. Rhodesia. Named after the Matabele, it stretches from the Transvaal to Mashonaland, is rich in minerals, and has much fertile land. The chief towns are Bulawayo, Gwelo, and Selukwe.

Matabeleland was included in the grant made to the British S. Africa Co in 1889. The first settlements made were in Mashonaland, and against them the Matabele directed their raids. In reply Bulawayo was entered, Lobengula fled, and the Matabele were crushed, their country becoming part of the territory under the chartered company. In March, 1896, the Matabele rose in rebellion, seizing the opportunity offered by the Jameson Raid. The struggle was ended after a meeting between Rhodes and the chiefs of the tribe in the Matopopo Hills in Sept. The country then settled down as part of Rhodesia. See Rhodesia.

MATADOR (Sp. killer). Highest rank among professional bull-fighters. In the last stage of the fight the matador is the man who actually kills the bull. See Bull-Fighting.

MATANZAS. City and seaport of Cuba. It lies at the head of Matanzas Bay, on the N. coast, 55 m. by rly. E. of Havana. It has a well-sheltered but partly silted harbour. Matanzas has petroleum and sugar refineries, distilleries, rly. workshops, and manufactures of leather, hoots and shoes, and cord, and its chief exports are sugar, rum, and molasses. The city, which dates from 1693, consists of three portions separated by the rivers San Juan and Yumuri. Among its larger buildings are the Government building, theatre, casino, and lyceum. Pop. 66,767.

MATCH. Word applied to a small piece of wood, waxed thread, or other material, tipped with a substance which can be ignited by friction. All matches which can be struck on any rough surface have as their basic ingredients one substance rich in oxygen and another which easily combines with oxygen, the reaction taking place with the evolution of heat on the application of friction. Potassium



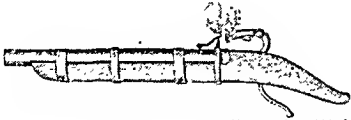
Matabele warrior



Matador in the costume of the bull-ring

chlorate, and phosphorus are examples. Sesquisulphide of phosphorus is now extensively used. In the safety match the phosphorus is separated from the composition of the match and transferred to the friction surface on the box.

MATCH DUTY In 1916 a duty was placed on matches. This varies according to the size of the boxes or containers. The amount received from the duty in 1929 was £1,880,623.



Matchlock. A piece of smouldering match was carried on the barrel to ignite the match on the serpentine when a shot was about to be fired

MATCHLOCK. Hand gun in which the charge is fired by the application of a smouldering match to the touch-hole by a mechanical device actuated by moving a lever. The matchlock was invented about 1460. In its earliest form it consisted of a serpentine (a curved lever) pivoted in a hole in the stock, which carried the burning match. It was so balanced that the match was held away from the touch-hole until the end of the lever under the stock was pressed, when the glowing match was pushed into the flashpan and the charge fired. See Flint; Gun; Musket.

MATE. Literally a companion or equal. In the British navy the rank of mate was held until 1861 by officers immediately junior to lieutenants, but in that year the rank of sub-lieutenant was substituted for it. In 1913 the title was again revived. In the merchant service a mate is relatively a much more important officer, the first mate, or first officer, of a ship ranking next after the captain.

MATÉ OR PARAGUAY TEA. Dried and powdered leaves of *Ilex paraguayensis*, a tree allied to the holly, infused and sweetened with sugar. It is sucked up through a special tube which strains off the leaf-particles, is aromatic and somewhat bitter, and has refreshing and restorative effects. Large quantities of maté are consumed in Argentina and Brazil. The tree is allied to the holly. See *Ilex*.

MATERIALISM. Theory that regards matter as the prime cause of everything, even of mental processes such as thought and consciousness. According to the materialists, all knowledge has its origin in sensation, merely consisting of transformed sensations: intellectual life is nothing but the result of mechanical combinations and interactions of matter. The soul itself is only a phenomenon of the brain; when the latter perishes, the soul perishes with it. Everything takes place according to certain, fixed unalterable laws.



Cotton Mather, American divine

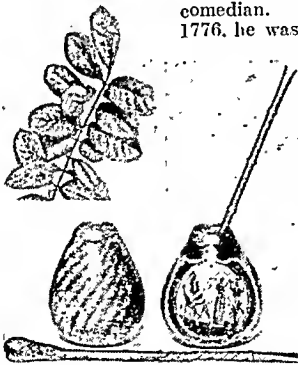
MATHER, COTTON (1663-1728). American divine. Member of a famous Puritan family, and grandson on his mother's side of John Cotton, he was born at Boston, Mass., Feb. 12, 1663, and educated at Harvard. He took his

B.A. degree at the age of 15, and becoming with his father, Increase Mather, co-pastor of the North Church in 1684, remained associated with it until his death, Feb. 13, 1728. Eminent both as preacher and pastor, he published some 400 works, and left voluminous MSS., including a treatise on medicine and a Scripture commentary in six large volumes.

MATHER, INCREASE (1639-1723). American divine. Born at Dorchester, Massachusetts, June 21, 1639, he was the youngest son of Richard Mather (1596-1669), who, suspended for nonconformity, left Lancashire for New England in 1635. Increase became a preacher in Devonshire and Guernsey, but refusing to conform at the Restoration, went to Boston, where he was ordained pastor of the North Church, June 6, 1664. He retained this office until his death, Aug. 23, 1723, and was also president of Harvard, 1685-1701. He secured an enlarged charter for Massachusetts from William III.

MATHEW, THEOBALD (1790-1856). Irish temperance advocate. Born at Thomastown, near Cashel, Oct. 10, 1790, he was ordained in 1814, and given charge of a little chapel in a poor part of Cork. For 24 years he laboured to secure education and the means of civilization for the poverty-stricken people, and in 1838 began to exercise his remarkable magnetic influence in the cause of total abstinence. Father Mathew visited London in 1843 and America in 1849, drawing crowds of converts to total abstinence everywhere. He died at Queenstown, Dec. 8, 1856.

MATHEWS, CHARLES (1776-1835). British comedian. Born in London, June 28, 1776, he was engaged by the Theatre Royal, Dublin, in 1794, coming to London in 1803. Among the parts which he played was that of Sir Pretful Plagiary in *The Critic*, a performance which Leigh Hunt regarded as perfect. Mathews' greatest success, however, was in the rôle of entertainer, in which capacity he became immensely popular on both sides of the Atlantic. He died at Plymouth, June 28, 1835.



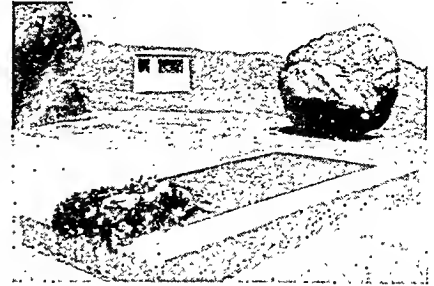
Maté. Gourds for holding the liquid tea, and bombillas through which it is sipped. Top, left, the leaves of the plant

MATILDA OR MAUD (1102-67). Queen of England and empress. Daughter of Henry I of England, she married the emperor Henry V in 1114. On the death of her husband in 1125 she returned to England and, being the only surviving child of Henry, was proclaimed heiress to the throne. In 1128 she married Geoffrey of Anjou, and with his aid defeated her rival Stephen at Lincoln, 1141, and was crowned in London, but finding it impossible to make her claim effective, Matilda returned to Normandy, leaving her son, who afterwards became king as Henry II, to contest his claim to the crown. She died Sept. 10, 1167. See Stephen.

MATINS OR MATTINS. Ancient name for early morning prayers. The existing service is formed from the ancient services for matins, lauds, and prime. The hour of matins has varied, early custom favouring 6 or 7 a.m.

MATLOCK. Urban district of Derbyshire. Divided into Matlock Bridge, by the river, and Matlock Bank, on the hillside, it stands on the Derwent, 17 m. from Derby, with a station on the L.M.S. Rly. The chief

industries are the making and bleaching of cotton, corn and paper mills. Matlock Bath, a mile to the S., is famous for its medicinal waters, discovered 1698. It has a separate station on the L.M.S. Rly. The Matlocks are famous for their beautiful surroundings. These include High Tor and other rocks along the Derwent. Pop. 10,545.



Matoppos Hills, Matabeland. Grave of Cecil Rhodes; in the background is the memorial to the British who fell fighting against the Matabele, Dec. 4, 1893

MATOPPO HILLS. Range of hills in S. Rhodesia about 18 m. S.E. of Bulawayo. The district covers about 1,040 sq. m. It contains the graves of Cecil Rhodes and Sir Starr Jameson, as well as the Matoppos Dam, built to irrigate the surrounding country. The cemetery here was consecrated by Rhodes to those who deserved well of their country.

MATRICULATION (Lat. *matriçula*, public register). Process of admission to the membership of a university or college. The formal enrolment is usually preceded by an examination varying in severity. The matriculation examination of London University is the best known. It is taken by a large number of candidates who do not intend to proceed with university studies, because success therein is advantageous to those entering certain professions. At Oxford the equivalent examination is known as *responsions*, or popularly as *snalls*. At Cambridge it is known as the previous examination, or *little-go*.



Charles Mathews, British comedian

MATRON (Lat. *matrona*, married woman). Term of Roman origin, used at first for a married woman of unblemished character. This idea has persisted, but the word now refers chiefly to a woman who is the head of a hospital or orphanage, and to one who has charge of the domestic arrangements of a school or college.

Matronalia was the name given in ancient Rome to a festival celebrated by married women in honour of Juno on March 1.

MATTAWA. Town and river of Ontario, Canada. The river is 50 m. long and flows into the Ottawa river at the town, which is on the C.P.R., and is a centre for lumberers, trappers, and sportsmen. Near deposits of mica have been located. Pop. 1,462.

MATTEI, TIRO (1841-1914). Italian pianist and composer. Born May 24, 1841, at Campobasso, near Naples, he studied music in Rome. After teaching there, he settled in London in 1863, devoting himself to conducting, piano-playing, and composing. He made tours in Europe, and later returned to Italy, where he was pianist to the king. His works include operas, *Maria di Gand* among them, ballets, and songs. He died March 30, 1914.

MATTER (Lat. *materia*). In philosophy, the quality possessed by all sensible things; more particularly, the material or substance

of anything as opposed to its form. Aristotle first accentuated this distinction. In later philosophy, matter denotes the visible, palpable material existing in space; more definitely, the persistent, imperishable foundation or substratum of the world, and all that is in it, as opposed to its changeable phenomena.

In physics, matter is defined as the stuff or substance of which the visible, sensible universe is composed. It was early recognized that there are three states of matter, the solid, the liquid, and the gaseous. Water, for example, can assume all three forms, and the particular state in which any material substance is found is rather an accident of prevailing conditions of temperature and pressure than an essential property.

According to the atomic theory matter consists of an enormous number of atoms. In the solid state these atoms are bound closely together by their mutual attractions, so that one part of the solid cannot move without communicating its motion to the rest; in the liquid state the atoms are not so tightly bound together, and are more easily separated; in the gaseous state the atoms have so completely lost their bonds that they tend to separate as far as possible from one another, and consequently a gas will always expand as far as its boundaries permit. All material substances are compounded of a limited number of elements. The smallest portion of a compound which can have a separate existence is the molecule.

RECENT THEORIES. In 1924 Louis de Broglie put forward his wave theory, which asserted that with every material particle there is associated a vibratory system, or group of waves, the energy of the vibration being equal to the intrinsic energy of the particle. Thus matter consisted of waves of which the centres of energy were the electrons and protons. E. Schrödinger (1926) suggested that the atom itself consisted of a spherical group of waves fluctuating in electric density, and that electrons sent out by the atom were smaller groups of waves. See Atom; Chemistry; Electron; Element; Molecule; Relativity.

MATTERHORN. Alpine peak, on the frontier of Italy and Switzerland. It is 6 m. S.W. of Zermatt. Its height is 14,782 ft. It was first

climbed, July 14, 1865 by Lord Francis Douglas, Rev. C. Hudson, D. Hadow, and E. Whymper. All save Whymper and two of the guides were killed. See Alps.

MATTHEW. Saint and apostle, also called Levi. A Jewish tax-collector for Herod the Tetrarch, he was sitting at the receipt of custom near Capernaum when called by Jesus. The First Gospel traditionally embodies his teaching. He is said to have remained in Jerusalem for 15 years and to have suffered martyrdom at the hands of the Ethiopians.

MATTHEW, GOSPEL OF. Ascribed by tradition to Matthew the Apostle as early as the time of Papias (A.D. 135), this gospel is a compilation based on two main sources—Mark and the Logia, with some additional material, especially in the opening and closing chapters. It was evidently written for a Jewish audience. The arrangement and order of the narrative are artificial. The writer groups similar incidents together—giving us chapters of miracles, chapters of parables, and chapters of teaching. Its earliest possible date is 60-70, but many place it ten years later.

MAUBEUGE. Town of N.E. France. It is on the Sambre, close to the Belgian frontier. Hardware and metal goods are manufactured. It was the capital of Hainault, but became French in 1678. Maubeuge was one of the most important junctions in N. France during the Great War, as five rly. lines meet here, connecting the French and Belgian coalfields. It surrendered to the Germans, Sept. 7, 1914, and was reoccupied Nov. 9, 1918. Pop. 22,843.

MAUCHLINE. Town of Ayrshire, Scotland. It is 9 m. S.E. of Kilmarnock on the L.M.S. Rly. It was noted for its wooden snuff-boxes and other small wooden ware. Mauchline is the scene of Burns's Jolly Beggars and Holy Fair, and 1 m. to the N. is Mossiel, the farm at which he lived from 1784 to 1788. Pop. 2,357.

MAUD (b. 1869). Queen of Norway. The youngest of the three daughters of Edward VII. of Great Britain, she was born Nov. 26, 1869. On July 22, 1896, she was married to Prince Charles of Denmark, who in 1905 was chosen king of Norway, taking the name of Haakon VII. Their son Olaf was born July 2, 1903. In 1929 he married Princess Martha of Sweden.

MAUDE, CYRIL (b. 1862) British actor. Born in London, April 24, 1862, his first appearance on the stage was in America as the servant in East Lynne, 1884. On Feb. 18, 1886, he appeared at The Criterion, London, as Mr. Pilkie in A Great Divorce Case. He joined Charles Wyndham at The Criterion in 1890, and Comyns Carr at The Comedy in 1893, where he remained until 1896, when he went into partnership with Frederick Harrison at the Hay-



Cyril Maude,
British actor
Lafayette

market Theatre. This association lasted until 1905, and Maude achieved many successes. In 1906 he opened The Playhouse and was its sole manager until 1915. In 1927 he published his reminiscences. He married as his first wife Winifred Emery (q.v.).

MAUDE, SIR FREDERICK STANLEY (1864-1917). British soldier. The son of Sir F. Maude, V.C., he was born June 24, 1864. He served in the Sudan in 1884 and in S. Africa 1899-1902. When the Great War broke out, Maude was on the staff of the 5th division, with which he went to France. In Oct., 1914, he was appointed to command the 14th brigade. He then commanded the 13th division, with which he went in 1915 to Gallipoli, to Egypt, and finally to Mesopotamia. In Aug., 1916, he was selected, after the failure to relieve Kut, for the chief command in that area. He reorganized the forces there, and in Dec., 1916, began his advance. The Turks were driven from Kut, and a successful campaign ended in Maude's entry into Bagdad in March, 1917. After a pause came another forward move, marked by a victory at Ramadie. Again in Bagdad, Maude was struck down suddenly by cholera, and on Nov. 18, 1917, he died.



Sir Stanley Maude,
British soldier
Swaine

MAUD'HUY. LOUIS ERNEST DE (1857-1921). French soldier. Born at Metz, Feb. 17, 1857, he entered the army as a lieutenant of

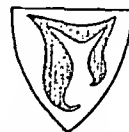
light infantry. When the Great War broke out, Maud'huy was in command of the 80th brigade at St. Mihiel, and took part in several battles, including the first battle of the Marne. In 1916 he was fighting at Verdun in command of the 15th army corps, and in 1917 was in action in the Chemin des Dames battles. In Nov., 1918, he was appointed governor of Metz. He died July 16, 1921.

MAUGHAM, WILLIAM SOMERSET (b. 1874). British dramatist and novelist. He qualified as a doctor, but took to literature, after achieving a great success in 1897 with his first novel, *Liza of Lambeth*, a study of slum life. Mrs. Craddock, 1902; *The Magician*, 1908; *The Moon and Sixpence*, 1919; *The Painted Veil*, 1925; *The Casuarina Tree*, 1926; and *Ashenden*, 1928, were other notable books. His plays include *A Man of Honour*, 1903; *Lady Frederick*, 1907; *The Land of Promise*, 1914; *Home and Beauty*, 1919; *East of Suez*, 1922; *Our Betters*, 1923; *The Letter*, 1927; *The Constant Wife*, 1927; and *The Sacred Flame*, 1929.



W. S. Maugham,
British dramatist
Russell

Maunche, or Manehe. In heraldry, a charge, often greatly formalised, representing an ancient hanging sleeve. See Heraldry.



Maunche, an
heraldic charge

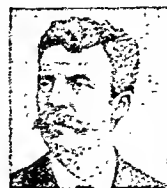
MAUNDY (Lat. mandatum, commandment). Name given to the ceremony of washing the feet of the poor on the Thursday before Easter, to the dole then made, and formerly to the Last Supper. In England the Maundy usage is now confined to gifts of money at Westminster Abbey to as many old men and women as there are years in the sovereign's age, one penny for each year, together with money in lieu of the clothes formerly given. The Yeomen of the Guard carry the doles, which are distributed by the lord high almoner.

MAUNOURY, MICHEL JOSEPH (1847-1923). French soldier. He was born at Maintenon, Dec. 17, 1847, took part in the Franco-Prussian War, was a colonel in 1897, and ten years later became director of the École Supérieure de Guerre. A general since 1901, he had retired from the army before the outbreak of the Great War, but was recalled by General Joffre and placed in command of the French 6th army, the new force which suddenly fell upon the left of von Kluck in the first battle of the Marne, Sept., 1914. In 1915 he was appointed military governor of Paris. He died Mar. 28, 1923.



M. J. Maunoury,
French soldier

MAUPASSANT, HENRI RENÉ ALBERT GUY DE (1859-93). French novelist. Born at Miromesnil, Normandy, Aug. 5, 1859, he was early influenced by Flaubert and was one of the young authors who gathered about Zola at Médan, first attracting attention by *La Boule de Suif*, which he contributed to a volume of stories, *Soirées de Médan*, the joint result of their intercourse. He was then a



Guy de Maupassant,
French novelist

young man of robust health and a great athlete. But he broke down prematurely, in 1892, was



Matterhorn, a celebrated Alpine
peak, 14,782 ft. high

suddenly seized with insanity, and died in an asylum, July 6, 1893.

Maupassant wrote a number of novels, but his best work is to be found in his short stories, e.g. the collections entitled *La Maison Tellier*, *Mademoiselle Fifi*, and *M. Parent*.

MAURETANIA. British liner. Owned by the Cunard line, and of 31,938 tons displacement, she is one of the largest liners in the world. A sister ship to the *Lusitania*, and launched Sept. 29, 1906, her length is 762 ft., breadth 88 ft., and her speed 25 knots. During the war the *Mauretania* was used as a transport. In July, 1928, she created a new world's record (12½ days) for a double voyage across the Atlantic. Her record for the single run, Europe to U.S.A., was later beaten by the *Bremen* (q.v.) and the *Europa* (q.v.).

MAURICE (1567-1625). Prince of Orange. The second son of William the Silent, he was born Nov. 13, 1567. It is as a soldier that Maurice is best known. He led the Dutch in their war against the Spaniards, gaining victory after victory until the truce in 1609. He died April 23, 1625.

MAURICE, SIR FREDERICK BARTON (b. 1871). British soldier. The eldest son of Sir J. F. Maurice, he was born Jan. 19, 1871, and entered the army in 1892. He served in the Tirah, 1897-98; and in S. Africa. He went to France in Aug., 1914, and was chief staff officer of the 3rd division in the retreat from Mons. In Dec., 1915, he was made director of military operations, but in May, 1918, after he had questioned in the press some statements about the strength of the army in the field made by Lloyd George, he was placed on retired pay. He then acted as military correspondent for London newspapers. His works include *Forty Days* in 1914, 1919; *The Last Four Months*, 1919; and *The Life of Lord Rawlinson*, 1928.

MAURICE, JOHN FREDERICK DENISON (1805-72). British divine and social reformer. The son of a Unitarian minister, he was born near Lowestoft, Aug. 29, 1805, and was ordained in 1834, and in 1837 became chaplain of Guy's Hospital, London. He was appointed professor of English literature and history at King's College, London, in 1840, and professor of theology there in 1846. His theological opinions, which were in advance of his age, led to his resignation in 1853, and he became principal of the Working Men's College, London, which he had helped to found. In 1866 he became professor of moral philosophy at Cambridge. He died April 1, 1872. Maurice was a colleague of Charles Kingsley in the Christian Socialist movement.

His son, Sir John Frederick Maurice (1841-1912) was professor of military history at the staff college, Camberley, 1885-92.

MAURISTS. Reformed congregation of the Benedictine Order named from S. Maurus, a monk associated with S. Benedict. It originated about 1618, when the abbey of S. Maur-sur-Loire was founded near Saumur. A hundred years later there were six provinces in France, including 180 houses, the headquarters being at the abbey of S. Germain-des-Près, Paris. The congregation was suppressed in 1792, and the abbey of S. Maur destroyed.

MAURITANIA OR MAURETANIA. Roman province of North-West Africa. Its area corresponded broadly with that of Morocco and W. Algeria, and it was bounded E. by the province of Numidia. The Romans became acquainted with the country during the war with Jugurtha, 106 B.C., and it was formed into a province by Claudius.

The name Mauritania is now given to a French colony in West Africa. Bounded N. by the Spanish territory of Rio de Oro, S. by the French colony of Senegal, and E. by the French Sudan, it was formed into a protectorate in 1903, and became a colony in 1921. Its area is about 347,000 sq. m. The chief products are gum, dates, and cotton. Pop. 296,516.

MAURITIUS OR ÎLE DE FRANCE. Island in the Indian Ocean. British crown colony. Situated about 500 m. E. of Madagascar, it covers 720 sq. m. Surrounded by coral reefs, it is a rugged, hilly mass of volcanic origin, with valleys of great fertility. It exports sugar, rum, aloe fibre, coconut oil, copra, and vanilla. Port Louis, the capital, has the only good harbour. There are 144 m. of rlys. Cable communication is maintained with Zanzibar, Australia, Madagascar, and Durban.

Mauritius was discovered by the Portuguese about 1507. The Dutch occupied it in 1598, naming it in honour of Prince Maurice of Orange-Nassau. They left it in 1710, and five years later the French began settling it; they renamed it Île de France. The British conquered it in 1810, and it was ceded to Great Britain by the treaty of Paris in 1814. Renamed Mauritius and made a crown colony, it is administered by a governor, assisted by an executive council. Among its dependencies are the islands Rodrigues and Diego Garcia. Pop. about 404,000.

MAUROIS, ANDRÉ (b. 1885). French writer. Born at Elbeuf, he was educated at Rouen. His publications include *Silences* du Colonel Bramble, 1918; *Discours du Docteur O'Grady*, 1920; *Ariel*, or the Life of Shelley, 1923; *Maple*, 1926; *The Life of Disraeli*, 1927; *Essay on Dickens*, 1927; *Don Juan*, or the Life of Byron, 1930.

MAUSER RIFLE. Rifle used for both military and sporting purposes, invented by Paul Mauser, a German mechanic. The German government equipped their army with the weapon in 1872, and have retained it ever since, while it is also the standard equipment of other armies. It is a bolt action rifle with a magazine, filled from chargers. It is extremely durable, very accurate, and has a long life of barrel. See Rifle.

MAUSOLEUM. Name applied to a tomb or cenotaph of unusual size and importance. It was first used of the tomb of King Mausolus of Caria, Asia Minor, erected at Halicarnassus, 353 B.C., of which some of the sculptures are in the British Museum. This monument, accounted one of the seven wonders of the world, was 111 ft. in circumference and 140 ft. high, and was crowned by colossal statues of Mausolus and his wife, Artemisia, perhaps designed by Scopas. Other classic mauso-

leums were those of Augustus in the Campus Martius, Rome, and of Hadrian, Rome.

MAWSON, SIR DOUGLAS (b. 1882). British explorer. Born at Bradford, Yorkshire, he went in his youth to Australia, where he graduated at Sydney University in 1901, became demonstrator in chemistry, 1902, lecturer in Adelaide University, 1905, and professor of geology and mineralogy, 1920. On the scientific staff of Sir Ernest Shackleton's Antarctic expedition of 1908, he helped to locate the S. Magnetic Pole in Victoria Land. He discovered and explored King George V Land, and in 1929, in the *Discovery* (q.v.), set out on another Antarctic tour. Knighted in 1914, he published *The Home of the Blizzard* in 1915.



Sir D. Mawson, British explorer Thomson

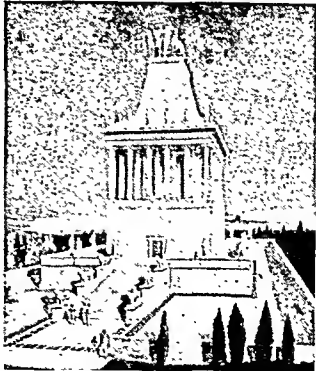
MAX, ADOLPHE (b. 1869). Belgian administrator. He began his career as a journalist, and then became a lawyer. At the outbreak of the Great War he was hurgmaster of Brussels, and in that capacity he proposed to defend Brussels against the German advance. During the early part of the German occupation he publicly urged resistance to the Germans' demands, and on the non-payment by Brussels of the fine of £8,000,000 was taken to Germany, where he remained until the end of the war. On Nov. 17, 1918, he was reinstated.

MAXENTIUS, MARCUS AURELIUS VALERIUS. Roman emperor, A.D. 306-312, a son of Maximian, the colleague of Diocletian. His tenure of imperial power, which he had seized with the help of the praetorian guard, came to an end when he was defeated by Constantine and drowned in his flight, Oct. 27, 312.

MAXIM, SIR HIRAM STEVENS (1840-1916). Anglo-American inventor. He was born at Saugerville, Maine, U.S.A.; Feb. 5, 1840. His inventive faculty was developed early, and demonstrated in improvements in lamps used for electric lighting purposes, and in gas generating plants, steam and vacuum pumps, engine governors, steam pumping engines, etc. His name is best known in connexion with the Maxim gun. He was also interested in aeronautics. Maxim became a naturalised British subject, was knighted in 1901, and died Nov. 24, 1916.



Sir Hiram Maxim, Anglo-American inventor Russell



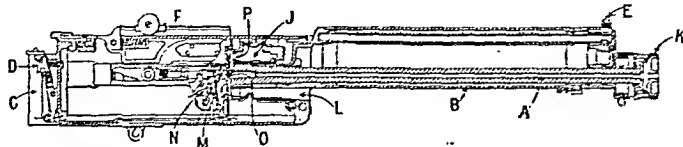
Mausoleum. Reconstruction of the tomb of Mausolus at Halicarnassus. From model by A. J. Stevenson, British Museum, by permission of the Trustees

which has his name. It was adopted by the British army in 1889. The Maxim gun is water-cooled and operates by the recoil of the



J. F. D. Maurice, British divine

barrel and breech block, the cartridges being fed in canvas or steel strip belts. The breech block is connected to the barrel by suitable levers so that the reciprocating motion enables it to eject the spent case, cock the hammer, feed in a new round, and then fire the latter, the ammunition belt being automatically fed through the breech casing. The rate of fire approximates to 600 per minute. See Machine Gun.



Maxim Gun. Sectional diagram showing principal parts of mechanism: A. Barrel. B. Water Jacket. C. Handles. D. Trigger. E. Foresight. F. Back-sight. J. Feed block for ammunition belt. K. Attachment for deflecting gases. L. Tube for expulsion of spent cartridges. M. Striker. N. Cam and lever of operating striker. O. Extractor for empty cartridges. P. Clip for removing new cartridge from belt.

MAXIMIANUS I, MARCUS AURELIUS VALERIUS (d. 310). Roman emperor, A.D. 286-305. A Pannonian



Maximianus I, Roman emperor
From a medallion

of humble origin, he was chosen by Diocletian as colleague with the western half of the empire as his portion, and when in 293 the empire was divided into four parts, Maximianus had charge of Italy and Africa. When Diocletian abdicated in 305 he compelled Maximianus to do the same. In 306 the elevation of his son Maxentius to the rank of Augustus induced him to resume the crown. He committed suicide in 310.

Maximianus II, Roman emperor, A.D. 305-311, is better known as Galerius (q.v.).

MAXIMILIAN (1867-1929). Prince of Baden. Born July 10, 1867, he entered the Prussian army and took an active part in the public life of Baden, but was little known in the politics of Germany until, on Oct. 3, 1918, he succeeded Count Hertling as imperial chancellor. His first action was to appeal to President Wilson, through Switzerland, to initiate peace negotiations, and he conducted the difficult questions relating to the armistice and the abdication of the Kaiser. He remained in office until the republican government was fully established. In 1923 an English translation of his Memoirs was published. He died at Constance, Nov. 6, 1929.



Maximilian, Prince of Baden

MAXIMILIAN I (1459-1519). German king and Roman emperor. Son of the emperor Frederick III, he was born in Vienna, March 22, 1459. He married in 1477 Mary, daughter and heiress of Charles the Bold, duke of Burgundy, and the death of Charles threw on him the duty of defending his wife's lands against the king of France. In 1486 he was chosen king of the Romans, and in 1493 he became emperor.

Maximilian's reign of 26 years was full of incident. He warred against France and Italy, but without any great success. The Swiss won from him their independence after a short war in 1499. In Germany he set up an imperial court of justice, the Reichskammergericht, and also an aulic council, organized the Landsknechte and improved the fighting forces in other ways. Under him Tirol was added to the family lands, and he arranged the marriages which brought Hungary and Bohemia to the Hapsburgs. He died Jan. 12, 1519.

Maximilian II (1527-76), the eldest son of Ferdinand I, succeeded in 1564, and reigned until his death, Oct. 12, 1576.

MAXIMILIAN (1832-67). Emperor of Mexico, 1863-67. He was born July 6, 1832, a younger son of the archduke Francis Charles

and brother of the emperor Francis Joseph of Austria. In 1857 he married Charlotte, daughter of Leopold I, king of the Belgians.

In 1863 he was proclaimed emperor of Mexico by the French in that country, and on May 29, 1864, he landed at Vera Cruz. In 1866 he lost the support of the French force, and in May of the following year he was betrayed to his enemies and on June 19, 1867, was shot. The empress Charlotte went out of her mind, dying Jan. 19, 1927.

MAXIMINUS, GAIUS JULIUS VERUS. Roman emperor, A.D. 235-38. By birth a Thracian peasant, he rose to high command in the army. He was proclaimed emperor by the legions of the Rhine, and the murder of Alexander Severus within a month afterwards made his way clear to the throne. Maximinus gained some successes against the Germans, but soon alienated his subjects by his tyranny and cruelty, which caused a revolt in Africa. He was murdered by his own soldiers.



Gaius Maximinus, Roman emperor
From a medallion

MAXIMUS, MAGNUS CLEMENS. Roman emperor, A.D. 333-38. Born in Spain, he was proclaimed emperor by the troops in Britain, crossed over to Gaul, and defeated Gratian, his rule beyond the Alps being recognized by both Theodosius and Valentinian II. He invaded Italy, 387, but was taken prisoner and put to death at Aquileia by order of Theodosius.

Another Roman emperor, Petronius Maximus, murdered Valentinian III and married his widow in 455, but was himself killed in the same year.

MAX MÜLLER, FRIEDRICH (1823-1900). Anglo-German philologist, Sanskrit scholar, and orientalist. Only son of the poet Wilhelm Müller, he was born at Dessau, Dec. 6, 1823, came to England, and was commissioned by the East India Company to edit the Rigveda. He became professor of modern languages at Oxford, 1854, and professor of comparative philology, 1866. He died at Oxford, Oct. 28, 1900. His lectures on the Science of Language, 1861-64, introduced the English public to the latest results of the study of comparative philology and religion.



Maximilian, Emperor of Mexico

MAXWELL, WILLIAM BABBINGTON (b. 1876). British novelist. The son of John Maxwell, publisher, by his wife, M. E. Braddon, his novels are distinguished by skilful character drawing, sound construction, and careful attention to detail. They include *The Ragged Messenger*, 1904;

Vivien, 1905; *The Guarded Flame*, 1906; *Mrs Thompson*, 1911; *In Cotton Wool*, 1912; *The Devil's Garden*, 1913; *A Man and his Lesson*, 1919; *Elaine at the Gates*, 1924; *The Case of Bevan Yorke*, 1927; and *Himself and Mr. Raikes*, 1929.

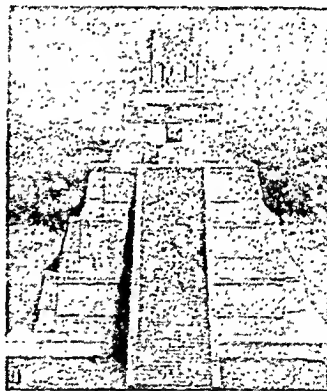
MAXWELLTOWN. District of Kirkeudbrightshire, Scotland. On the Nith, just opposite Dumfries, it has a station on the L.M.S. Rly. and has bridge connexion with Dumfries. The chief industry is the manufacture of tweeds. Until 1810 the place was known as Bridgend, but it was then renamed, the district round having been a stronghold of the Maxwells. In 1929 Maxwelltown was amalgamated with Dumfries.

MAY, PHIL (1864-1903). British caricaturist. Born at Leeds, April 22, 1864, he came to London about 1882 and drew cartoons for *Society and St. Stephen's Review*. He then went to Australia and worked for *The Sydney Bulletin*. He returned to London about 1890, and worked for *The St. Stephen's Review*, *Pick-me-Up*, *Pall Mall Budget*, *The Graphic*, and *Punch*, on the staff of which paper he succeeded to the place formerly held by George du Maurier. His publications include *The Parson and the Painter*, 1891; *Guttersnipes*, 1896; and *Phil May's Annual*. He died August 5, 1903.



Phil May, British caricaturist
Elliott & Fry

MAYA. American Indian stock. It comprises about 20 tribes in middle America. The modern Maya are directly descended from a people who at the Spanish conquest possessed an advanced civilization, which reached levels of architectural and sculptural achievement unsurpassed elsewhere in pre-Columbian America. The starting point of Maya civilization is still undetermined. The oldest dated monument yet identified in the Maya region, found in 1916 at Uaxactun in N. Guatemala, approximates to A.D. 50. In the same neighbourhood Tikal has yielded the date 214, together with monuments in an earlier style and Copan is traced back to 250.



From these centres, with temples raised upon terraced pyramidal platforms, the movement spread to



Maya. 1. Reconstruction of a temple pyramid at Tikal. 2. Stone relief from Menché city. 1. American Museum of Natural History; 2. British Museum

Quirigua and thence into Yucatan, which was reached early in the 5th century. By 600 the southern cities were already in decay, and were unknown to the early Spanish historians, who left detailed accounts of the great northern cities, notably Uxmal, Chichen Itza, and Mayapan, which was abandoned in 1442. These sources are supplemented by the digests of chronicles in the Mayan language, and by three pre-Columbian codices.

After Maya art lost its impulse in the primal centres of development its principles spread westward into S. Mexico, where it was adopted by the Zapotec people, and onward into the Anahuac tableland. Here it apparently owed its dissemination to the Toltec, from whom it was afterwards absorbed by the Aztec communities. The religious rites, less sanguinary than the Aztec, included sacrificial offerings by professional priests to deities deemed to control the means of subsistence. See Aztec; Mexico; Yucatan.

MAYBOLE. Burgh of Ayrshire, Scotland. It is 9 m S.W. of Ayr on the L.M.S. Rly. The chief industry is the making of agricultural implements. Maybole became important as the capital of Carrick. It had a castle in which the earls of Carrick lived. Later it passed to the family of Kennedy. Pop. 4,889.

MAYBRICK CASE. Trial of Mrs Maybrick for the murder of her husband in April, 1889. Mrs. Maybrick was 26 at the time, her husband being twice her age. Early in 1889 she formed a liaison with a young cotton broker in Liverpool, and shortly afterwards she and her husband had a violent quarrel. Within six weeks Mr. Maybrick was dead, and in that time incriminating correspondence had been intercepted between Mrs. Maybrick and her lover. The widow was charged with the willful murder of her husband by arsenic poisoning. She was defended by Sir Charles Russell was found guilty, sentenced to death, but was reprieved, mainly on the grounds of the conflict of the medical evidence. She was not released until 1904.

MAYFAIR. District of W. London. N. of Piccadilly (q.v.) and covered by fashionable streets and squares, it derives its name from a fair held during May in the Brook Field, near Chesterfield House. Brook Field was named after the Tybourne, which flowed through it. Sunderland House is on the site of Mayfair or Curzon Chapel, 1730-1899. In Curzon Street, Beaconsfield died in 1881. In 1928 the ground landlords allowed Bruton Street to be used for business purposes.

MAYFIELD. Village of Sussex. It is 11 m. from Tunbridge Wells, on the Southern Rly. The archbishop of Canterbury had a palace here, of which there are some remains, now partly incorporated in a convent. Pop. 2,880

MAYFLOWER. THE. Sailing vessel in which the Pilgrim Fathers (q.v.) left Plymouth, England, Sept. 6, 1620, and reached the shores of Massachusetts, Dec. 21, 1620. A square-rigged brigantine, double-decked, broad in beam, with upper works rising high in the stern, the Mayflower had been used in the whaling service. In her cabin, off Cape Cod, Nov. 2, 1620, was signed by the pilgrims the famous agreement drawn up by William Brewster. See Jordans.

May Fly. Popular name for the common English species of ephemera (q.v.).

MAYNOOTH. Village of co. Kildare, Irish Free State. Situated 15 m. N.W. of Dublin, on the G.S. Rlys., it contains the ruins of a castle, formerly the seat of the Fitzgeralds. Near is Carton, the seat of the present head of that family, the duke of Leinster. Maynooth is chiefly famous for its R.C. college, founded by the Irish parliament in 1795, the chief Irish college for the education of priests. The building, by A. W. Pugin, is in the Gothic style. Pop. 846.

MAYO. County of the Irish Free State, in the prov. of Connaught. Area, 2,158 sq. m.

It has a long irregular coastline on the Atlantic, penetrated by Killala, Blacksod, and Clew Bays, Killary Harbour, and Broad Haven. The peninsula of Mulllet juts out in the N.W. Achill, Clare, Inishurk, and other islands belong to it.

The county is drained by the Moy, Owenmore, and other rivers; it contains longhills Mask, Conn, Carra, and Beltra. The surface is fairly level in the E., but mountainous in the W. Mayo is served by the G.S. Rlys. Castlebar is the county town; other places are Ballina, Westport, and Newport. Killala was once the seat of a bishop. Pop. 172,690

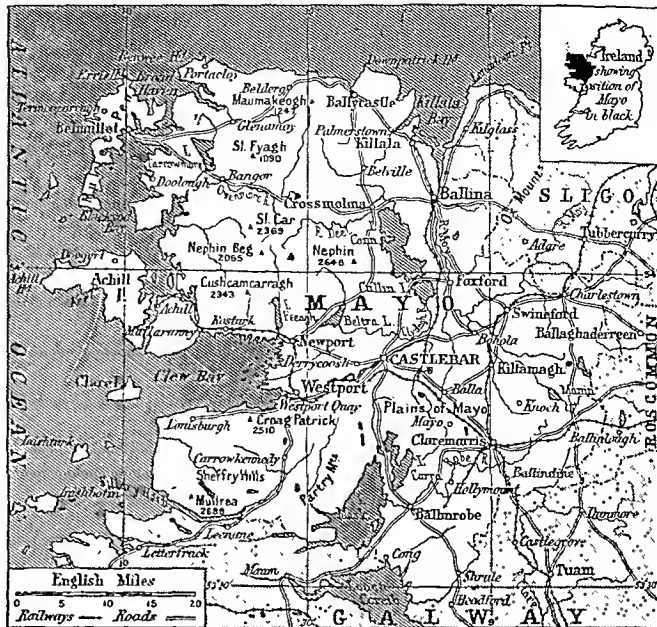
MAYOR (Lat. major, greater). Name given, in England, Ireland, Canada, Australia, the U.S.A., and elsewhere, to the chief officer of a municipality. In England the title appeared about 1100 for the chief official of London, and was soon in fairly general use in the chartered towns. The mayor is elected annually by the town council to preside over its meetings and act as the official head of the town. He is the chief magistrate, and is styled his worship. The corresponding Scottish official is the provost. See Borough; Burgomaster; Lord Mayor; Provost.

MAYPOLE. Tall pole formerly set up on village greens, or in the open spaces of towns in England, to form the centre of the festivities associated with the coming of May. It was garlanded with leaves and flowers, and long coloured ribbons attached to the top were held by dancers, who plaited and unplaited them in the course of their evolutions. In some places the maypole was a permanent fixture. The London maypole, demolished by the Commonwealth, was replaced on the Restoration by a pole 134 feet in height. It stood in the Strand near Somerset House, and was removed to Wanstead, Essex, in 1717.

MAYWEED (*Matriaria inodora*). Annual or biennial herb of the order Compositae. a native of Europe and N. and W. Asia. The narrow leaves are twice divided into threadlike segments. The daisy-like flower-head is white with a yellow centre, and is 2 ins. across.

MAZARIN, JULES (1602-61). French statesman and cardinal. Born at Piscina, July 14, 1602, he entered the papal service, and was sent to France on a diplomatic mission. There Richelieu took him into the French service, and dying, named him as his own successor in 1642. On the death of Louis XIII in 1643,

Mazarin, who had received the cardinal's hat in 1641, retained the confidence of the regent, Anne of Austria. Under his régime the Thirty



Mayo, Irish Free State. Map of the north-western county of Connaught

Years' War was ended in 1648. The contest between France and Spain continued, but was suspended by the internal struggles of France known as the War of the Fronde, which ended in the complete triumph of Mazarin. The war with Spain was now renewed, with the alliance of Cromwell, and was brought to a successful termination in 1659. He died March 9, 1661.



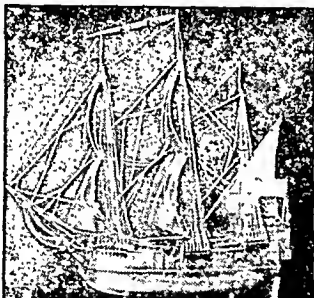
Jules Mazarin, French statesman

MAZE. Modern term for a garden labyrinth or puzzle garden. There is a notable example at Hampton Court, laid out in the time of William III. Mazes were common in southern England in former times. See Labyrinth.

MAZEPPA-KOLEDINSKI, IVAN STEPANOVICH (1644-1709). Cossack soldier. Of a noble Polish family, he was educated by the Jesuits. He was discovered in a liaison with a noble lady, whose husband bound him naked to a wild horse, which, it is said, fled with him to the Ukraine. Then he joined the Cossacks and in time became their leader or hetman. He won the favour of Peter the Great; but in 1708 he deserted Peter and took 7,000 men to the assistance of Charles XII. He was at the battle of Poltava, 1709, after which he went to Turkey, and died, perhaps by suicide, at Bender, Sept. 22, 1709. The story of Mazeppa has been treated by Byron, Victor Hugo, Bulgarin, and Gottschalk.

MAZURKA or **MASUREK**. National Polish dance in triple time. Originating in Mazovia, Central Poland, in the 16th century, the dance was adopted in Russia after the subjugation of Poland, and became popular in Germany in the middle of the 18th century, and in France and England later. Characteristics of the early Mazurka tunes were the monotony of the bass and accents on the third beats.

MAZZINI, GIUSEPPE (1805-72). Italian patriot. Born at Genoa, June 22, 1805, he was educated for the law. He joined the Carbonari (q.v.) in 1827, and being arrested on suspicion in 1830, was sentenced to exile. Proceeding to Marseilles, he organized a small



Mayflower. Model of the famous Pilgrim ship of 1620
By permission of Goulding & Co., Plymouth



Mayweed. White and gold flower-heads

band of conspirators, who spread the doctrines of the secret society, Giovine Italia (Young Italy), already founded by Mazzini. When, alarmed at his secret politics, the French government banished him in 1832, Mazzini moved to Geneva, and in 1837 to London, where he made many friendships. The revolution of 1848 recalled him to Italy, but after its failure he returned to London. He was again in Italy in 1859, where he continued his plots and conspiracies. In the pursuit of one of these he was arrested in 1870, but was soon released and allowed to settle in Lugano. He was at Pisa, under the name of Brown, when he died, March 10, 1872.

As Mazzini spent nearly his whole life in writing, his works are many, but *Il Dovero dell' Uomo*, 1858 (Eng. trans. *The Duties of Man*, 1862), is the best and most characteristic of his essays. Byron e Goethe, 1847, gave an index to his views on literature, while a number of essays and reviews which he contributed to British magazines contained most of his historical work.

MEADOW GRASS (Poa). Genus of grasses of the order Gramineae, more particularly *P. pratensis* and *P. trivialis*. The first is a native of the N. temperate and cold regions, the second of Europe, N. Asia, and N. Africa. They are perennials with creeping root-stocks, which send out runners in the first-named species. They have flat pale-green leaves and pyramidal panicles of flowers. *P. nemoralis* grows in copses and woods.

MEADOW RUE (*Thalictrum flavum*) Perennial herb of the order Ranunculaceae. A native of Europe and N. Asia, it has a creeping root-stock and furrowed stems three or four feet high. The leaves are divided into many three-lobed leaflets. The small yellow flowers are massed in a large pyramidal cluster. There are no petals and the sepals are small, but the flower clusters are made attractive by the numerous stamens.

MEADOW SAFFRON (*Colchicum autumnale*). Tuberos-rooted perennial of the order Liliaceae, native of Europe. It has pale purple, crocus-like flowers which appear in autumn; the long slender lance-shaped leaves appear in spring. From the dried corms and the seeds the drug colchicum is prepared.

MEADOW SWEET (*Spiraea ulmaria*). Perennial herb of the order Rosaceae, a native of Europe, N. Asia, and Asia Minor. It has a short root-stock, from which arise the handsome leaves, a couple of feet long, broken into toothed leaflets and lobes, white and downy on the underside. The flowers are small, creamy-white, in dense clusters, and very fragrant. The plant delights in wet meadows and water-sides.

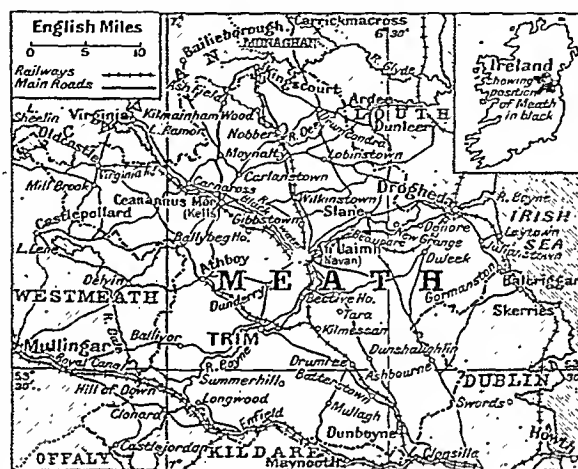
Meadow Sweet. Flowers and buds of the fragrant herb

Meare. Village of Somerset. About 3 m. from Glastonbury, it is known for its lake village. Pop. 1,011.

MEARNS. Alternative name for the Scottish county of Kincardine. A continuation of Strathmore is known as the Howe or hollow of the Mearns. See Kincardineshire.

MEASLES or **RUBEOLA**. Acute contagious disease of microbial origin. The specific organism has not yet been isolated. The disease is most frequent in childhood, and the interval from actual infection to the commencement of symptoms is from seven to eighteen days, most often fourteen days. The disease usually starts apparently as a feverish cold. Headache, nausea, and vomiting may be the first symptoms. About the fourth day little red spots appear on the face. The skin of the chest and abdomen exhibits a mottled, blotchy appearance. Possible complications are laryngitis, bronchitis, bronchio-pneumonia, and inflammation of the middle ear. The patient must be kept in bed in a warm, well-ventilated room and have good nursing.

MEATH. County of the Irish Free State, in the prov. of Leinster. Area, 905 sq. m. It has a coastline of about 10 m. on the Irish Sea. Largely level, there are hills in the west. The chief rivers are the Boyne and its tributary, the Blackwater. Oats and potatoes are grown; cattle, sheep, and pigs are reared. It is served by the G.S. Rlys. Trim is the county town; other places are Navan, Kells, Oldestale, and



Meath, Irish Free State. Map of the Leinster county

Athboy. Meath was the name of one of the kingdoms of Ireland, this including Meath, Westmeath, Longford, and parts of other counties. The kings disappeared in the 12th century. There is both a Roman Catholic and a Protestant diocese of Meath. Pop. 62,969.

MEATH, EARL OF. Irish title borne since 1627 by the family of Brabazon. In 1616 Sir Edward Brabazon, an Irish M.P., was made an Irish peer as Lord Ardee, and his son William, the 2nd baron, was made an earl. His descendants succeeded until the earldom came to John, the 10th earl, who in 1831 was made a peer of the United Kingdom as Baron Chaworth. Reginald, who became the 12th earl in 1887, was known as a promoter of Empire Day (q.v.) and as a philanthropist. He died Oct. 11, 1929.

MECCA, **MAKKAH**, or **BAKKAH**. City of Arabia, capital of Hejaz. It lies in a narrow valley, surrounded with hills, about 70 m. E. of Jeddah. As the birthplace of Mahomet it is the chief Holy City of the Moslems. El Haram, the great mosque, has within it the sacred Ka'aba (see illus. p. 806). Mecca was once an important centre of trade, but latterly its main commercial enterprise has been supplying pilgrims with souvenirs. Although non-Moslems are forbidden to enter the Holy City, it has been visited by several Christian observers, such as Sir R. Burton.

During the Great War Hussein Ibn Ali, the grand shérif, revolted against the Turks, and captured Mecca in 1916. In Oct., 1924,

Mecca fell to the Wahabis, as the result of the victory of the sultan of Nejd, who in Jan., 1926, proclaimed himself king of Hejaz and Nejd in Mecca. Pop. 85,000. See Hejaz: Holy Carpet; Hussein; Ka'aba: Mahomedanism; Mahomet; Nejd.

MECHNIKOV, **ILIYA** (1845-1916). Russian biologist. Born May 15, 1845, at Ivanovka, near Kharkov, Russia, he became professor of zoology at Odessa in 1870. After further research at Messina and Teneriffe, he gained world-wide reputation by his investigation into the function of the white blood corpuscles. In 1887 he settled in Paris, working at the Pasteur Institute, of which he became assistant director. Here he investigated many obscure diseases, including cancer and plague, and collaborated with Ehrlich (q.v.) in combating syphilis. He was best known by his theory of longevity (1909), in which he attributed old age to intestinal putrefaction, and advocated the sour milk treatment. Mechnikov died June 16, 1916.



Iliya Mechnikov, Russian biologist

MECKLENBURG-SCHWERIN. Republic of Germany. Until 1918 it was a grand duchy, the ruler having been a grand duke since 1815, and a duke since 1701. The state covers 5,066 sq. m., and lies on the N. German plain with a coastline along Mecklenburg Bay. The chief crops are rye, barley, sugar beets, and potatoes. The Baltic seaport Rostock is the largest town, and Schwerin is the capital. Pop. 674,045.

MECKLENBURG-STRELITZ. Republic of Germany. It is entirely inland, and adjoins on the W. the parent state of Mecklenburg-Schwerin, which it resembles in physical and economic character. Its area is 1,131 sq. m. The capital is Neu-Strelitz. Pop. 110,269.

MEDAL. Piece of metal in the form of a coin, usually bearing a device or inscription and given to commemorate an event. Medals are issued to sailors, soldiers, and airmen in time of war, and there are other medals for bravery in time of peace.

Among the most interesting British medals are those officially issued to the fighting services. Elizabeth originated the idea, as far as England is concerned, of awarding medals to those who served in battle. She gave a very beautiful oval piece to certain naval officers who fought the Armada. The army, as distinct from the navy, received its first medallion award from Charles I. But on both these occasions the recipients were a select few, and Dunbar was the first encounter in which the rank and file were all decorated. The first medal to depend from a ribbon of prescribed colour was struck for Culloden, and the earliest piece with which bars were issued as added honours was the officers' gold Peninsular medal.

Every campaign since Waterloo in which British forces have been in action has been the subject of a medal, and every man taking part in the encounters has received an award.

The series of awards from Waterloo to the Great War presents an imposing array, but the various pieces are of unequal merit. The Queen's Sudan medal of 1896, with victory on the obverse, is considered the finest piece in the series.

Medals specially struck in connexion with the Great War were: the naval medal to commemorate the victories off Heligoland Bight and the Dogger Bank, 1914-15; British War Medal, 1919; Victory Medal, 1919; Territorial War Medal, 1920; also the 1914 Star, popularly known as the Mons Star; and the 1914-15 Star. See Albert Medal; Distinguished Service Medal; etc.

MEDEA. In Greek mythology, the daughter of Aëtes, king of Colchis. When Jason came to Colchis in search of the Golden Fleece, Medea fell in love with him, and by her magic arts assisted him to obtain possession of the prize. She returned with Jason to Iolcus as his wife. There it was found that Pelias the king had murdered his half-brother Aeson, Jason's father. In revenge, Medea persuaded the daughters of Pelias to cut their father in pieces. Expelled from Iolcus for this deed, Medea and Jason went to Corinth, where Jason deserted her. See Argonauts; Jason.

MEDIA. Ancient country of W. Asia, S. and S.W. of the Caspian Sea, in what is now Persia. The capital was Ecbatana, the modern Hamadan. Shortly after 700 B.C. the Medes threw off the Assyrian yoke and became a great nation. In 549 Cyrus of Persia, who acknowledged the sovereignty of Astyages, son of Cyaxares, rebelled, and by 500 was ruler of a combined empire of Medes and Persians. With the overthrow of the Persians by Alexander the Great after the battle of Arbela in 331, Media became part of Alexander's empire. After his death in 323 it formed part of the kingdom of the Seleucidae, until in 147 it was conquered by the Parthians.

MEDICI. Ruling family in Florence. Giovanni Medici, a banker, was the real founder of the greatness of the family, in



Medici. Members of the famous Florentine family. Left to right: Cosimo the elder; Cosimo (d. 1574); Giuliano (by Botticelli); Lorenzo (by Titian)

which the headship of Florence became hereditary. His wealth and position passed to his son Cosimo (1389-1464), famous as a patron of art and learning. Cosimo's grandson was Lorenzo (1448-92), called the Magnificent, one of the outstanding figures of the Renaissance.

In 1530 Alexander de' Medici was made duke of Florence, and in 1569 his son Cosimo became grand duke of Tuscany. This position remained in the family until 1737.

Two members of the family became popes, one as Leo X and the other as Clement VII. Two daughters of the house married kings of France, Catherine (q.v.) being the wife of Henry II and the mother of his three successors, and Marie the second wife of Henry IV.

MEDICINE. Science of the treatment of disease. The earliest group of scientific medical documents is the Hippocratic Collection, put together about 300 B.C. The basis of the collection is that doctrine of the humours which lasted till the 18th century. Celsus, at the beginning of the 1st century A.D., gives a very exact account of surgical practice, and has an accurate though limited knowledge of anatomy. In the 2nd century A.D. the most notable figure was Galen of Pergamum. He dissected the animal body, felt the pulse, differentiated forms of lung disease, and studied the use of drugs. Then came the Dark Ages, when medical science was kept alive by the Arabian doctors.

Among the earliest medical writers of the

16th century to free themselves from Arabian tradition was Fraeacstor, who placed the theory of infection on a sound basis, and Paracelsus, who introduced chemical conceptions into medicine. It was, however, the anatomists, especially Vesalius, who did most to create the new era in medicine. The researches of Michael Servetus, Hieronymus Fabricius, and others culminated in the immortal work of William Harvey, whose discovery of the circulation of the blood was published in 1628.

The earliest years of the 18th century saw clinical teaching placed on a recognized footing by Hermann Boerhaave. Among his most famous pupils were Albert von Haller, perhaps the most learned of all physicians, and Sir John Pringle, the pioneer of antiseptics. With these men may be mentioned the great English clinicians, William Heberden, John Huxham, who did valuable work in epidemiology, and Edward Jenner, whose name will always be associated with vaccination. But all these names pale before the brilliance of John Hunter, the founder of experimental and surgical pathology. Later, Charles Darwin, by placing the doctrine of evolution on an observational basis, gave a new meaning to all forms of biological research, while Louis Pasteur, and after him Robert Koch and Joseph Lister, by their demonstration of the germinal origin of certain pathological processes at one step elucidated a vast number of phenomena which were previously inexplicable. The work of Pasteur also led to the field of tropical medicine and hygiene, in which Patrick Manson, followed by Ronald Ross, made discoveries that are freeing the world from the scourge of malaria and other mosquito-borne diseases. Among recent developments in the treatment of disease are the administration of extracts from ductless glands, the controlled action of light, and psychotherapy.

MEDICINE HAT.

Town of Alberta, Canada. It stands on the S. Saskatchewan river, 165 m. S.E. of Calgary, and is served by the C.P.R. It is the

trading centre for a large district. Pop. 9,536.

MEDICINE MAN. Practitioner of the healing art and cognate mysteries in primitive culture. Carrying their mysteries in a medicine bag, and wearing a distinctive dress, medicine men profess to control physical and psychical phenomena by various means, including incantation, dancing, drums, rattles, horns, sacrifice, appeal, amulets, ventriloquism, sleight of hand, and suggestion. See Exorcism; Magic.

MEDICK (*Medicago falcata*). Perennial herb of the order Leguminosae. A native of Europe, including the E. counties of England,

India, and N. Asia, it attains a height of 6 ins. to 2 ft., and has leaves of three variable leaflets. The yellow, occasionally violet, flowers are clustered in short sprays, and the seed-pod is sickle-shaped. The black medick, or nonsuch (*M. lupulina*), is a trailing biennial with its yellow flowers in an oval head, and smooth, kidney-shaped pods, black when ripe. Purple medick (*M. sativa*), a plant of the Mediterranean region, is largely grown as a green fodder plant, and has become naturalised here and there.



Medick. Sprays of *medicago maculata*

Lucerne (q.v.), or purple medick (*M. sativa*), a plant of the Mediterranean region, is largely grown as a green fodder plant, and has become naturalised here and there.

MEDINA. City of Arabia, in the Hejaz. It lies about 240 m. N.W. of Mecca, and is connected by the Hejaz Rly. with the Palestine, Syrian, and Bagdad rlys. It is the second holy city of the Moslems, because it contains Mahomet's tomb, which stands in a mosque of great magnificence. The residence of Mahomet after his flight from Mecca, 622, it was the residence of the earliest caliphs. It has a considerable trade. Its port on the Red Sea is Yenbo, 125 m. to the S.W. The population is 30,000, but this number is greatly exceeded during the Pilgrimage season.

MEDINA. Name of a stream in the Isle of Wight. The title of earl of Medina is borne by the eldest son of the marquess of Milford Haven, on whom it was bestowed in 1917.

MEDITERRANEAN SEA (Lat. media middle; terra, land). Sea that washes the shores of Europe, Asia, and Africa. On the W. it communicates with the Atlantic by the narrow strait of Gibraltar, and on the N.E. the Dardanelles, the Sea of Marmara, and the Bosphorus connect it with the Black Sea. It is, thus almost landlocked. Its basin is some 1,145,000 sq. m. The N. shores are deeply indented, but the African coast is little broken. Its waters evaporate very rapidly, for immediately to the S. is the rainless Sahara. The Nile is the only great river which feeds the sea directly. The sea is almost tideless. See Europe; map; Dardanelles.

MEDLAR (*Mespilus germanica*). Hardy tree of the order Rosaceae. It is a native of Greece, Persia, and Asia Minor. and is found wild in



Medlar. Fruit and leaves of this European tree

Britain occasionally. As a wild tree it has spiny branches, but in orchards the spines disappear. The fruit has a sub-acid flavour, and is used for flavouring and for making jellies. The fruit should be stored in a cool room to "blet" until it is brown

and almost on the verge of decomposition.

MEDMENHAM. Village of Buckinghamshire, 3 m. S.W. of Marlow. A Cistercian abbey was founded here about 1200. On the site a residence was built, and there, in the 18th century, Sir Francis Dashwood established a mock order of Franciscans notorious as the Hell Fire Club. Pop. 400.

MEDOC. District of France, W. of the Gironde estuary. The chief subdivision of the Gironde viticultural region, it produces little white wine, but yields some of the most famous varieties of red Bordeaux. Vineyards in the parishes of Pauillac, Margaux, St. Julien, etc., give the Medoc wines their specific names.

MEDUM or **MEXDUM.** Ancient necropolis on the left bank of the Nile, 40 m. upstream from Cairo, Upper Egypt. Among other tombs, it contains the oldest true pyramid, originally a seven-staged mastaba. Pron. Maydooom.



Medusa. Roman copy of a Greek original of the end of the 5th cent. B.C. in the Glyptothek, Munich

MEDUSA. In Greek mythology one of the three gorgons. They could turn into stone anyone who looked at them. Medusa, the only mortal among them, was killed by Perseus, who cut off her head while looking at her reflection in a mirror. See Gorgons.

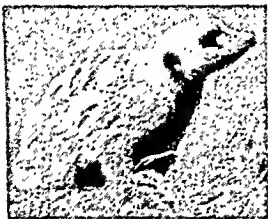
MEDUSA. Name applied to certain species of jelly fish. They are marine animals, and vary in size from microscopic forms to bells, or parachutes. See Jelly Fish

MEDWAY. River of England. It rises in three headstreams in Sussex and Surrey, in the Weald, and flows generally N.E. through Kent to the mouth of the Thames, which it enters by a wide estuary. Tonbridge, Maidstone, Rochester, and Chatham are on its banks. Sheerness stands at the E. entrance to the estuary. Its length is 70 m., including the estuary. See Aylesford; Chatham.

Medway is the name of a submarine depot ship laid down in 1927, and sent to China.

MEE, ARTHUR (b 1875). English journalist and author. Born at Stapleford, Notts, July 21, 1875, when 20 he was acting as editor of *The Nottingham Evening News*. He moved to London, edited *Black and White*, 1901-3, and contributed daily to *St. James's Gazette* for over three years. Literary editor of *The Daily Mail*, 1903-5, he produced the *Harmsworth Self-Educator*, 1906, and various other works, notably *The Children's Encyclopedia*, 1908. Among his books are *Little Treasure Island*, 1920, and *Arthur Mee's Hero Book*, 1921.

MEER, JAN VAN DER (1628-91). Dutch painter. Born at Haarlem, he was a pupil of Jacob de Wet, visited Italy when young with Lieven van der Schuur, and painted landscapes with cattle and figures. He died at Haarlem.



Meerkat, a carnivorous mammal related to the mongoose
W. S. Berridge, F.Z.S.

MEERKAT

(Dutch, sea cat) OR SURICATE (Rhyzaca). Carnivorous mammal related to the mongoose

and civet. It is about 14 ins. in length, including the tail, and its soft fur is of a greyish colour. It has a sharp nose and very long claws. It is common in Cape Colony, where it lives in burrows in the sand.

MEERUT. Town of India, in the United Provinces. An old city, midway between the Ganges and Jumna, it had lapsed into a ruinous condition until it became a garrison and military headquarters. The mutiny broke out here in 1857. It is the capital of a district and a division of the United Provinces. The Jama Masjid dates from 1019. Pop. 122,609.

MEGALITHIC (Gr. megas, great; lithos, stone). Term denoting a homogeneous class of primitive stone monuments, their builders, and their associated culture. These monuments are ultimately due to a single originating impulse. The first impetus to massive stone architecture was given by the invention of metal-working, even when stone tools continued in general use, as in the pyramids of Egypt. Knowledge of these great achievements was disseminated slowly by migration and trade. See Archaeology; Dolmen; Menhir; Stone Age; Stone Monuments.

MEGALOSAURUS.

Extinct fossil reptile found in the Jurassic and Cretaceous deposits of Europe, part of Asia and N. America. It was a large carnivorous dinosaur, from 15 ft. to 20 ft. in length, possessing formidable teeth, a long, heavy tail, and large hind legs, the toes of which were provided with strong claws. See Dinosaur.

MEGAPHONE. Appliance for magnifying or collecting sound. One form is a speaking-trumpet, used largely at sea, for enabling the voice to be heard at a distance. It consists of a hollow cone of papier mâché,

fibre, etc., fitted at the smaller end with a mouthpiece. Another is a hearing-trumpet for use by deaf persons, or to enable ordinary sounds to be heard at a distance.

MEGARA. City of ancient Greece. It lay opposite the island of Salamis, 1 m. from the sea and about 30 m. from Corinth. Capital of the district of Megaris, it early became important, and founded the colonies of Chalcidion, Byzantium, and the Sicilian Megara. Megara was a member of the Athenian alliance until the pro-Athenian democratic government gave place to an oligarchy in 441. During the Peloponnesian war Megara took the side of Sparta.

MEGATHERIUM. Large extinct mammal whose fossil remains are found in Pleistocene deposits of S. America. One of the edentata, allied to the anteaters and sloths, it was about 20 ft. in length, and fed upon small twigs and leaves of trees. See Fossil.

MEGIDDO. Place in Palestine, in the plain of Esdraelon. Siseria was defeated near; Solomon restored the fortifications, and it was the scene of the deaths of Ahaziah and Josiah. It was captured by the British, Sept. 19, 1918. Viscount Allenby took his title from it. See Armageddon; Palestine.

MEHEMET ALI (1769-1849). Pasha of Egypt. Born at Kavala of an Albanian family, he obtained recognition in 1805 as pasha of Egypt. He reformed the navy and army, established factories, and introduced cotton growing. In 1824 the sultan called upon Mehmet for help against the Greeks, promising him Syria as a reward. The promise, however, was not fulfilled, so Mehmet seized Syria by force, and secured a good part of the rest of Asia Minor. By British intervention a compromise was arranged, by which Mehmet was made hereditary pasha of Egypt and governor of the Sudan. He died Aug. 2, 1849.

MEIGHEN, ARTHUR (b. 1874). Canadian politician. Born June 16, 1874, he became a barrister, and began to practise at Portage la Prairie, as member for which he entered the Dominion House of Commons in 1908. A Conservative in politics, he became solicitor-general in 1913. In Aug., 1917, Meighen entered Borden's coalition cabinet as secretary of state and minister of mines. Later he was minister of the interior, and in July, 1920, succeeded Sir Robert Borden as premier. Defeated in 1921, he resigned, but was again premier, July-Sept. 1926.



Megalosaurus. Prehistoric monster reptile of Europe and India
From reconstruction in the Natural History Museum, S. Kensington

first important work was *The Little Messenger*, 1836. In 1855 his picture *La Rixe* won him fame. His chief pictures include *The Cavalry Charge*. The *Amused Cavalier*, *Soldiers Gambling*, and *Cuirassiers*. He painted a few portraits (Salon). 1877, Col. Félix Massue, 1807, Wallace Coll. The latter Collection has a good many examples of his work, such as *A Sentinel: time of Louis XIII*, 1851; *The Guard Room*, 1857;

The Lost Game, 1858; *Napoleon I and his Staff*, 1868. He died Jan. 31, 1891.

MEISTERSINGER OR **MASTERSINGER.** Member of guilds of musicians and poets, founded in Germany from the 14th to 16th centuries. The earlier Minnesingers (q.v.) were connected with the courts, but on the decline of feudalism the cultivation of the art of singing passed to the burgher class. Heinrich von Meissen, called *Frauenlob*, founded the first company of Meistersingers at Mainz in 1311. At Ulm the Meistersingers survived till 1839.

MEKONG. River of S.E. Asia. It rises in the Tibetan plateau, and flows S. through China and Indo-China. It forms for part of its course the boundary between Siam and Indo-China, and, entering Cambodia and Cochin China, empties itself in the China Sea. Its length is 2,800 m.



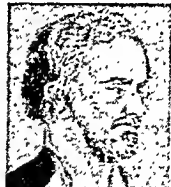
Megatherium. Giant ground sloth of the Pleistocene age
Amer. Mus. Nat. Hist.

MELAMPUS. In Greek legend, the first prophet and physician among mankind. Having the power of divination and an understanding of the language of birds and beasts, he eventually became king of a third of Argos. Melampus is said to have learnt the art of medicine from Apollo.

MELANCHOLIA. Disease of the mind characterised by marked depression. Melancholia may be exhibited alone, but sometimes it is associated

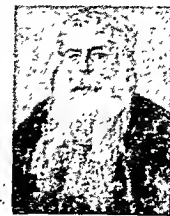
with periods of mania (q.v.), forming one phase of the disease known as manic-depressive insanity. It may also be exhibited in other forms of insanity. The cause of the condition is not known. Delusions are frequent, and often of a religious character. There is considerable risk of suicide.

MELANCHTHON, PHILIP (1497-1560). German reformer. His name was Schwarzert, i.e. black earth, which was rendered into Greek as Melanchthon. He was born at Bretten, in the Palatinate, Feb. 16, 1497. After teaching philosophy and Greek at Tübingen, in 1518 he was appointed professor of Greek at Wittenberg, where he came into close contact with Luther, became a Protestant, and three years later published his *Commonplaces of Theological Matters*. The Augsburg Confession was drawn up by him in 1530, and he became recognized as the leading scholar of the German Reformation. On the death of Luther in 1546 he became the dominant spirit in the movement, and remained so until his death at Wittenberg, April 19, 1560. See Luther; Reformation.



Philip Melanchthon, German reformer

MELANESIA (Gr. melas, black; nēsos, island). Collective name of a number of groups of islands in the Pacific Ocean. They lie between the equator and the Tropic of Capricorn, and between Papua and the Fiji Islands. The groups include the Solomon, Admiralty, Loyalty, Bismarek, Santa Cruz, and New Hebrides. They were politically apportioned among Great Britain, France, and Germany, but the German



J. L. E. Meissonier, French painter

possessions were captured early in the Great War, and are now administered by Australia and New Zealand.

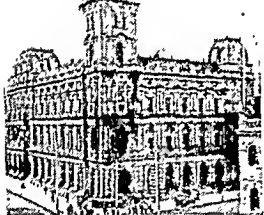
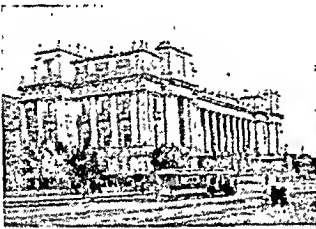
MELBA, DAME NELLIE (h. 1859). Professional name of the vocalist, Helen Porter Armstrong. Born May 19, 1859, at Burnley, Melbourne, Australia, she studied in Paris and became a professional singer, taking the name of Melba as a tribute to Melbourne. She first appeared in opera in Brussels in 1887, and her career after this was one of marked success, especially in London, Paris, and New York. In 1918 she was created D.B.E. Her book *Melodies and Memories* appeared in 1925.



Dame Nellie Melba,
Australian singer
Soprano

MELBOURNE. Market town of Derbyshire, 7 m. S.E. of Derby on the L.M.S. Rly. It has a Norman church. Melbourne Hall has Dutch gardens. Thread, boots, and silk are manufactured, and there are market gardens. Market day, Sat. Pop. 3,467.

MELBOURNE. Capital of Victoria, Australia. It is situated at the N. of Port Phillip, on the river Yarra, which flows into Hobson's Bay, an inlet of Port Phillip. The city proper covers about 8,000 acres, and there are extensive suburbs



Melbourne. General Post Office.
Above, left, Parliament House;
right, Collins St., looking west

ecclesiastical buildings include S. Patrick's R.C. cathedral and the Anglican cathedral of S. Paul. Apart from the shipping, there are foundries, flour and woollen mills, boot and clothing factories, potteries, soap works, tan yards, and wool-washing works; and gold, meat, wool, etc., are exported.

First occupied by whites in 1835, Melbourne was in 1837 named after Lord Melbourne. It was made an episcopal see in 1849. When the goldfields were opened in 1851, and what was then Port Phillip province became the colony of Victoria, Melbourne was made its capital. In 1901 it became the temporary capital of the Commonwealth. At the end of 1928 the pop. (including suburbs) was estimated at 1,000,000. See Australia; Port Phillip; Victoria.

MELBOURNE, WILLIAM LAMB, 2ND VISCOUNT (1779-1848). British politician. A son of Peniston Lamb, created Viscount Melbourne in 1781, he was born March 15, 1779. In 1806 he entered Parliament as Whig M.P. for Leominster. In 1812 he lost his seat, but from 1816 to 1829, when he succeeded to the peerage, he represented several constituencies. In 1830 Melbourne became home secretary under Earl Grey,



Lord Melbourne,
British politician
After Lawrence

and four years later succeeded him as prime minister. He resigned a few months later, but again became premier in April, 1835. In 1838 he resigned, but returned at the instance of the young queen, to whom he acted as instructor and guide. He finally left office in Aug., 1841. He died Nov. 24, 1848.

His brother Frederick, British ambassador in Vienna, 1831-41, succeeded to his title, but on his death in 1853 it became extinct. Consult Lord Melbourne, Bertram Newman, 1930.

MELCHETT, ALFRED MOND, 1ST BARON (h. 1868). British politician. Born at Farnworth, Lancs, Oct. 23, 1868, a son of Ludwig Mond, the scientist, he became a barrister, being also a member of the firm of Brunner, Mond & Co. In 1906 he was elected Liberal M.P. for Chester, and in 1910 for Swansea, being created a baronet in the latter year. In 1916 Mond joined the coalition government as first commissioner of works. He was minis-



Lord Melchett,
British politician
Russell



ter of health, 1921-22, and in 1924 was elected M.P. for Carmarthen. In 1926 Mond joined the Conservative party. As head of Imperial Chemical Industries he became one of the leading industrialists in the country.

MELCHIZEDEK. Priest-king of Salem. He is counted as Priest of the Most High God, and Abraham received his blessing and paid him tithes after one of his victories. (Gen. 14). As a priest-king with high prerogatives, Melchizedek is regarded in Ps. 110 and Heb. 5 and 7 as a type of the Messiah.

Melcombe Regis. District of Dorsetshire, within the borough of Weymouth (q.v.).

MELEAGER.

In Greek legend, a famous hero and hunter. The goddess Artemis, offended by his father Oeneus, sent a monstrous boar to ravage the land of Actolia. All the heroes were invited to assist in the killing of the boar, and among them came the famous huntress Atalanta. The boar was finally killed by Meleager, who gave the skin and head to Atalanta, as she had given the animal the first wound. See Atalanta; Calydon.



Meleager with his hound and
the head of the boar
From a statue in the Vatican

MELILLA. Seaport of Morocco. On the N.E. coast, it is within the Spanish zone, and forms the main port of entry into the Rif country. It lies on the E. side of the mountainous promontory of Tres Forcas. Extensive harbour works have been under-

taken by the Spanish, and narrow-gauge railways link it to Seluan (Zeluán) and Taferit, and to the lead mines at Afra Minas. Fighting took place in the Melilla zone in July, 1921, the tribesmen inflicting a serious defeat on the Spanish troops. Pop. 61,230.

MELILOT (*Melilotus officinalis* and *M. alba*). Herbs of the order Leguminosae, natives of Europe and Asia. The leaves are divided into three narrow, oblong, toothed leaflets. The flowers in appearance are like those of furze, but only a quarter of an inch long, drooping, in an erect one-sided spray.

Melinite. Name under which trinitrophenol (q.v.) is used in France.

MELKART (king of the city). Phoenician deity. He was especially worshipped in Tyre, where Hiram I, about 950 B.C., erected the great temple mentioned by Herodotus. Identified with Heracles, Melkart—whose name in Greek was Melicertes—was in part a sun-god, in part the patron of mariners.

MELKSHAM. Urban dist. and market town of Wiltshire. It stands on the Avon 6 m. from Chippenham and 98 m. from London, and is served by the G.W. Rly. The church has a little Norman work and a fine Perpendicular chapel. Market day, alternate Tues. Pop. 3,596

MELLON, ANDREW WILLIAM (h. 1855). American financier. Born at Pittsburg, March 24, 1855, he entered the banking house of Thomas Mellon and Sons. Later he became president of the Mellon National Bank. In 1921 he resigned to become secretary of the treasury under Harding, a post he retained under Coolidge and Hoover. He was responsible for making arrangements about the debts owing to the United States by several European nations and for measures to reduce the internal debt. Mellon has enormous interests in the industries of Pennsylvania.

MELLS. A village of Somerset, 3½ m. from Frome. Mells Park was long the seat of the Horner family. In 1927-28 excavations resulted in unearthing a Roman camp here, and Roman remains were found. Pop. 830.

MELOCACTUS. Genus of perennial succulent plants of the order Cactaceae. Natives of Mexico, Brazil, and the W. Indies. They have globular, ribbed stems, with a short central cylindrical extension upwards which is clothed with woolly hairs and soft spines. The ridges of the swollen base bear stouter spines in clusters at regular intervals. The rosy, tubular flowers are produced at the summit of the short column. The Turk's cap (*M. communis*), is the best known species.

MELODRAMA (Gr. *melos*, song; *drama*, action). Strictly, a stage play in which appropriate music, vocal and instrumental, is introduced to heighten emotional or dramatic effect. In its original form it is said to have been first perfected in France as a natural and orderly development of opera, differing essentially from that higher form of dramatic art in that the music was accessory to, and the songs were interpolations in, spoken dialogue, whereas in opera the story is told exclusively in recitative and aria. Music gradually became more and more subordinate to sensational incident and sentimental appeal. Modern melodrama is a highly ingenious composite of sensational drama derived from tragedy and of domestic drama derived from the comedy of life.

MELON (*Cucumis melo*). Plant of the order Cucurbitaceae, grown for its fruit, which has a sweet and delicately flavoured



Melon. Specimen
of the fruit

pulp. It is a trailing plant, and, a native of Asia, was introduced into Britain about 1570. It is cultivated in frames and hothouses, in the same manner as the cucumber. The water melon (illus. p. 670) is grown in most warm countries. Its botanical name is *Citrullus vulgaris*. See Cucumber; Gourd.

MELROSE. Burgh of Roxburghshire. It stands on the Tweed, 37 m. from Edinburgh on the L.N.E.R. An ancient town pleasantly situated at the base of the Eildon Hills, Melrose is chiefly noted for the abbey founded in 1136 by David I, once the most magnificent building in Scotland, and now a splendid ruin. In 1918 it was presented to the nation by the duke of Buccleuch. Melrose has a hydropathic establishment, and in the market place is a market cross dating from 1642. Pop. 2,155.



Melrose Abbey. Ruins of the splendid building founded in 1136 by David I

MELTHAM. Urban dist. and town of Yorkshire (W.R.) It is 5 m. S.W. of Huddersfield on the L.M.S. Rly., and has cotton, woollen, and thread industries. Pop. 5,058.

MELTON MOWBRAY. Market town and urban dist. of Leicestershire. It is 14 m. from Leicester and 102 from London. Served by the L.M.S. and L.N.E. Rlys., Melton Mowbray stands where the little rivers Eye and Wreak join. The chief building is the beautiful church of S. Mary, with a fine central tower, partly Early English. The town is famous for its pork pies and cheese, and is also a hunting centre, being in the Quorn country. Market day, Tues. Pop. 10,010.

MELVILLE OR MELVILL. ANDREW (1543-1622). Scottish reformer. He was born at Baldovie, Forfarshire, Aug. 1, 1545. In 1568 Beza procured for him the appointment of professor of humanity at Geneva, where he remained until 1574, when he returned to Scotland and became principal of Glasgow College, and later of S. Mary's College, St. Andrews. He was a strong Presbyterian, and his outspoken utterances more than once brought him into trouble. In 1597 he was deprived of the rectorship of St. Andrews, and was imprisoned for five years in the Tower. On his release, in 1611, he went to France, and became professor at Sedan, where he died.

MELVILLE, HERMAN (1819-91). American author. Born in New York City, Aug. 1, 1819, of Scottish descent, he passed some years at sea, meeting with many adventures before he returned to Boston in 1844. In 1846 he published the first of his books, *Typee*; a *Peep at Polynesian Life*, a fascinating narrative of life in the Pacific. His later books included *Omoo*, 1847, and *A Voyage Thither*, 1849; *Redburn*, *His First Voyage*, 1849; *White Jacket*, or *The World in a Man-of-War*, regarded generally as the best of his works, 1850; and *Moby Dick*, or *the White Whale*, 1851. He died in New York, Sept. 27, 1891.

MELVILLE ISLAND. Island of British N. America in the Arctic Ocean, between Bathurst and Prince Patrick islands. Its maximum length is 210 m., and its width about 130 m. It was discovered by Parry, who wintered here, 1819-20.

Melville Bay is an opening of Baffin Bay on the coast of Greenland. Melville Peninsula is a projection from the Canadian mainland. Its length is 265 m., and average breadth 110 m.

Melville Sound is a large opening of the Arctic Ocean situated between Melville Island on the N. and Victoria Island on the S. Its length is 240 m., and width 140 m. It communicates with Beaufort Sea. See Canada.

MEMEL. Town, seaport, and territory of Lithuania, also known as Klaipeda. It stands on the Baltic, at the N. end-of the Kurisches Haff. The people are mainly occupied in shipping timber and grain and exporting fish. There is some shipbuilding. Pop. 36,600.

Memel was founded by the Teutonic Order in 1252, and later became part of Prussia, and so of the German Empire. By the treaty of Versailles the town and the surrounding territory were detached from Germany, and in 1923 were given to Lithuania, on the condition that Poland had the right to use the port. The territory has an area of 1,026 sq. m. and has 145,000 inhabitants.

MEMLING OR MEMLING. HANS (c. 1430-94). Flemish painter. He was apprenticed to a painter in Cologne or Mainz before going to Bruges about 1465. He became painter in Bruges in 1467, Nicolas Spinelli (triptych (Chatsworth)). In 1479 he painted *The Adoration of the Kings in S. John's Hospital, Bruges*, and in 1480 the large *Christ the Light of the World* (Munich). The altar-piece, *S. Christopher* (Bruges Museum), was painted in 1484. In 1489 he completed the shrine of S. Ursula at Bruges. He died at Bruges, Aug. 11, 1494.



Hans Memling
Supposed self-portrait
of the Flemish artist,
at Frankfurt

MEMNON. In Greek mythology, son of Tithonus and Eos (Dawn). He came to help the Trojans against the Greeks in the last period of the war. Antilochus, son of Nestor, fell before him, but he was killed by Achilles.

MEMPHIS. Ancient capital of Lower Egypt. On the left bank of the Nile, 14 m. S. of Cairo, it was founded by Menes, the first historical king of ancient Egypt. The Greek form of the Egyptian Mennofer, good house, denoting originally Pepi I's Vith dynasty pyramid, the name appears in Hebrew as Moph (Hosea) and Noph (Isaiah). Before the time of Menes there had been a city here called White Wall. Under the kings of various dynasties it was embellished with pyramids and palaces, and in spite of foreign invasions and other vicissitudes it remained an important place until the rise of Alexandria, although it was not constantly the country's capital. The existing monuments include the colossal statues of Rameses II. The ruins were mostly employed for building Cairo. Petrie excavated the Ptolemaic temple, Apries' palace, XXVth dynasty, and many workshops and dwellings.

Memphis is also the name of a city in the United States, a prosperous river port. Pop. 162,000.

Menai Bridge. Urban dist. of Anglesey. It is on Menai Strait, N.E. of the suspension bridge. Pop. 1,767.

MENAI STRAIT. Channel between Carnarvonshire and Anglesey, Wales, 14 m. long and from one-eighth to 2 m. in breadth. The Menai suspension bridge (see illus. p. 301) which carries the turnpike road, was constructed by Telford and opened in 1826. It is 1,710 ft. in length and 100 ft.

above high-water mark. The Britannia tubular bridge was erected by Stephenson, and opened in 1850. It is 1,841 ft. long and 104 ft. above high-water mark, and is traversed by the L.M.S. Rly.

MENANDER (342-291 B.C.). Athenian comic poet, chief representative of the New Comedy. He is said to have written 105 comedies. Until the 20th cent. only fragments of his works were known, but papyrus finds in Egypt brought to light more than 1,000 lines from four plays, from which an idea of his style and plots can be formed. Menander was especially strong in moral maxims. Terence, called by Caesar the "half Menander," adapted four of his comedies from Menander.

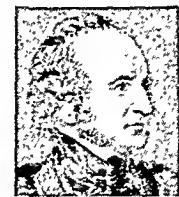
MENDELISM. Laws of heredity based on the discoveries of Mendel. An Austrian monk, Gregor Johann Mendel (1822-84) was born near Odrau in Austrian Silesia, and in 1843 became an inmate of an Augustinian monastery at Brunn. From 1860 he was abbot, while for about 15 years he taught natural history in the school at Brunn. He carried out experiments in the monastery garden by which he showed that the laws of inheritance are not haphazard.



Gregor Mendel,
Austrian scientist

Some of the characters passed on to progeny are what Mendel called dominant, and appear in hybrids, while others are recessive and, although not evident in hybrids, become so in their progeny, among which quite definite proportions can be predicted to possess the dominant or the recessive character. This he demonstrated in peas, and it has been found true for other plants and animals, and in human beings with regard to such characters as the colour of the eyes and hair, and in the inheritance of diseases such as haemophilia. Mendel's laws lacked general recognition until 1900. See Heredity.

MENDELSSOHN-BARTHOLDY, JAKOB LUDWIG FELIX (1809-47). German composer. Born at Hamburg, Feb. 3, 1809, at the age of 10 he played the piano at a public concert in Berlin. Two years later he became known as a prolific composer of sonatas for piano and violin, songs, and symphonies. In 1825 he wrote a two-act opera, *Camacho's Wedding*, and in Aug., 1826, completed the overture to *A Midsummer Night's Dream*, which immediately established the 18-year-old



J. L. F. Mendelssohn-Bartholdy,
German composer

genius as one of the principal composers of his age. In 1829 he visited London, and afterwards made a tour of Scotland, which inspired him to write the *Hebrides Overture* and *Scotch Symphony*. From 1833 he occupied various official positions as conductor and musical director at Düsseldorf, Leipzig,



Menai Strait, showing, left, the suspension bridge, and, right, the Britannia tubular bridge, which cross the channel

and Berlin. In 1843 he founded the Leipzig Conservatoire, of which he was the first director. On Aug. 26, 1846, he produced Elijah at the Birmingham Festival. He died at Leipzig, Nov. 4, 1847.

MENDES. Grecised name of an ancient city near Tmai el-Amidid. S.E. of Mansura, Lower Egypt. In the IInd dynasty it was already the seat of worship of the sacred ram. The cult, suppressed by the Persian invaders, was revived by Ptolemy II Philadelphus, 309-246 B.C. Some stone tombs in which the rams were interred are extant.

MENDÈS, CATULLE ABRAHAM (1841-1909) French poet, novelist, and playwright. Of Jewish origin, he was born at Bordeaux on May 22, 1841, and founded the *Revue Fantaisiste* in 1859, an early rallying-point of the Parnassian movement. Among his early books of poems were *Philomèle*, 1863, and *Odelette Guérière*, 1870. He published novels and volumes of short stories, also plays and operettas. From 1893 dramatic critic of *Le Journal*, he was accidentally killed, Feb. 8 1909.

MENDIP HILLS. Plateau of S.W. England, between the valleys of the Parret and Salisbury Avon in Somerset. Composed of carboniferous limestone, its hills contain swallow holes, caverns, lead mines, and coal. The highest point is Black Down, 1,068 ft.

MENDOZA, DANIEL (1764-1836) Jewish pugilist. Born in Aldgate, London, his first big fight was when he beat Sam Martin, the Bath butcher, at Barnet, April 17, 1787. A very quick and clever fighter, he twice defeated Richard Humphries and William Warr, but was beaten by John Jackson at Hornchurch, April 15, 1795. Mendoza's last appearance in the ring was in July 1820, when he was defeated by Tom Owen. He wrote *The Art of Boxing*, 1789. Mendoza died in London, Sept. 3, 1836.



Menelaus,
Spartan king

MENELAUS. In Greek legend king of Sparta, brother of Agamemnon, and husband of Helen. At the Spartan court Paris, son of Priam king of Troy, was hospitably received, but during the absence of Menelaus in Crete he carried off Helen, from which resulted the Trojan War. At the capture of Troy, Menelaus regained possession of Helen. See Helen.

MENELEK (1844-1913). Emperor of Abyssinia. Born at Choa, Aug. 18, 1844, he was the descendant of a long line of Ethiopian kings. Italian operations on the coast of the Red Sea in 1885 threatened Abyssinian independence, and the treaty of Uccialli signed by Menelek in 1889 was interpreted as giving Italy a protectorate over Abyssinia. But on March 1, 1896, the Italians under General Baratieri suffered a disastrous defeat at Adowa. Eritrea was given to Italy, and Menelek was left in peace to develop his country. He ended the whole an English slavery, and encouraged Addis Ababa, Dec. 12, 1913.



Menelek II,
Abyssinian emperor

MENHIR (Celt., long unshewn pillar-stone with the largest in Europe is the once 67 ft. high, weighing 342 tons, near Carnac, Morbihan. There are many in France, besides 4,600 in rows or circles, and they are scattered over Dartmoor, Cornwall, and the upland of Wales.

Sometimes perforated, they occasion much local folklore. Many stand near neolithic sepulchres. In Britain, Scandinavia, and elsewhere they often bear cup and ring markings, ogams, and Christian devices. They occur along the megalithic track in N. Africa, Syria, India, and the Pacific. See Carnae; Dolmen.

MENIÈRE'S DISEASE. Disease characterised by sudden attacks of intense giddiness associated with noises in the ears, jerking of the eyeballs, and other symptoms. Due to disease of the labyrinth of the ear, it was first described in 1861 by the French doctor, E. A. Ménière. Quinine sometimes affords relief.

MENIN (Flemish, Meenen). Town of Belgium. On the Franco-Belgian frontier, it lies on the Lys, 6½ m. by rly. W.S.W. of Courtrai. Before the Great War Menin was a prosperous centre of the Flemish spinning, lace-making, and tobacco industries, but its position near the fighting line led to severe damage; the Ypres-Menin road especially was the scene



Menin Gate at Ypres, rebuilt and unveiled in 1927 as a memorial to British soldiers who fell here. Above, the devastated road from Menin to Ypres

of much heavy fighting throughout the war. In July, 1927, Lord Plumer unveiled a war memorial on the Menin Road at Ypres. Called the Menin Gate, this is a magnificent arch erected in honour of the men who fought here, 1914-18. Pop. 18,769.

MENINGITIS. Inflammation of the meninges, the membranous coverings of the brain. Simple acute meningitis may be due to injury of the brain, or abscess or extension of a septic inflammation from the ear, and may also arise in the course of acute infectious diseases, such as small-pox. Tuberculous meningitis is most often met with in children. Cerebro-spinal fever is a form caused by infection by a micro-organism. Syphilis is another cause. The death rate in cases of meningitis is high, and if recovery occurs there may be permanent paralysis of groups of muscles, or impairment of mental faculties. Treatment is mainly symptomatic.

MENPES, MORTIMER (b. 1859). Anglo-Australian painter and etcher. Born in Australia, he came to England, and studied in London, afterwards travelling in nearly all parts of the world. Besides producing much original work, he perfected a process, known by his name, for reproducing oil paintings, founded the Menpes Press, instituted fruit as at Pangbourne, and wrote a number of including entertaining reminiscences of J. M. Whistler, his friend and confidant. Menpes did much to revive the art of etching in colour.

MENSTRUATION. Periodic discharge of mucus and blood which occurs in women. The cause and object of this function are not fully understood. In Great Britain, men-

struation appears between the ages of 11 and 15, but in certain races, usually in warmer climates, it tends to appear earlier. The cessation of menstruation is termed the climacteric or menopause. Disorders in this function include amenorrhoea, or abnormal absence of the flow; menorrhagia, or excessive flow; and dysmenorrhoea, or painful menstruation. A doctor should be consulted as to suitable treatment.

MENTANA. Village of Italy. It is 12 m. N.E. of Rome, near the site of the ancient Nomentum. In the locality Garibaldi and his patriots were defeated by the papal and French troops, Nov. 3, 1867. Pop. 2,937.

MENTEITH, LAKE OF. Lake in the S.W. of Perthshire, Scotland. It is 17 m. W.N.W. of Stirling, and is 1½ m. long and 1 m. broad. It contains three islands, on one of which, Inchmahome, are the remains of a priory.

MENTHOL. Crystalline constituent of peppermint oil, which deposits from the oil on long keeping or on cooling to a low temperature. It is also known as peppermint camphor. The oil of the Japanese peppermint (*Mentha arvensis*, or *piperascens*) contains such a large proportion of menthol that it is solid at ordinary temperatures. Menthol is employed in medicine as a local anaesthetic, especially in neuralgia. See Peppermint.

MENTMORE. Village of Buckinghamshire. It is 3½ m. S.W. of Leighton Buzzard, near Cheddington Junction, on the L.M.S. Railway. Here is Lord Rosebery's seat.

MENTONE. Health resort of France. It is on the coast of the Riviera, 14 m. N.E. of Nice. The neighbourhood is noted for its orange and lemon groves, mild climate and charming surroundings. Since 1861, when the prince of Monaco sold his rights, it has been French. Olive oil and perfumes are exported. Pop. 22,604.



Mentone. Popular health resort of the French Riviera

MENTOR. In Greek mythology, the faithful and prudent friend to whom Odysseus, when he left home for the Trojan War, entrusted the care of his affairs and the education of Telemachus. The name Mentor has become synonymous with a wise counsellor.

MEPHISTOPHELES. In German legend, the familiar spirit attendant upon Faust. He is summoned, with terrible incantations, by the doctor, as recorded in the old History of Dr. Faustus. Frequently misunderstood as being Satan himself, he is properly a subordinate demon. The name, perhaps of Hebrew origin, is found in *The Merry Wives of Windsor* in the form Mephostophilus. See Faust.

MEQUINEZ OR MEKNES. City of Morocco, in the French zone. It is 34 m. W.S.W. of Fez, and lies in a fertile valley with the forested slopes of the Middle Atlas to the S.E. It is a summer residence of the Sultan. Pop. 29,930.

MERANO. Inland health resort of N. Italy, in the Trentino. The German name is Meran. It is 15 m. N.W. of Bolzano (Bozen). In the neighbourhood is the half-ruined castle,

the old residence of the counts of Tirol. The district is noted for its orchards and vineyards. Pop. 19,721

MERCANTILE MARINE, THE. Name given to shipping employed in commerce. It includes all vessels carrying foods and passengers. Those engaged in it are described as members of the merchant service.

The strength of the British mercantile marine service on June 30, 1929, was 20,166,331 tons. The number of seamen employed in trading vessels on March 31, 1928, was 200,113, of whom 52,441 were lascars and 15,291 foreigners.

For merchant shipping there are special laws the chief being the Merchant Shipping Act of 1894. The controlling authority is the Board of Trade, which has surveyors at all the principal ports, and their business it is to see that all ships are seaworthy. The Board has also a consultative branch at 28, Great Smith St., Westminster, S.W. (Consult My Own Lawyer, 1930.)

In April, 1928, King George created a new office, Master of the Merchant Navy and Fisheries, and appointed the Prince of Wales to be its first holder.

In Dec., 1928, Queen Mary unveiled a memorial on Tower Hill, London E.C., to 12,649 officers and men of the merchant service and fishing fleets who lost their lives in the Great War. The memorial was designed by Sir Edwin Lutyens.

MERCATOR, GERARDUS (1512-94). Flemish geographer. His real name was Gerhard Kremer. Born at Rupelmonde, March 5, 1512, he devoted himself to mathematics and geography. His survey of Flanders was made 1537-40, his Map of the World in 1538, and in 1541 he constructed his terrestrial globe. In 1568 he produced the first maps on his system of projection with parallels and meridians at right angles. Other maps followed, and in 1585 the first portion of his atlas was produced. He died Dec. 2, 1594.

MERCER. Person whose business consists in retailing silks, velvets, and other rich stuffs. The Mercers' Company is the premier livery company of the city of London. It governs St. Paul's School, Hammersmith, and the Mercers' School, Holborn; and in addition to administering many charities is trustee of the estates of Sir Richard Whittington and Dean Collet. At the dissolution of the monasteries the company purchased the site of the hospital of St. Thomas of Acon, in Cheapside, and in 1519 erected a chapel and hall upon it. This hall and much other property was burnt in 1666. The hall was rebuilt in 1672 and 1879. With valuable portraits and other relics, the Company possesses in the Legh Cup a fine example of English medieval plate.

MERCER, JONX (1791-1866). English dye chemist. Born at Dean, near Blackburn, Feb. 21, 1791, he was apprenticed in 1809 at the Oakenshaw Print Works, where he studied dyeing. He made many important discoveries connected with dyeing and calico printing, and is chiefly known for the invention of mercerisation, a process by which cotton is given a silky lustre or sheen resembling silk. Elected F.R.S. in 1852, Mercer died Nov. 30, 1866.

MERCHANT. Person whose business is the purchase and sale of commodities.

Merchant Adventurers was the name of an English regulated company for the conduct

of foreign commerce. Its growth coincided with the great development of the English cloth trade in the 14th century. Its members were the leading merchants from all parts of England, and their foreign trading centre was fixed at Bruges by Edward III in 1344.

MERCHANT TAYLORS' COMPANY. Seventh in order of precedence of the twelve great livery companies of the city of London. It received the first of its numerous charters from Edward III in 1327. The site of the present hall in Threadneedle Street, E.C., was acquired in 1331, and the hall was rebuilt after the fire of 1866.

The company founded in 1561 the Merchant Taylors' School, in Suffolk Lane, Upper Thames Street. This was removed to Charterhouse Sq., E.C., in 1873-75. It is now a day school for about 500 boys, and its governors from the first have been members of the company. In 1930 it was decided to move the school from London to a site in Hertfordshire.

The Merchant Taylors' School at Great Crosby, Liverpool, was founded in 1618 by a London merchant tailor, and until 1910 was controlled by the Merchant Taylors' Company.

MERCIA. One of the kingdoms of England in Anglo-Saxon times. At first it only included Derby, Stafford, Warwick, Nottingham, and Leicester, but gradually it came to embrace the whole district between the Thames and the Humber, except East Anglia, and including London. Lichfield and Tamworth were its chief towns, and Repton, near Derby, was an important place. The kingdom came into existence about 582. At first subject to Northumbria, in the 7th century, under Penda, it became independent, and other kingdoms were brought under its authority. It was conquered by Egbert in 825.

MERCIER, DESIRÉ JOSEPH (1851-1926). Belgian primate. Born at Braine-l'Alleud, Belgium, he became a priest, taught philosophy at a seminary in Malines, 1877-82, and in the latter year was appointed to the chair in Aquinas' philosophy founded at Rome by Leo XIII. Consecrated archbishop of Malines and primate of Belgium in 1906, he was made a cardinal in 1907. In 1894 Mercier founded, and edited till 1906, the *Revue Néoscholastique*. Mercier's pastoral letter of Christmas, 1914, urging the Belgian people to continue their allegiance to King Albert, resulted in his being imprisoned in the episcopal residence. He published his *War Memories* in 1920, and died Jan. 23, 1926.

Mercury. In Roman mythology the god of trade. The Romans identified him with the Greek Hermes. See Caduceus; Hermes.

MERCURY. Nearest planet to the sun, around which it revolves at a mean distance of 36,000,000 m. in a period of 88 days. The orbit is extremely eccentric. The mass of the planet is one-eighth that of the earth, its density about three-fifths, and its diameter, according to See, 2,702 miles. Its orbit is subject to considerable perturbations, which has suggested the theory that there exists another planet between Mercury and the sun. Such a planet has not been found, and it has been suggested that the theory of relativity might account for these irregularities. Mercury can be seen under favourable conditions a short while after sunset or before sunrise.

MERCURY OR QUICKSILVER. Metallic element, chemical symbol, Hg; atomic weight, 200.61; atomic number, 80; specific gravity at normal temperature, 13.59; melting point, -39.5° C. It is slightly volatile at normal temperature, and boils at 357° C. (674.6° F.). It is a poor conductor of heat and electricity. It has a remarkable power of dissolving, or combining with, other metals to form an amalgam (q.v.).

Mercury occurs native, usually in the form of fine globules scattered through the body of a mercurial ore, but not infrequently in pockets in large quantities. The ores of the metal comprise born quicksilver or calomel, a chloride; coccinite, the iodide; tiemannite, the selenide; coloradoite, a telluride; onofrite, from San Onofre, Mexico; mercuric fahl ore, and some amalgams of silver and gold. The metal is obtained almost entirely from cinnabar (q.v.), a sulphide. Mercury is used in the recovery of gold and silver by the amalgamation process, in the preparation of barometers (q.v.) and thermometers, for coating the backs of mirrors, and for the preparation of amalgams. The metal is largely used in medicine, while it enters into a number of important compounds.

MERCY, SISTERS OF. Religious order of women who devote themselves to active work among the poor and sick. They differ from nuns in not being enclosed within their convents. All sisters of mercy take the threefold vow of poverty, chastity, and obedience; some annually, and others for life. In the Church of Rome the term is usually restricted to a congregation founded at Dublin in 1831.



Sister of Mercy

MEREDITH, GEORGE (1828-1909). British poet and novelist. Born Feb. 12, 1828, at 73, High Street, Portsmouth, his father was Augustus Armstrong Meredith, a naval officer. He was articled to a London solicitor of literary tastes, but before he was 21 he had turned to letters, his first poem, *Chillianwallah*, appearing in *Chambers's Journal*, July 7, 1849. On August 9, 1849, he married Mary Ellen, daughter of Thomas Love Peacock, the novelist. In 1851 he published *Poems*, which included that masterpiece *Love in the Valley*.

The Ordeal of Richard Feverel, 1859, won the author new friends, and in 1861 he published *Evan Harrington*. *Modern Love* and *Other Poems*, 1862, gave abundant fulfilment of the rich promise of the earlier *Poems*. Meredith, who had now become literary adviser to the house of Chapman and Hall, married in 1864 Marie Vulliamy, three years after the death



George Meredith, British novelist

of his first wife. In the same year he published *Emilia* in England, later to be renamed *Sandra Belloni*. *Rhoda Fleming* followed in 1865. In 1863 he settled at Flint Cottage, Box Hill, his home for the rest of his life. In 1871 came the splendid romance *The Adventures of Harry Richmond*; in 1876 *Beauchamp's Career*; and in 1879 *The Egoist*. After *Poems* and *Lyrics of the Joy of Earth*, 1893, including some of the finest of his nature poetry, there came *Diana of the Crossways*, 1885. Later books were *Ballads*



Mercantile Marine Standard cap badge



Merchant Taylors' Company arms



Mercers' Company arms

and Poems of Tragio Life, 1887; A Reading of Earth, 1888, One of our Conquerors, 1891; Lord Ormont and his Aminta 1894; and The Amazing Marriage, 1895. In 1905 Meredith received the Order of Merit. On May 18, 1909, he died at Box Hill. Consult George Meredith, S. M. Ellis, 1919; and Life, J. B. Priestley, 1926.

MERGANSE (Lat. mergus, diver; anser, goose). Genus of marine diving ducks, including about six species. Three species occur regularly in the British Islands; of these the goosander (q.v.) is the largest.

The red-breasted merganser (*M. serrator*) is distinguished by the crested head and the pale chestnut colour of the lower neck and breast. It is a resident of the N. coasts of Scotland and of the Orkneys, Shetlands, Ireland, and Hebrides, and in winter visits the coasts farther S. It is usually found in flocks, and feeds on small fishes, crustaceans, and molluscs.



Merganser. Hooded species of marine duck

The hooded merganser (*M. cucullatus*) is a rare visitor to British coasts.

MERIDEN. Village of Warwickshire. It is 5½ m. from Coventry and is regarded as the centre of England. There are remains of a cross erected to mark the exact spot. An obelisk was unveiled in 1921 in memory of the cyclists who fell in the Great War. Pop. 848.

MERIDIAN (Lat. meridiēs, midday). In astronomy, the great circle of the heavens passing through zenith of any place and the N. and S. poles of the celestial sphere. A terrestrial meridian is the line of intersection

Gazul, 1825; and Guzla, 1827, which he published as translations respectively of the plays of a Spanish actress and some Illyrian folksongs. He is at his best in his shorter tales, some of which (e.g. Colomha, Carmen, Mateo Falcone, L'Enlèvement de la Redoute) are masterpieces. He died at Cannes, Sept. 23, 1870. Pron. May-ree-may.

MERINO. Spanish name for a widely distributed breed of sheep famous for its fine white wool. In the textile trade the word is applied specifically to the wool of this animal, which is bred as a wool-sheep, and only secondarily for its mutton. Merino is also the name of a dress fabric made wholly or in part from merino wool, and woven to show a twill back and face.

MERIONETHSHIRE. County of N. Wales. Its area is 660 sq. m., and it has a coast-line of 38 m. on Cardigan Bay. The county presents a variety of picturesque scenery, with rugged mountains, beautiful valleys, and waterfalls. Among lofty summits are Aran Mawddwy and Cader Idris. The county has many lakes, including Bala and Tal-y-llyn; the principal rivers the Dee, Mawddach, and Dovey. The Great Western and L.M.S. Rlys serve the county. Dolgelley is the county town; other places are Festiniog, Barmouth, Towyn, and Harlech. Pop. 45,087.

MERIT, ORDER OF. British order for distinguished service in all callings. It was founded by Edward VII. June 26, 1902. Its members are divided into two classes, civil and military, and are distinguished by the letters



Order of Merit, British badge (military)

O.M. The badge is a cross pattée formée of red and blue, having in its centre on a blue medallion, surrounded by a laurel wreath, the words For Merit, and on the reverse the royal and imperial cypher. Crossed swords are added for the naval and military members. Membership is limited to 24, but the order confers no precedence.

Other countries have an order of merit, such as the Indian order of merit founded in 1837 and the Prussian order of

merit, both given for services in time of war.

MERITORIOUS SERVICE MEDAL. British decoration awarded to men of the army, navy, and air force. It was instituted for army sergeants in 1845 and for marines in 1849. It was revived in 1884, when it was extended to all soldiers above the rank of corporal. In 1916 it was thrown open to the lower ranks of the army, navy, and R.A.F. The ribbon for the army is crimson with a narrow edging and narrow central stripe of white; for the navy, crimson with three white stripes; and for the R.A.F. a ribbon with narrow white edges, a



Meritorious Service Medal

white central stripe, a band of deep blue between the left edge and the centre, and a crimson band between the centre and right edge. Since 1928 it has been granted only to recipients of the Meritorious Service annuity.

MERLIN (Welsh, Myrddin). Legendary wizard and prophet, celebrated in Welsh, Breton, and Scottish tradition. Of demon origin, he lived, it was said, in the 6th and 6th centuries at the courts of Vortigern and Arthur. See Arthur.

MERLIN (Falco tadsalon). Smallest of the British falcons. It is greyish blue on its upper parts, the male being pale yellow spotted with brown on the under parts; and the female brownish above and yellowish white beneath. Ranging from Yorkshire to the Shetlands, and found in the wilder parts of Ireland, the merlin lives among the mountains and moors. It preys upon small birds.



Merlin, small British falcon inhabiting the moors

MERMAID. Fabled creature of the sea or of lakes, with the head, arms, and upper part of the body like a woman, and the lower like a fish. With variations the mermaid is found in the legendary lore of many nations.

MERMAID TAVERN. This was formerly in Cheapside, destroyed in the Great Fire, 1666. In this tavern, which dated from 1529, Sir Walter Raleigh is alleged to have instituted The Mermaid Club, famous as the supposed meeting-place of Shakespeare, Jonson, Beaumont, Fletcher, Carew, and other wits.

MERODACH-BALADAN. Name of three kings of Babylon, two being comparatively unimportant. The second was a Chaldean chief who, while Sargon II was preoccupied with Samaria, captured Babylon, and reigned 721-710 B.C. Being overthrown he retired to the Sealand; on reappearing in 703, he was defeated by Sennacherib.

MEROË. Ancient Nubian city. Near the right Nile bank 28 m. N.E. of Shendi, it gives its name to the so-called island bounded by the Blue Nile and the Atbara.

The city was founded on an earlier site after 650 B.C. by Aspetut from Napata. During this early period a sun-temple and a temple of Amon were erected, and Egyptian culture was dominant. A "middle" period, inaugurated about 300 B.C., was characterised by Hellenistic influence, such as royal baths, frescoed chambers, cremation, and by a non-Egyptian native art, notably a decorated biscuit-ware of exquisite fineness. After a brief Roman occupation there followed, 10 B.C., a "late" period of artistic decline, lasting until A.D. 700. See Egypt.

MEROM, WATERS OF. Ancient name for Lake Huleh, an expansion of the Jordan farther N. than the Sea of Galilee. It measures rather more than 4 m. by 3 m. A battle between Joshua and the Canaanites took place near.

MERRIMAC OR MERRIMACK. River of U.S.A. Rising in New Hampshire, it flows S. into Massachusetts, and thence E. to the Atlantic, which it enters near Newburyport. It is 180 m. long, and is navigable to Haverhill. It provides water power for Manchester, Lowell, and other large towns.



Merodach-Baladan II, king of Babylon, with a vassal
Berlin Museum



Merionethshire. Map of the county of North Wales

of the earth's surface with a plane passing through the poles. The magnetic meridian at any place on the earth's surface is the horizontal line along which a freely suspended compass needle points when influenced only by the earth's magnetism. See Latitude.

MÉRIMÉE, PROSPER (1803-70). French author. Born in Paris, Sept. 28, 1803, he entered the civil service, and became a senator in 1853. He began his literary career with two clever mystifications, Le Théâtre de Clara

Merrimae was the name of an American battleship. The Confederates fitted her out as the Virginia, and on March 9, 1862, she fought a duel with the Monitor in Hampton Roads.

MERRIMAN, HENRY SETON (1862-1903). Pseudonym of Hugh Stowell Scott, British novelist. He was born at Newcastle-upon-Tyne, May 9, 1862. His first novel, *Young Mistley*, appeared in 1888, though success first came with *The Slave of the Lamp* and *From One Generation to Another*, 1892. Thereafter followed in rapid succession *With Edged Tools*, *The Sowers*, *In Kedar's Tents*, *Roden's Corner*, *The Isle of Unrest*, *Barlasch of the Guard*, and several others. Seton Merriman had the story-telling gift to a high degree. He died Nov. 19, 1903.

MERRIMAN, JOHN XAVIER (1841-1926). South African politician. Born at Street Somerset, March 15, 1841, the son of the bishop of Grahamstown, he became a leading figure in Cape politics. He was a minister of the crown repeatedly between 1875 to 1900, and from 1908-10 was prime minister of Cape Colony. He was a member of the committee which sat at Cape Town in 1896 to investigate the circumstances of the Jameson Raid, and drew up the report. He did not associate himself with the narrow policy of Kruger; nevertheless he came to London in 1901 to advocate the continued independence of the two republics. He died Aug. 2, 1926.



J. X. Merriman,
S. African politician.
Elliott & Fry

MERRIVALE, HENRY EDWARD DUKE, 1st BARON (h. 1855). British lawyer. Called to the bar in 1885, he soon acquired a large practice on the western circuit. In 1900 he entered Parliament as Unionist M.P. for Plymouth, lost his seat in 1906, but in 1910 was returned for Exeter. In 1915 he was made attorney-general to the prince of Wales. He was chief secretary for Ireland, 1916-18, when he was appointed a judge of the court of appeal and knighted. In Oct., 1919, he became president of the probate, divorce, and admiralty division, and in 1925 was created a peer, taking the title of Lord Merrivale.

MERRY DEL VAL, RAPHAEL (1865-1930). Roman Catholic prelate. Born in London, Oct. 10, 1865, he became a priest in 1888, papal chamberlain in the Vatican in 1892, and in 1897 prelate to the papal household. Appointed archbishop of Nicosia, 1900, he represented the pope at King Edward VII's coronation. He was papal secretary of state 1903-14, and was created cardinal in 1903. In Oct., 1914, he became secretary of the congregation of the Holy Office. He died Feb. 26, 1930.



R. Merry del Val,
Roman Catholic prelate

MERSEA. Island of Essex. It lies between the estuaries of the Colne and the Blackwater, 8 m. from Colchester, its railway station. It is nearly 5 m. long and 2 m. wide, and is connected with the mainland by a causeway. West Mersea is a popular pleasure resort and an urban district. Pop. 2,000. East Mersea is smaller. The island is the scene of Baring Gould's novel *Melchah*.

MERSEY. English river. Formed by the union of the Goyt and the Etherow, in Derbyshire, it enters the Irish Sea by an estuary 16 m. long after a course of 70 m. From the right it receives the Tame and the Irwell, and on the left its chief tributaries are the Bollin and the Weaver. Warrington lies on the

right bank, and important towns along the estuary are Runcorn, Liverpool, Birkenhead, and Wallasey. At Eastham, on the estuary, is the entrance to the Manchester Ship Canal, and beneath the bed of the river, extending from Birkenhead to Liverpool, is the Mersey Railway Tunnel, opened in 1886. In 1925 work was begun on a new tunnel under the river. The Mersey Docks and Harbour Board controls the docks and harbours of the Mersey.

Mersey was the name of one of the British monitors sent in Oct., 1914, to shell the German defences on the Belgian coast. Later she was employed in E. Africa.

MERSEY, JOHN CHARLES BIGHAM, 1st VISCOUNT (1840-1929). British lawyer. Born Aug. 3, 1840, the son of a Liverpool merchant, he became a barrister in 1870. Q.C. in 1883, and a bencher in 1886. He was a judge of the high court, 1897-1909, serving also as president of the railway and canal commission, 1904-9, and as chief justice in bankruptcy, 1904-10. In 1909 he was made president of the probate, divorce, and admiralty division, but in 1910 he retired with a barony. In 1916 he was raised to the rank of viscount. Lord Mersey was the commissioner appointed to inquire into the wreck of the *Titanic*, 1912, and into the destruction of the *Falaba* and the *Lusitania*, 1915. He died Sept. 3, 1929.



1st Viscount Mersey,
British lawyer.
Russell

MERTHYR TYDFIL. Co. borough and market town of Glamorganshire, Wales. It stands on the Taff, 24 m. from Cardiff, and is served by the G.W. and L.N.S. Rlys. and by a canal. The grounds of Cyfarthfa Castle are public property, and the castle itself is now a school, museum, and art gallery. Merthyr has large iron and steel works, these and the mines being the principal industries. Market day, Sat. Pop. 80,161.

MERTON. Urban district, with Morden, of S.W. London. It is in the co. of Surrey, with a station, Merton Park, on the Southern Rly. An Augustinian priory founded in 1115 was dissolved in 1538. A great council was held at Merton Priory in 1236, when the statutes of Merton were passed. The property of the crown from 1538-1610, the priory in 1724 was converted into a calico-printing factory, and part of the materials of the building were used for the modern house called Merton Abbey. Merton Place was the residence of Nelson. The parish church of S. Mary dates from 1120. There are several old charities and the Nelson Hospital, extended as a memorial to Merton men who fell in the Great War. Pop. 24,829.

MERTON COLLEGE. One of the colleges of the university of Oxford. It was founded in 1264 by Walter de Merton at Malden, Surrey, not being removed to Oxford until 1274. The buildings, which are in Merton Street, are among the oldest in Oxford. The large chapel, once a parish church, contains some beautiful work.

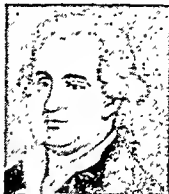
MÉRYON, CHARLES (1821-68). French etcher. Born in Paris, the son of an English physician and a French dancer, it was not until 1846 that he adopted the artistic profession and settled in Paris. Colour-blindness preventing him from being a painter, he devoted himself to engraving and etching, and produced the series of etchings of Paris streets which afterwards made him famous. He also produced many portraits. Méryon died in the asylum at Charenton.

MESDAG, HENDRIK WILLEM (1831-1915). Dutch painter. Born at Groningen, Feb. 23, 1831, he studied under Sir L. Alma-Tadema

in Brussels. Afterwards he devoted himself to marine painting. He lived at The Hague, but spent his time at Scheveningen and other seaside resorts, where the sea and its ships occupied his hush. He died July 10, 1915.

MESHED, MESHEH, OR MASHHAD. Town of Persia. In the N.E. of the country, it is regarded as a holy city by the Shiah Mahomedans, because it contains the tomb of the Imam Reza. Situated in a fertile plain, it has trade in carpets, silks, and shawls, and a sword-making industry. It derives much of its prosperity from the pilgrimages to the Imam's mausoleum, visited each year by upwards of 150,000 Shites. Pop. 85,000.

MESMERISM. Name given to a method of producing a trance or sleep first practised by Franz Mesmer (1733-1815), a German physician. Mesmer believed that an occult force pervaded the universe, and was one which, properly controlled, had a great effect on the nervous system of human beings. His consulting-rooms were always dimly lighted, hung with mirrors, and filled with the scent of burning chemicals. Mesmer himself dressing as a magician. The way he produced his effects was copied by swindlers and tricksters of all kinds, with the result that mesmerism fell into disrepute until scientifically studied towards the end of the 19th century. See Hypnotism; Magic.



F. A. Mesmer
German physician

MESOPOTAMIA. Greek translation of the Semitic name for the district between the Euphrates and the Tigris, now known by the name of its southern part, Iraq. The word means between the rivers. The early history of Mesopotamia is, broadly, the history of Assyria and Babylonia, which eventually fell to Persia. In A.D. 636 the Persians were decisively beaten by the Arabs, who in the next year annexed Mesopotamia, and ruled it for 400 years. The Seljuks overran the land in the 11th century. After the death of Jenghiz Khan in 1227 another Mongol wave broke in, and with the capture of Bagdad (Baghdad) in 1258 came the end of the caliphs. In 1516 the Turkish sultans assumed the title of caliph, and from then until 1915 Mesopotamia was under Turkish rule. See Iraq.

THE CAMPAIGN IN MESOPOTAMIA. When in the autumn of 1914 it became evident that Turkey would join the Central Powers, a force from India under Sir A. A. Barrett occupied Basra on Nov. 21, 1914. This prevented the Turkish forces centred on Bagdad from gaining access to the sea. In Jan., 1915, Kurna was captured, and in the same month Sir John Nixon assumed control of the expeditionary force. Then followed a brilliant series of land and river operations, in which the Turks were driven back both on the Upper Euphrates and the Tigris. Amara surrendered on May 31, the battle of Nasiriyah (An Nasiriya) was won on July 24, and Townshend captured Kut-el-Amara on Sept. 28. Ctesiphon was reached on Nov. 23, then followed Townshend's retreat to Kut and its subsequent siege.

Sir Stanley Maude was appointed to the supreme command in Aug., 1916, and after much heavy fighting captured Bagdad on March 11, 1917. After his untimely death at Bagdad, Maude was succeeded by his able lieutenant, Sir W. Marshall, who continued the advance with energy. The British extended their gains on the Tigris, Euphrates, and Diyala, gaining victories at Ramadi, Sept. 20, 1917, and at Khan Bagdadi, March 27, 1918. On both occasions nearly the whole enemy force was captured. The activity of Allenby in Palestine, coupled with the disappearance



Mesopotamia. Map of the country between the Tigris and the Euphrates, which includes Iraq, showing railways and battle-ground of 1914-18

of Russia in the N., was now diverting enemy initiative from the centre to the flank. To counter this the British established a series of posts in Persia and threw out communications to the Caspian. The campaign was brought to a brilliant close by the capture of Mosul in Nov., 1918.

The Mesopotamia Commission was a British committee appointed in Aug., 1916, to inquire into the British campaign in Mesopotamia, 1914-16. Its report strongly censured the Indian government. See Baghdad; Basra; Iraq; Kut; Maude, F. S.; Townshend, C. F. S.

MESOZOIC ERA. In geology, one of the main divisions of time. It came between the Palaeozoic and the Kainozoic eras, and is divided into three periods, the Triassic, Jurassic, and Cretaceous. See Geology.

MESSAGER, ANDRÉ CHARLES PROSPER (1853-1929). French composer. Born Dec. 30, 1853, for a time he was an organist in Paris. His first comic opera, *La Fauvette du Temple*, 1885, was followed by *La Béarnaise*. Other successes were *La Basoche*, *Les P'tites Michus*, and especially *Véronique*, produced in Paris in 1898, and afterwards in England and America, also the ballets *Séaromouche* and *Les Deux Pigeons*. Messenger was artistic director of Covent Garden Theatre, 1901-7, and director of the Grand Opera, Paris, 1907-19. He married Hope Temple, the composer of many ballads. He died Feb. 24, 1929.



André Messenger, French composer
H. Manuel

MESSALINA, VALERIA (d. A.D. 48). Wife of the Roman emperor Claudius. She dominated her weak husband, and, with his freedmen Pallas and Narcissus, virtually ruled the empire. Matters came to a crisis when,

having become enamoured of Gaius Silius, she openly married him. Claudius, having been convinced that the pair were plotting against him, ordered Messalina to be put to death.

MESSIAH (Heb. Mashiach, one anointed). Title for an expected leader of the Jews, who should deliver the nation from its enemies and secure its permanent triumph and peace. It is equivalent to the Greek word Christ. The Messianic idea is implicit in early prophecy, and took definite shape in those of Isaiah and Micah during the period of Assyrian aggression. Its fully developed form dates from about the period of the Exile. Prophecies of the period indicate that the Messiah should be at once a prince, prophet, and captain.

MESSINA. City and seaport of Sicily. It stands on the strait of Messina, 70 m. from Syracuse, and has a magnificent harbour. It was a handsome and prosperous city until 1908, when (Dec. 28) it was destroyed by an earthquake which laid most of the buildings in ruins. These included the cathedral, dating from the 12th century, the church of S. Gregory, and the city hall. Rebuilding work was begun after 1910, and by 1930 had made good progress. The university was

refounded in 1924, and the city hall rebuilt to include the undestroyed portion. The library was not seriously damaged. The city has a trade in the products of the island. Pop. 188,000.

The Strait of Messina, which separates Italy from Sicily, is about 20 m. long, and varies in width from 2 to 15 miles. It is associated with the legend of Scylla and Charybdis.

MESSINES. Village and ridge of Belgium, in W. Flanders. The former is 6 m. S. of Ypres, on the southern spur of the ridge, which runs from the village N.W. to Wytschaete. Held by the Allies in Oct., 1914, the village was seized by the Germans on Nov. 1, after a gallant 48 hours' stand by the British cavalry corps. The scene of a gallant charge by the London Scottish on Oct. 31, its ruins dominated the British positions to the west until the battle of June, 1917. In this engagement, in which mining was employed, the ridge was finally carried by New Zealand troops.

The ridge was held by the British until 1918, when on April 12, during the second great German offensive, the British troops were compelled to fall back. The ridge was retaken on Sept. 30, 1918, by Plumer's 2nd army during the battle of Flanders. See Ypres.

MESTIZO (Sp. from Lat. mixtus, mixed). Half-breed, especially the offspring and their descendants, of a Spaniard or Portuguese and an American Indian. The feminine is mestiza.

MESTROVIĆ, IVAN (b. 1883). Yugoslav sculptor. Born of Croat parents at Otavice in N. Dalmatia, he was apprenticed in 1901 to a worker in marble at Split (Spalato), but soon went to Vienna to enter the Academy of Arts, and from 1902 exhibited at the Vienna Sezession, where a collective exhibition of his work was held in 1907. In 1911 his work was shown in Rome, and in London in 1915 and 1917. His marble torso *Strahinić Ban* was presented by the Serbian Government to the Victoria and Albert Museum, London, in 1915.

METABOLISM. Term embracing all the chemical changes which occur in living tissues.

It is divided into anabolism, the building up of tissues from simpler substances, and katabolism, the breaking down of tissues into simpler bodies. In the ordinary healthy individual who is not gaining weight, anabolism and katabolism just balance each other. In the growing child anabolism exceeds katabolism, and in wasting diseases or old age katabolism is in excess. See Anabolism; Life.

METAL. One of the two classes into which all elements are divided. The other class is made up of non-metals. A broad classification of the metals divides them into two groups, noble and base, the former consisting of such

LIST OF THE PRINCIPAL METALS

Name	Specific Gravity	Melting Point C.	Melting Point F.
Aluminium ..	2.56	658.7	1,217.7
Antimony ..	6.712	425.0	797.0
Arsenic ..	5.67	—	—
Barium ..	3.75	1,200.0	2,192.0
Beryllium ..	2.00	1,400.0	2,552.0
Bismuth ..	9.823	264.0	507.2
Cadmium ..	8.62	320.9	609.6
Cæsium ..	1.88	26.5	79.7
Calcium ..	1.548	810.0	1,490.0
Cerium ..	6.68	623.0	1,153.0
Chromium ..	6.92	2,000.0	3,632.0
Cobalt ..	8.50	1,500.0	2,732.0
Copper ..	8.78	1,050.0	1,922.0
Dysprosium ..	—	—	—
Erbium ..	4.47	—	—
Gallium ..	5.90	30.0	89.0
Germanium ..	5.460	900.0	1,652.0
Gold ..	10.32	1,061.0	1,941.8
Indium ..	7.42	176.0	348.8
Iridium ..	22.40	2,500.0	4,532.0
Iron ..	7.86	1,600.0	2,912.0
Lanthanum ..	6.16	810.0	1,490.0
Lead ..	11.4	327.0	620.6
Lithium ..	0.50	186.0	366.8
Magnesium ..	1.74	1,398.0	2,548.4
Manganese ..	8.00	1,500.0	2,732.0
Mercury ..	13.59	—39.5	—30.1
Molybdenum ..	8.60	1,000.0	3,452.0
Nickel ..	8.80	1,600.0	2,912.0
Niobium ..	7.06	1,050.0	3,542.0
Palladium ..	11.40	1,500.0	2,732.0
Platinum ..	21.50	1,775.0	3,227.0
Potassium ..	0.87	62.0	149.6
Radium ..	—	700.0	1,292.0
Rhodium ..	12.10	2,000.0	3,632.0
Rubidium ..	1.52	38.5	101.3
Ruthenium ..	11.4	2,500.0	4,532.0
Scandium ..	—	—	—
Selenium ..	4.80	217.0	422.6
Silicon ..	2.30	1,430.0	2,606.0
Silver ..	10.60	961.0	1,761.8
Sodium ..	0.97	95.0	203.0
Strontium ..	2.54	—	—
Tantalum ..	10.78	2,250.0	4,082.0
Tellurium ..	6.25	452.0	845.6
Thallium ..	11.80	290.0	552.0
Thorium ..	—	—	—
Tin ..	7.29	232.0	449.6
Titanium ..	4.50	1,850.0	3,362.0
Tungsten ..	19.10	3,000.0	5,432.0
Uranium ..	18.70	1,500.0	2,732.0
Vanadium ..	6.025	1,700.0	3,092.0
Ytterbium ..	—	—	—
Zinc ..	7.15	419.0	786.2
Zirconium ..	6.40	—	—

metals as resist, by their hardness and other properties, the wear and tear of frequent handling, and the corrosive influence of the atmosphere, of water, and of other common solvents. To this class belong gold, iridium, osmium, palladium, platinum, rhodium, ruthenium, and silver. Only a comparatively few of the known metals have important commercial uses. The chemical symbols and atomic weights of the metals are given in the list of elements on page 554.

The physical properties characteristic of metals are represented by their density or weight; their appearance—colour, lustre, fracture; their fusibility, malleability, ductility, tenacity, and elasticity; their hardness, conductivity for heat and electricity (see Conduction); their behaviour in certain solvents, including water and air. They differ very widely in regard to all these properties. Very small proportions of foreign substances in a metal may greatly modify its physical properties. Thus tiny percentages of chromium, manganese, molybdenum, nickel,

tantalum, tungsten, or vanadium, may greatly increase the valuable properties of steel. Three metals are distinctly magnetic, iron, nickel, and cobalt; iron converted into steel will retain the magnetism. See Alloy; Metallurgy, and under names of the various metals.

METALLURGY. Term denoting the art of extracting metals from their ores and refining or adapting them for use in manufactures, and the science on which the modern practice of the art is based. It starts where mining finishes, and ends where the manufacture of metalliferous commodities begins.

Metallurgy is one of the fundamental industries of mankind. The first metal used by man was doubtless native gold, employed for ornament long before the most elementary methods of working metals had been devised. Copper was the first metal to be worked and turned to practical use. Even in historical times the Indians of N. America are known to have taken pieces of native copper from the region of Lake Superior and fashioned them directly into weapons and utensils. The Bronze Age (q.v.) is supposed to have begun in Europe and in Egypt about 2000 B.C. An alloy of copper and tin, bronze may have been made before tin had been isolated as a metal, by melting together ores of copper and of tin, or crude copper with ore of tin.

At the beginning of the Christian era the Greeks and Romans were well acquainted with gold, silver, iron, copper, tin, and lead, and had reached a high degree of manipulative skill in the preparation of objects in those metals. A period of 1,400 years elapsed without any new metal being announced, or any important improvement in the art of extraction. In the 14th century antimony is mentioned, and iron first began to be smelted in Europe. With smelting the modern Iron Age may be said to have commenced, and from that time onward the history of metallurgy is largely that of iron and steel (q.v.). The last two hundred years have witnessed the isolation of numerous new metals and many improvements in the methods of metal extraction. Some of these new metals remain rare and have no industrial importance; others, among them sodium, potassium, manganese, platinum, chromium, tungsten, vanadium, aluminium, and nickel, have all become of great industrial importance.

The processes and appliances used in the practice of the art of metallurgy are numerous and varied. The former are commonly classified as dry, wet, or electrolytic processes, according as the metal is extracted by (1) smelting, volatilisation, or amalgamation; (2) by leaching or dissolving the metal out of its ore by chemical reagents; and (3) by deposition from a solution in an electrolytic bath. There is still practised, to a limited extent, a purely mechanical process, as where gold is directly extracted from gold-bearing sands or gravels by simple washing with water. See Alloy; Amalgam; Assaying; Electro-metallurgy; Furnace; Metal; Mineralogy; Mining, and under names of metals and alloys.

METAMORPHOSIS. Term in zoology for changes in structure through which many animals pass in their life history. The insect's egg hatches as a larva or caterpillar, which feeds till it is full grown, and then passes through a pupal or chrysalis stage, from which it emerges as an imago or perfect insect. The Crustacea and many of the Mollusca first appear in forms very different from their parents, while in some of the animals grouped in the class Vermes the life history is much more involved. Among the fishes the eel in its infancy is so unlike the adult that it was long supposed to be quite another animal. See Insect; Larva.

METAPHYSICS. Science which investigates the nature of being. Aristotle included

it in the theoretic or first of his three kinds of philosophy. The first problem of metaphysics would seem to be: are there any facts which we can assert about everything that is beyond the bare formal fact that it is? This raises many of the most fundamental problems of philosophy, for it is in itself nothing less than the fundamental question, whether there is a principle of unity in the universe at all. According to the answer given, the different systems of metaphysics may be described as monism, dualism, or pluralism. Again, between the theories that give the monistic answer we can distinguish according to what they conceive as the fundamental facts about everything that is. Thus, materialists, pantheists, and idealists are all monists.

Perhaps the natural, unreflective view would assume two entirely different kinds of thing in the universe, the mental and the physical or material, and would tend to consider them as entirely different, with nothing in common. But mind and matter have a much closer connexion than mere co-existence in the same universe. There is the close connexion between the mind and the body of the same individual person, where, so far as we can see, the two things affect or act on each other. Mind and matter come into contact once more in what in the widest sense we call knowledge. The nature of the relation between the knowing mind and the known object, and what it means to its two terms, is one of the chief subjects of discussion for modern metaphysics.

Another fact that appears to be universal throughout reality is the relation which we call causation. We accept readily the statement that every event has a cause. The metaphysician has to consider what the true nature of this relation is, and whether it is really universal. Again, he would have to consider the true nature of space and time, and whether there is any form of existence which has nothing to do with either of these, or whether everything has a place in time or space, or in both. See Relativity; consult also Problems of Philosophy, B. A. W. Russell, rev. ed. 1919.

METAURUS. River of Umbria, Italy, the modern Metauro. Here Hasdrubal, the Carthaginian general, was defeated in 207 B.C. by the Roman army while bringing reinforcements to his brother Hannibal (q.v.).

METAZOA. In zoology, name applied to all animals above the protozoa. In the latter, which include the lowest types of organisms, the animal consists of a single cell; in the metazoa it contains more than one cell, these being differentiated for performing various functions. Thus the cells form at least one double layer, or at any rate present a double aspect to environment; and it is the combination of these specialised cells that builds up the organs which perform the various functions of life. Metazoa, however, develop from a single cell.

METEOR. Small body which, circulating in interplanetary space, becomes visible by incandescence when it impinges on the earth's atmosphere. Such hodies move in regular orbits, and they are regarded hypothetically as fragments which may be the relics of a larger body, but which are in any case dispersed in a huge swarm. Such a swarm may be only a few hundred miles thick, but its length may amount to hundreds of millions of miles.

The great display of Leonids on November 12-13, 1833, first drew serious scientific attention to meteors. It was predicted that a particularly brilliant display would appear about every 33 or 34 years, a result confirmed in 1867. Some eighty showers are known, and the following is a list of the chief and their approximate dates. See Comet.

Name of Shower.	Date.
Quadrantids.	January 2-3.
Lyrids.	April 20-22.
7 Aquarids.	May 1-6.
8 Aquarids.	July 28.
Perseids.	August 10-12.
Orionids.	October 18-20.
Leonids.	November 14-16.
Andromedae.	November 17-23.
Geminids.	December 10-12.

METEORITE. Metallic or stony mass of matter reaching the earth from outside the earth's atmosphere. Large meteorites have been

found in Mexico, in Greenland, and S.W. Africa, weighing 50 tons, 36½ tons, and 50 to 70 tons respectively. Meteorites consist of iron or stone chiefly, though other elements, all of which are found on the earth, occur. The most probable hypothesis of their origin is that they are small masses, in reality tiny planets, revolving round the sun. See Aerolite.



Meteorite. The Willamette meteorite, a mass of iron found in the Willamette Valley, Oregon, in 1802. It is 10 ft. long, 6 ft. 6 ins. high, and nearly 16 tons in weight. Courtesy of the American Museum of Natural History.

METEOROLOGY (Gr. *meteoro*, lofty; *logos*, discourse). Science which deals with the processes going on in the earth's atmosphere, which manifest themselves as weather, and seeks to give a physical explanation of them. About the middle of the 19th century there grew up in most countries organizations for the collection and discussion of meteorological information. Meteorological stations, places where regular observations of weather are made and recorded, were established on a large scale, and their observations collected for discussion at central offices. An international conference of meteorologists at Leipzig in 1872 was the forerunner of many similar meetings, which have secured uniformity in methods of observation. Another method of discussion, the synoptic method, consists in bringing together observations made simultaneously at a large number of stations by plotting them on a map, thus giving a bird's-eye view of the weather conditions over a wide area. This method led to the recognition of definite meteorological systems, such as cyclones and anticyclones.

Meteorological observations were at first confined almost solely to those made at ground level. Observations of the form and motion of clouds were almost the only facts collected from the free atmosphere. During the last decade of the 19th century systematic efforts were made to extend our knowledge by direct observations of the conditions prevailing aloft. The most fruitful line of investigation has been to make atmospheric soundings with recording instruments (meteorographs) carried by kites or unmanned balloons. Direct observations of temperature made on aeroplanes are now also a recognized means of systematic observation. Weather forecasts are generally based on synoptic methods. See Anticyclone; Atmosphere; Climate; Clouds.

METEOROLOGICAL OFFICE. Headquarters of British meteorological activities. It was founded 1854, as a department of the Board of Trade, for the purpose of collecting and discussing weather observations made at sea. The office is now attached to the Air Ministry.

METEOROLOGICAL SOCIETY. ROYAL Society for the promotion of the science of meteorology. Founded in 1850, it publishes *The Quarterly Journal* and *The Meteorological Record*. The headquarters are at 49, Cromwell Road, London, S.W.7.

METER. Apparatus or instrument for measuring gases, liquids, electric currents, the intensity of light, etc. Usually they also record the results, as in gas, water, volt, and exposure meters, etc. Grain meters indicate the quantity of flowing grain discharged from a chute or hopper. An exposure meter is used for determining the intensity of light before exposing to it photographic plates or papers.

Methane. Also known as methyl hydride, this is the scientific name of marsh gas (q.v.).

METHIL. Seaport of Fifeshire, Scotland. On the N. shore of the Firth of Forth, 1 m S.W. of Leven on the L.N.E. Rly., it has a tidal harbour, with three docks, and exports coal. Pop. 12,295.

METHODISM. Name originally given to the evangelical revival which began at Oxford. It started in 1729 with a society in which John and Charles Wesley and other undergraduates handed themselves together.

The brothers were joined by George Whitefield, and, after a visit to North America, they began evangelistic work in England. In 1739 Wesley made his headquarters at Moorfields, London, and his followers built a meeting house at Bristol. Soon, however, on a point of doctrine, Whitefield broke away and left the movement in the hands of the Wesleys. John Wesley called the first conference of his followers together in 1744, and this may be said to have inaugurated Wesleyan Methodism. It spread to Ireland in 1747, and to Scotland in 1751. In 1784 Wesley consecrated Thomas Coke and Francis Asbury as superintendents for work in N. America. Coke afterwards called himself bishop, and so started the Episcopal Methodist Church of the U.S.A. Charles Wesley, who died in 1788, and greatly aided the movement as a hymn writer, and John Wesley, who died in 1791, both remained, nominally at least, in the Church of England; but in 1795 the English Methodist congregations severed connexion with that Church, an example followed in 1870 by their Irish colleagues.

In 1796 Alexander Kilham formed the Methodist New Connexion. In 1810 Hugh Bourne and William Clowes founded a body known as the Camp Meeting Methodists, who in 1812 became known as the Primitive Methodists. In 1815 arose the Bryanites or Bible Christians; in 1828 the Protestant Methodists; in 1835 the Wesleyan Methodist Association; in 1849 the Wesleyan Reform Association. The three last named bodies joined to form the United Methodist Free Church in 1857. The United Methodist Free Church joined in 1907 with the Methodist New Connexion and the Bible Christians to form the United Methodist Church.

Methodist organization includes hands, classes, circuits, districts, quarterly meetings of ministers and lay officers of circuits, semi-annual synods of ministers and selected laymen of a district, and a governing body known as the conference. The first Occumenical Methodist Conference, attended by 400 delegates, was held in the City Road Chapel, London, Sept. 7-20, 1881. The Methodist churches in Great Britain and Ireland have about 930,000 members, 5,000 ministers, and 1,500,000 scholars in the Sunday Schools.

A scheme for the reunion of the three remaining Methodist bodies was put forward after the Great War. It was approved by the conferences of the three churches, and the necessary Act of Parliament was passed to give effect to it. It needs still a final vote of those concerned. If this is favourable the first

united conference will meet in 1933. See Bible Christians; Primitive Methodists; Wesley. John: Whitefield, George.

METHUEN, BARON. British title. In 1738 Paul Methuen, M.P. for Wiltshire, was made a baron. His descendant, Paul Sanford Methuen, the 3rd baron, was a distinguished soldier. Born Sept. 1, 1845, he joined the Scots Guards in 1864. He served in Ashanti, 1874, and the Egyptian War, 1882, commanded Methuen's Horse in Bechuanaland, 1884-85, and in the South African War, 1899-1902, commanded a division. Sent to relieve Kimberley, he



3rd Baron Methuen
British soldier
Russell

was defeated at Magersfontein, Dec. 12, 1899. He was taken prisoner in March, 1902. Lord Methuen's later appointments included the governorships of Natal and of Malta. He was made a field-marshal in 1911.

An ancestor, Sir Paul Methuen, was responsible for the treaty of 1703 between Great Britain and Portugal still called by his name. By it Great Britain gave advantages to Portuguese wines and Portugal gave advantages to British wool.

METHUSELAH. Son of Enoch and grandfather of Noah (Gen. 5). He is stated in the O.T. to have lived 969 years, the greatest age recorded among the patriarchs, but the Samaritan text gives it as only 720 years.

METHVEN. Village of Perthshire, Scotland. It is 8 m. W. of Perth on the L.M.S. Rly. The churchyard contains the tomb of Lord Lynedoch, the General Graham of the Peninsular War. In the battle of Methven, 1306, the English defeated Bruce. Pop. 1,772.

METHYL. Name given to the group of elements represented by the formula CH_3 . It is not known in the free state, but its derivatives are very numerous. See Carbonates.

METHYL ALCOHOL. Colourless liquid with an odour like that of ordinary alcohol (ethyl alcohol). On ignition it burns with a blue flame, and, like ethyl alcohol, possesses great solvent powers. In the crude state it is known as wood naphtha or spirit, because it is prepared on a large scale by the dry distillation of wood. Commercial wood spirit contains from 75 to 90 p.c. of methyl alcohol. This spirit is used as a solvent for making varnishes and french polish, and in the preparation of methylated spirit. The purified wood spirit is largely used in the manufacture of aniline dyes.

METHYLATED SPIRIT. This is alcohol which has been rendered unfit for use as a beverage by denaturising. The object of the process is to allow the sale of alcohol for manufacturing purposes free of the heavy duty charged on alcohol. There are two kinds: (1) mineralised methylated spirit, consisting of alcohol mixed with one-ninth of its bulk of wood naphtha and three-eighths of 1 p.c. of petroleum; and (2) industrial methylated spirit, containing only one-nineteenth of its bulk of wood naphtha.

METHYL SALICYLATE. Chief constituent of oil of wintergreen, used as a remedy for rheumatism. Methyl salicylate is also made artificially. See Wintergreen.

METIS (Gr. wisdom). In Greek mythology, one of the daughters of Oceanus, the first wife of Zeus. She was so wise and prudent that Zeus, fearing she might bring into the world a child destined to become wiser than himself, devoured her when she became pregnant, the result being that Athena was born from the head of Zeus.

METRIC SYSTEM. Connected system of weights and measures based upon an arbitrary unit, the metre. The metric system

aims at simplification, the various units are rationally connected, and the scale of numeration is the same for most units. This common scale involves merely the decimal system of notation. The fundamental unit, the metre, was selected as the ten-millionth part of a quadrant of the earth's circumference. Later investigations showed that this quadrant varies in length, so that the metre is defined as the distance between two marks upon a bar stored in the observatory at St. Cloud. The other units are derived from the metre. The unit of weight, the gram, equals the weight of 1 c.c. of pure water at its maximum density. The unit of capacity, the litre, equals the volume occupied by 1,000 c.c. of pure water of maximum density. Other units such as the are, for square measure, and stère, for cubic measure, are convenient re-namings of multiples of the primary units.

METRIC ABBREVIATIONS. K=kilo, H=hecto D=deca, M=myria (ten thousand), d=deci, c=centi, m=milli: m.=metre, c.c.=cubic centimetre, g.=gram, Kg.=kilogram, l.=litre, Hl.=hectolitre a=are, s=stère, t=tonne, q=quintal.

METRIC EQUIVALENTS. 1 a.=100 sq. m. 1 sq. Km.=100 Ha. 1 t.=10 q=100 Kg. 1 s.=1 cu.m.=1,000,000 c.c. 1 μ =1 mikron=0.000001 m. 1 γ =1 mikrogram=0.000001 g. 1 λ =1 mikrolitre=0.000001 l.

METRIC AND APPROXIMATE ENGLISH EQUIVALENTS.

1 m.=39.37 inches=3 $\frac{1}{4}$ ft
1 Kg.=2.2046 lb.
1 tonne=0.9342 tons.
1 Km.=0.62135 miles=5 furlongs.
1 sq. Km.=0.3862 sq. miles=247.17 acres.
1 Ha.=2.471 acres.
1 l.=0.2199 gallons=1 $\frac{1}{4}$ pints.
1 g.=15 $\frac{1}{2}$ grains.

METRONOME. Instrument for indicating the exact pace of music. It comprises an inverted pendulum, driven by clockwork,



Metronome. Military form of instrument for measuring musical time
Hawkes & Son

its speed of vibration being controlled by sliding a weight moved along the pendulum rod, which is graduated. Some early metronomes had arbitrary rates of time, but the minute is now adopted as the standard, so that the indication $\text{♩} = 88$ (for example) means that the pace is to be 88 minims to the minute, and so forth. Experiments in its construction date back to the 17th cent.

METROPOLIS. Chief or mother city of a country. London is the metropolis of England, and so the word metropolis is used for certain of its activities, e.g. Metropolitan Police, and Metropolitan Water Board. The Metropolitan Asylums Board was abolished in 1929, its duties being transferred to the London County Council. See London.

METROPOLITAN. Term for the chief bishop of a country or province. In the Greek Church a metropolitan is intermediate between a patriarch and archbishop, but in the R.C. Church is equivalent to an archbishop. In the Anglican communion he is generally the head of an ecclesiastical province. The metropolitans in England are the archbishops of Canterbury and York.

METROPOLITAN WATER BOARD. Municipal body established in 1902 to take over the task of supplying London with water. It provides water, largely from the Thames and the Lea, for nearly 7,500,000 persons who live on 574 sq. m. of land in the counties of London, Middlesex, Surrey, Kent, Essex and Hertford. Its offices are at 173, Rosebery Avenue, E.C.

METSU, GABRIEL (1630-1667). Dutch painter. Born at Leiden, he was a pupil of Gerard Douw, and in 1657 went to Amsterdam, where he died. At first he worked in the neat

and smooth manner of Douw, but about 1655 he came under Rembrandt's influence. Later he reverted to a more minute and finished manner. Examples of his work, scenes of domestic life, are in the National Gallery and Wallace Collection, London.

METTERNICH, PRINCE (1773-1859) Austrian diplomatist, in full Clemens Lothar Wenzel Metternich. He was born at Coblenz, May 15, 1773, and entered the Austrian diplomatic service in 1794. He was Austrian minister at a succession of European courts between 1801-7, and became the foreign minister in 1809. To Metternich more than to any other man was due the victory of the reaction after 1815, the suppression



Prince Metternich, Austrian diplomatist

of popular, constitutionalist, or nationalist movements in every quarter, the domination exercised over Europe by the Holy Alliance, and the falling away of the tsar from his own liberal ideas. In 1848-49 he fell from power, and he died at Vienna, June 11, 1859.

METZ. Town of France, formerly the capital of Lorraine, now the capital of the dept. of Moselle. It lies on the river Moselle, here joined by the Seille, 31 m. by rly. N. of Nancy.

A rly. junction of importance, Metz is chiefly noted as a fortress and military centre, and is surrounded by a double ring of detached forts. There is considerable river traffic, and the town is a centre of trade in agricultural produce, fruit, and wine. The older streets are narrow and winding, but the parts built after 1871 are broad thoroughfares with houses often of characteristically German design. The cathedral is a Gothic building begun in the 14th century, with fine stained glass. The Esplanade, with its fine trees, is a feature. Since 1918 all the streets have been renamed, many of them bearing the names of Allied generals and statesmen.

Metz was incorporated in France in 1648, and was later fortified by Vauban. In 1870 Bazaine surrendered it to the Prussians, and by the treaty of Frankfurt (1871) it passed to Germany, becoming the chief German bulwark on the W. frontier. It was restored to France in 1919. Pop. 69,624.

MEUNIER, CONSTANTIN (1831-1905). Belgian sculptor and painter. Born at Etterbeek, Brussels, April 12, 1831, he first appeared at the Brussels Salon in 1851 with a piece of sculpture, *Guirlande*. For a time he abandoned sculpture and painted scenes from the life of the Trappists, and also of peasant life and pictures of workers in Spain. He returned to sculpture and devoted himself to portraying scenes from the life of the workers in the coal mines, having his studio in Louvain in the heart of the Belgian black country. His chief works include pieces in the Museum of Decorative Arts, Brussels; and *Au Pays Noir* in the Luxembourg Museum. He died April 4, 1905.

MEUSE. River of Europe called by the Dutch the Maas. It rises about 16 m. N.E. of Langres, Haute-Marne, flows N. through the depts. of Vosges, Meuse, and Ardennes, and passes into Belgium just beyond Givet. At Namur it turns N.E., and it enters Dutch territory just S of Maastricht.

The river then flows N. and W. until it joins the Waal, a branch of the lower Rhine, near Gorkum, where it becomes the Merwede, and, after passing the marshy tract known as the Biesbosch enters the North Sea by several mouths. Among its tributaries are the Sambre, Semoy, Lesse, Ourthe, and Roer, and among the towns on its banks are Verdun, Mézières, Dinant, Namur, Huy, Liège, Maestricht, and Venlo. Navigable up to a point near Verdun, the Meuse is joined by several canals. Its total length is 575 m. Fighting took place along the Meuse between the French and the Germans in Aug., 1914.

Meuse is also the name of a department of France. On the frontiers of Belgium, it is watered by the Meuse. Bar-le-Duc is the capital and Verdun is in the department.

MEXBOROUGH. Urban dist. and market town of Yorkshire (W.R.). It stands on the Don, 5 m. from Rotherham and 11 m. from Sheffield, with stations on the L.N.E. and L.M.S. Rlys. The chief industries are iron-works and the making of pottery and glass, while around are coal mines. Market days, Mon. and Sat. Pop. 15,410.

The Irish title of earl of Mexborough has been borne since 1766 by the family of Savile. The family estates are in Yorkshire, and the earl's eldest son is called Viscount Pollington.



Metz Cathedral, part of which dates from the 13th century

MEXICO. Republic of North America, occupying the southern extension of the continent toward Central America. Bounded N. by the United States, and S.E. by British Honduras and Guatemala, it has a coastline of over 1,500 m. on the Atlantic (Gulf of Mexico), and of over 2,000 m. on the Pacific side, the length being enhanced on the one side by the hammer-shaped peninsula of Yucatan in the S.E., and on the other by the narrower, longer peninsula of Lower California in the N.W.

The capital is Mexico City. Other important towns include Guadalajara, Puebla, Monterey, San Luis Potosi, and Leon. The chief Atlantic

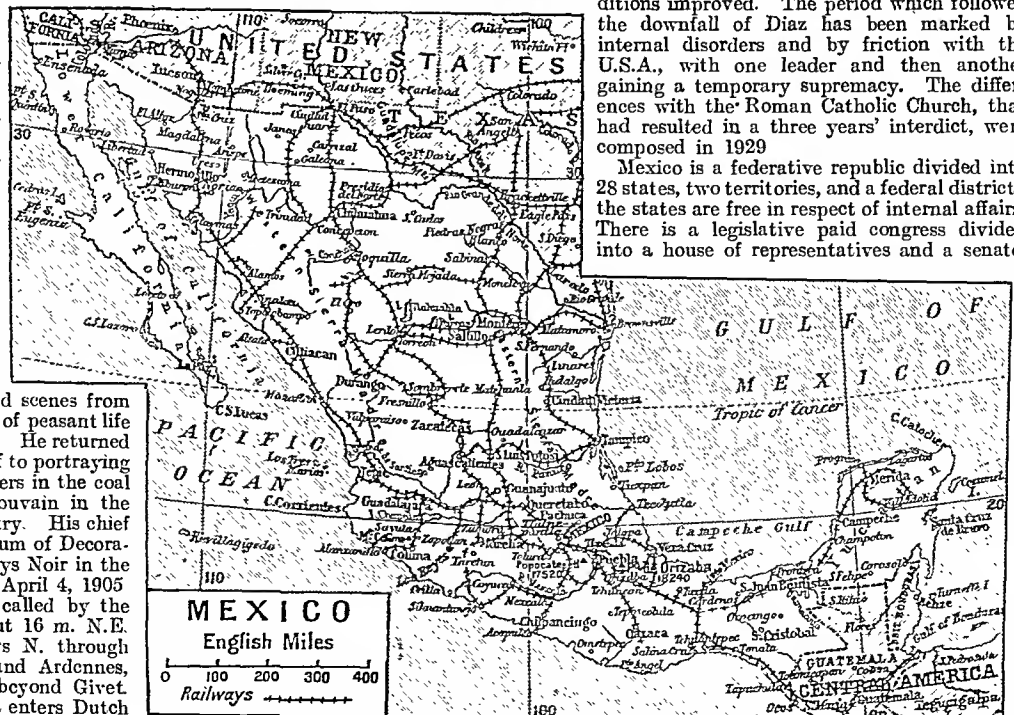
ports are Tampico, Vera Cruz, Puerto Mexico, and Progreso. The chief Pacific ports are Salina Cruz, Acapulco, Manzanillo, and Mazatlan. The area is 767,000 sq. m. The population is somewhere about 15,000,000. Perhaps a sixth, or less, are Creoles; a full half are mestizos or half-castes. The Indians are indigenous.

The most important food crop is maize. The country is not, as a rule, self-sufficing in either maize or wheat. The frijol and other beans are grown and eaten; oranges, bananas, vines, agaves, from which the beverages pulque and mezcal are distilled, sugar and coffee are cultivated for home consumption and export. Fibre plants are specially important; among these is the henequen or sisal hemp of Yucatan. Cotton is grown in central Mexico; the guayule and other wild plants yield rubber, which is also cultivated. Among vegetable gums, the chicle is the basis of chewing gum. The forests yield mahogany, rosewood, logwood, sandalwood, and ebony. Cattle ranching is an important occupation.

The mineral wealth is immense. Silver, gold, copper, iron, lead, and zinc are the most important metals, and coal and salt are found. The oil fields are among the most important in the world. There are a few large metallurgical works. The total mileage of rlys. is somewhat over 15,000. There are some 25 wireless stations.

HISTORY. In the two centuries before the Spanish conquest, the Aztecs established their rule over a great part of Mexico. In the reign of Montezuma II (q.v.) Mexico was invaded by the Spaniards under Cortes (q.v.), and conquered in 1519-21. For three centuries it was governed by Spain. In 1821 Iturbide declared himself emperor, but in 1824 a republic was established. Napoleon III had a vision of a Franco-American empire, and the French took Mexico City in 1863, and installed a provisional government which elected Maximilian (q.v.), brother of the Austrian emperor, as emperor. On the fall of the empire in 1867 a republic was again set up, which has lasted to the present day. In 1876 Diaz (q.v.) was elected president, a position he held till 1911. He became, after his re-election in 1884, a dictator. Under his rule the finances were rehabilitated, guerrilla warfare was put down, and economic conditions improved. The period which followed the downfall of Diaz has been marked by internal disorders and by friction with the U.S.A., with one leader and then another gaining a temporary supremacy. The differences with the Roman Catholic Church, that had resulted in a three years' interdict, were composed in 1929.

Mexico is a federative republic divided into 28 states, two territories, and a federal district: the states are free in respect of internal affairs. There is a legislative paid congress divided into a house of representatives and a senate.



MEXICO
English Miles

0 100 200 300 400
Railways

Mexico. Map of the southern republic of North America, showing railway connections with the U.S.A.

both elected. The federal executive is vested in an elected president. Each state has a republican form of government, and is under an elected governor. *See* Aztec; Maya; consult also *History of the Conquest of Mexico*, 3 vols., W. H. Prescott, rev. ed. 1903.

MEXICO CITY. City of N. America, capital of the republic of Mexico. It lies within the federal dist. on the plateau of Anahuac, at an alt. of 7,350 ft., 290 m. by rly. from Acapulco on the Pacific Ocean, and 263 m. from Vera Cruz on the Gulf of Mexico. It is the chief business and distributing centre of the country. The manufactures include textiles, cigarettes, boots and shoes, flour, chocolate, furniture, pianos, glass, soap, etc. The cathedral, begun in 1572, occupies the site of the temple of Huitzilopochtli, the war-god of the Aztecs. The Plaza de la Constitución, or Plaza de Armas, or Plaza Mayor, is the centre of the city; it covers 14 acres, and the park and promenade, the Alameda, covers 40 acres. Many of the houses have terraced roofs and inner courts, and the older quarters maintain the appearance of a Spanish city. Pop. 906,063.

The Gulf of Mexico is a gulf or sea forming a westward extension of the Atlantic Ocean. Almost entirely enclosed by land, it has the U.S.A. on the N., Mexico on the W. and S. It has a greatest length from E. to W. of 1,150 m. and a greatest breadth N. to S. of 680 m.

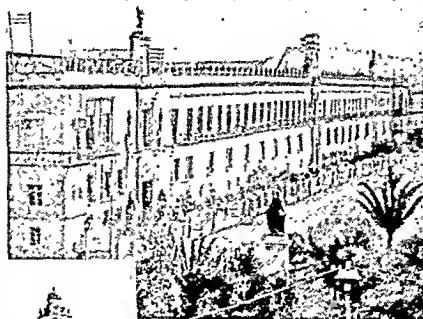
MEYER, FREDERICK BROTHERTON (1847-1929) British Nonconformist divine. Born in London, April 8, 1847, he studied for the Baptist ministry at Regent's Park College. After holding charges in Liverpool and York he became minister of Victoria Road Church, Leicester, in 1874, where his ministry was so successful that a special building, known as Melbourne Hall, was erected for him in 1878. Minister of Regent's Park Chapel, London, 1888-92, he was at Christ Church, Westminster Bridge Road, 1892-1909. In 1909 he returned to Regent's Park Chapel, and held the pastorate until 1915, when he returned to Christ Church. Meyer, who wrote many theological works, retired from the active ministry in 1920, and died Mar. 28, 1929.

MEYERBEER, JAKOB (1791-1864). German composer. Born in Berlin, Sept. 5, 1791, the son of a Jewish banker, Herz Beer, his name was originally Jakob Liebmann Beer. After becoming one of the most brilliant pianists of the day he turned to composition. His works include the operas *Robert the Devil*, *The Huguenots*, and *The Prophet*. He died May 2, 1864. Pron. Myer-bare.

MEYNELL. English hunt. It hunts a district in Derbyshire and Staffordshire. Sudbury is about the centre, while Burton-on-Trent, Tutbury, and Uttoxeter are in the area. The hounds belong to the members.

MEYNELL, ALICE CHRISTIANA (1850-1922). British poet. Daughter of T. J. Thompson, and sister of Lady Butler, the battle painter, she was educated by her father, often in Italy, while Ruskin and Henley encouraged her literary ambitions. She married

Wilfrid Meynell in 1877. She wrote on John Ruskin, 1900, selected the verses of John B. Tabb, 1906, and embodied the record of her



Mexico. The cathedral, founded in 1572. Above, National Palace in the Plaza Mayor. It houses a museum of Aztec relics

finished taste in *The Flower of the Mind* a general anthology of English verse, 1897, besides writing prefaces and essays. Her own poems were collected in 1913. She died Nov. 27, 1922. A Memoir by her daughter, Viola Meynell, appeared in 1929.

MÉZIÈRES. Town of France, capital of the dept. of the Ardennes. It stands on both banks of the Meuse, 47 m. N.E. of Reims, and with Charleville (q.v.) on the left bank forms the twin town of Mézières-Charleville. It was captured by the Prussians in 1815 and 1871, and in the Great War the Germans captured it in Aug., 1914, and established a headquarters there. Mézières has been adopted by Manchester. Pop. 9,873.

A village of this name is in the dept. of Somme, 15 m. S.E. of Amiens. Evacuated by the British in March, 1918, it fell to the Germans, and it was recaptured by the Canadians, Aug., 1918.

MEZZOTINT. Process of engraving. A copper or steel plate is taken and the "ground" made thereon by means of a "cradle" or rocking tool, which raises a burr all over. This, if inked and printed, would give a uniform black. To obtain the picture, the high lights are scraped away by a scraper and then burnished with a burnisher, the middle lights being treated in the same way, though less drastically, and the darkest shadows left intact. Introduced into England in 1660, Mezzotint reached the zenith of perfection towards the end of the 18th century. On the Continent it never really took root. It became an art of first-class importance with the rise to fame of Reynolds, Gainsborough, Romney, and other English masters, whose manner lent itself specially to reproduction in this medium. The later introduction of steel-faced plates hastened the abandonment of pure mezzotint for a mixed style of mezzotint and line and stipple engraving. *See* Engraving; Etching.

MHO. In electricity, the unit of conductance or electric conductivity. It is the reciprocal of resistance, the term mho being ohm written backwards.



Alice Meynell, British poet
Russell

MIAMI. City and winter resort of Florida, U.S.A., on the N. bank of the Miami river. Great damage was caused and many lives lost by a hurricane, Sept., 1926. Pop. 131,286.

MICA. In mineralogy, a group of minerals characterised by ready cleavage into thin plates. Muscovite, common mica, or tale, is a colourless mixture of potassium and aluminium silicate, widely used for lamp

chimneys and the doors of stoves on account of its transparency and resistance to changes of heat. It is also employed for insulating purposes. Paragonite is a sodium and aluminium silicate, yellow to green in colour; lepidolite, a rose-coloured potassium, lithium, and aluminium silicate; biotite, a dark-green, brown, and black magnesium iron silicate occurring in many crystalline rocks; and lepidomelane, a black iron mica. Micaceous minerals are mined extensively in India and the U.S.A.

MICA SCHIST. Name given to a metamorphic rock having a schistose or foliated structure, and composed chiefly of mica and quartz, arranged in alternate irregular bands. The rock cleaves easily along the mica bands. Garnet, tourmaline, etc., frequently occur in the rock, which is widely scattered.

MICAH. One of the minor prophets. A native of Moresheth, near Gath, and a younger contemporary with Isaiah, he prophesied in the reigns of Jotham, Ahaz, and Hezekiah. Of his prophecies the earlier chapters denounce oppression and drunkenness and predict the ruin of the nations. Then follow Messianic predictions of restoration and future glory. The closing chapters deal with the controversy between God and His people.

MICHAEL (Heb. Who is like God?) Name given to one of the angels in the books of Daniel and Revelation. In Dan. 12, 1, he is described as the great prince which standeth for the people. He is thus the champion of the Israelites against the prince-angels of the Persians and the Greeks. In Rev. 12, 7, he is the victorious leader of the good angels (the Archangel) against the Dragon (the old serpent, he that is called the Devil and Satan) and his angels. *See* Angel; Archangel; Michaelmas.

MICHAEL (b. 1921). King of Rumania. The son of Charles or Carol and Helen, a princess of Greece, he was born Oct. 25, 1921. When his grandfather, Ferdinand, died, July 21, 1927, Michael was proclaimed king, as his father had renounced the succession and left the country. He reigned, guided by a council of regency, until June, 1930, when Carol returned and was accepted as king.

MICHAELMAS. Feast of S. Michael and All Angels, Sept. 29. It was instituted in 487. In England it is a quarter day. In the United Kingdom magistrates are usually appointed at or about Michaelmas. Until 1873 the first term of the legal year was Michaelmas term.

MICHELANGELO (1475-1564). Italian artist. Born March 6, 1475, at Caprese, the son of Ludovico Buonarroti, he was apprenticed



Michelangelo, Italian artist
Capitoline Gallery, Rome

to the painter Ghirlandaio, from whom he soon drew the famous complaint, "This boy knows more than I do." Catching the eye of Lorenzo de' Medici with his first sculpture, the lad was forthwith given rooms in the palace. After Lorenzo's death in 1492 he went to Bologna, but returned in 1495 to Florence.

Called to Rome in 1496 by a cardinal who had bought his *Sleeping Cupid* as an antique, the young sculptor was soon at work on the superb group of his *Pietà*; and when at 26 he again entered Florence, he was hailed as the first sculptor of his age. Finding a large discarded block of marble, he wrought out of it his masterpiece the colossal *David* (*see* illus. p. 489). At this time he painted the *Holy Family*, now in the Uffizi Gallery, Florence.

In 1505 he was summoned to Rome by Pope Julius II, who ordered a magnificent

monument to himself. Michelangelo set to work, but tricked by the pope over money, he left in a rage for Florence. Reconciled to the pope in 1503, he returned to Rome to finish the great sculptures for the Julian tomb. Instead he was given the task of painting the Sistine chapel. He completed this stupendous work, practically unaided, on Nov. 1, 1512.

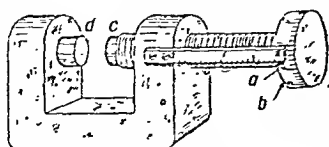
In 1527 Florence shook off the yoke of the Medici, and Michelangelo, now 52, flung himself into the war of liberty. But after the fall of the city Michelangelo resumed many unfinished commissions, including the Tomb of Giuliano and Lorenzo de' Medici in 1534. In that year he went again to Rome, where the new pope, Paul III, compelled him to the painting of the vast Last Judgment. In 1545, at 70, Michelangelo completed his much modified design of the huge Julian tomb. The following year, Pope Paul III made him architect to complete the great church of S. Peter. He died Feb. 18, 1564.

MICHIGAN. Lake of the U.S.A., the second largest of the five Great Lakes of North America. It is 320 m. long, has a mean breadth of 65 m., and covers an area of 22,400 sq. m. Communication with Lake Huron is provided by the Strait of Mackinac and with the Mississippi river by the Chicago Drainage Canal. Chicago, Milwaukee, Manistee, and Sheboygan are on its shores.

MICHIGAN. Northern state of the U.S.A., known as the Peninsula State, from its division by Lake Michigan into two peninsulas. The N. peninsula is traversed by low mountains, and is rich in minerals; the S. peninsula is hilly in the N., with a prairie expanse towards the S. Thousands of small lakes break the surface, while the Muskegon, Grand, Kalamazoo, and many other rivers supply water-power. Maize, oats, wheat, potatoes, hay, and sugar beets are extensively cultivated, and iron and copper mined; silver, salt, coal, and cement are also worked. The state university, at Ann Arbor, the State Agricultural College, at Lansing, and the College of Mines at Houghton, are among numerous educational institutions. Besides 8,397 m. of steam and 944 m. of electric railroad, the St. Mary's Falls Ship Canal ('Soo' canal) is available for transport. Lansing is the capital, and Detroit the chief city. The area is 57,980 sq. m. Pop. 4,600,000.

MICKIEWICZ, ADAM (1798-1855). Polish poet. Born near Novogrodek, Lithuania, Dec. 24, 1798, he was arrested in 1824 as a political suspect, and banished to the interior of Russia. He wrote a series of sonnets on the Crimea, which he visited in 1825, and composed epics, which celebrate the struggle of the Lithuanians against the Teutonic Knights. Permitted in 1829 to travel abroad, Mickiewicz went to Rome, where he wrote the epic Pan Tadeusz, his finest work, published in 1834 (Eng. trans. 1886). Mickiewicz was in Paris as professor of Slavonic literatures at the Collège de France, 1840-44, but was dismissed for political propaganda in his lectures. He died in Constantinople, Nov. 26, 1855. Pron. Misk-yevitch.

MICROMETER. Instrument for making accurate minute linear measurements. The most common form is the micrometer screw, which depends upon the fact that if a screw is completely rotated, its point will move through a distance equivalent to that between two consecutive threads. By making the pitch small and by attaching to its base a graduated head of comparatively large diameter it is possible to read a fraction of a rotation and thus measure with great accuracy



Micrometer. Plain screw micrometer; a, straight edge; b, divided head; c, end of screw; d, stop between which and e the object being measured is held

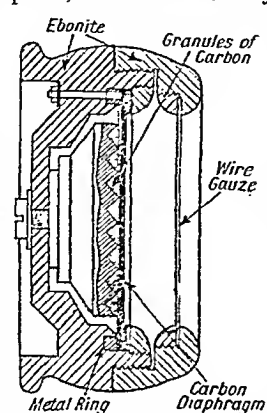
By courtesy of Percival Marshall & Co.

the distance moved over by the point of the screw. A vernier is usually provided.

In a telescope the micrometer is attached to a framework of wires fitted over the eyepiece. The micrometer screw alters the position of movable wires with regard to a central one and facilitates the measurement of small angular distances among neighbouring stars.

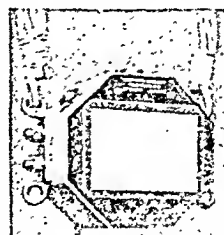
MICRONESIAN. Term denoting the inhabitants of the diminutive islands N. of Melanesia in the W. Pacific. First occupied by a Papuan, then by an Indonesian immigration, this group was afterwards affected by other racial and cultural influences, especially Malayan, Japanese, and Samoan.

MICROPHONE. Instrument for the intensification of sound. The contact microphone, invented in 1878 by Hughes, depends upon the fact that, if there are loose contacts in an electric circuit, the resistance of the circuit varied as sound waves cause the contacts to vibrate. In a common type a funnel-shaped mouth-piece concentrates the sound waves on to a thin disk of carbon. The surface of a second carbon plate is cut into small pyramids, and the space between the two plates is filled with carbon granules. The vibration of the first disk presses and releases the carbon granules alternately, by so doing causing variation of electrical resistance.



Micophone. Type of contact microphone used as a transmitter in telephone apparatus

In the electrodynamic microphone a light flat coil of wire is suspended in a magnetic field and forms the diaphragm. As it moves in response to the sound waves, an electric current is produced in the coil and, suitably amplified, is caused to activate the transmitter. The electrostatic or condenser microphone comprises a thin metal diaphragm stretched in front of a heavy metal backplate, from which it is separated by a narrow air space. This arrangement constitutes a condenser, and the vibration of the diaphragm causes variations of capacity between diaphragm and backplate. These are changed into current variations and then amplified. See Amplifier; Telephone; Wireless Telegraphy.



Microphone. Reisz carbon microphone, as used in broadcasting studios. Courtesy of British Broadcasting Corporation

MICROSCOPE (Gr. mikros, small; skopein, to look at). Optical instrument for the examination and magnification of small objects. In its simplest form, that of a single lens, it is very ancient, but the high-powered compound microscope is comparatively modern invention. The single lens gave a coloured and distorted image, and it was not until

the invention of the achromatic lens by Chester Moor Hall, 1729, and John Dollond, 1752, that any great advance was made.

The researches from 1873-81 of Professor E. Abbe, combined with the skill of the German glass-maker Dr. Schott, brought about a great increase in the powers of the microscope.

A simple form of microscope consists of a magnifying lens at one end of a tube and another lens at the other end, serving as an eye-piece. In modern microscopes the two simple lenses are replaced by two complicated systems of lenses. The system nearest the object being examined is called the objective, and that nearest the eye the eyepiece. The objective is the more important part, its function being to collect the rays of light from the object and bring them to the focal image. By the use of quartz lenses it became possible to construct a microscope to enable objects to be examined that are too small to be viewed by ordinary light.

The Royal Microscopical Society was founded in 1839. It publishes a quarterly journal and has its headquarters at 20, Hanover Square, London, W.

MIDAS. Legendary king of Phrygia. Having done a favour to Silenus, he asked that whatever he touched should be turned into gold. Finding that even his food turned to gold before it reached his lips, he asked Bacchus to revoke the gift. By command of the god he bathed in the springs of the river Pactolus, and the helpful power left him. Pron. My-das.

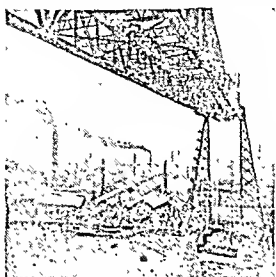
MIDDELBURG. Town of the Netherlands. Capital of the prov. of Zeeland, it stands 4 m. by rly. N.N.E. of Flushing. The town contains many old houses, and is encircled by a strip of water known as the Vest. The Gothic Stadhuis, with a tower 180 ft. high, dates from the early 16th century. The abbey of S. Nicholas, founded in 1106, used for administrative purposes, has cloisters of the 16th century, and contains interesting tapestries. The new church, formerly the abbey church, has a lofty tower, rebuilt in 1718, with a fine carillon. Pop. 19,020.

MIDDELBURG. Town in the Transvaal, S. Africa. It is 95 m. by rly. E. of Pretoria. Near are extensive coal mines. It is a trading centre with rly. connexion to Pretoria, Johannesburg, and Lourenço Marques. Pop. 2,274. There is another Middelburg, a town in Cape Province. Pop. 2,694 whites.

MIDDLE AGES. Name given to the ten or eleven centuries intervening between ancient and modern times. Definite dates for the beginning and the end of the Middle Ages can only be assigned arbitrarily; those most in favour are the sack of Rome by Alaric the Goth, 410, or the deposition of the last Roman Emperor in Italy, Romulus Augustulus, 476, and the capture of Constantinople by the Turks, 1453, or the discovery of America by Columbus, 1492. The essential facts are that

early in the fifth century the old Roman civilization of Western Europe was submerged by the barbarian flood of Teutonic invasion; a new civilization gradually emerged in a new Europe; and then the new Europe awoke gradually to fresh intellectual ideas, and to the existence of a whole new world outside itself. There are two main periods, roughly known as the Dark Ages and the Age of Chivalry.

MIDDLESBROUGH. County and mun. borough, seaport, and market town of Yorkshire (N.R.). It stands on the S. side of the



Middlesbrough, Transporter bridge, looking towards the furnaces

man museum, and Roman Catholic cathedral. The commercial centre of the coal and ironstone mines of the Cleveland district, Middlesbrough has foundries, furnaces, and other works for the production of iron and steel on an enormous scale. The river forms a harbour protected by two breakwaters; in it are modern and capacious docks. Shipbuilding is another industry. Two members are returned to Parliament. Market day, Sat. Pop. 131,103.

MIDDLESEX. County of England. Wholly inland, its area is 233 sq. m. On the S. the Thames separates it from Surrey, as on

the E. the Lea separates it from Essex. Other rivers are the Crane, Colne, and Brent. The surface is fairly level, although there is a range of hills in the N., and the soil is fertile. Brentford is the county town, but much of the business is done in London. Save for a small and decreasing rural area in the W., it is covered with towns and urban districts, suburbs of London. These include the boroughs of Acton, Ealing, Hornsey, and Twickenham, and the populous urban districts of

Willesden, Edmonton, Chiswick, Enfield, Finchley, and Tottenham. In the county, too, are Hampton, Harrow, Staines, Southall, Teddington, Wembley, and Kenton. It sends ten members to Parliament, and is in the diocese of London, except for a small portion in that of Oxford. Pop. 1,253,002.

The Middlesex Hospital is a London Hospital founded in 1745. Situated in Mortimer Street, London, it has over 400 beds. A cancer wing was opened in 1900. There is an excellent medical school. In 1926 the institute of bio-chemistry was opened here. The hospital was being rebuilt in 1930.

MIDDLESEX REGIMENT. Regiment of the British army. Officially known as The Middlesex Regiment (Duke of Cambridge's

Own), it is an amalgamation of the 57th and 77th Foot, raised in 1755 and 1787 respectively. For a number of years the men served as marines. Its proudest fighting records were gained in the Peninsular War, when among other feats the valour of the regiment in dying face to the foe at Albuera earned it its famous title of Die-Hards. Further battle honours were gained during the Crimean War and in the New Zealand War. During the South African War the Middlesex was specially mentioned for gallantry at Spion Kop. Before the Great War this was one of the few regiments which had four regular battalions. Both its regular and auxiliary battalions did splendid service during the Great War. The regimental depot is at Mill Hill.

MIDDLETON. Borough of Lancashire, England. It is 6 m. N. of Manchester, on the L.M.S. Rly. It received a charter for a weekly market in 1791. There are large silk and cotton factories, calico printing works, iron foundries, chemical works, and extensive collieries in the neighbourhood. Middleton and Prestwich form a co. division to send one member to Parliament. Pop. 28,290.



Thomas Middleton, English dramatist After J. Thurston

Tees, with a station on the L.N.E. Rly., 16 m. from Appleby. Market day, Tues. Pop. 2,000.

The Scottish title of earl of Middleton was borne from 1656 to 1695 by the Middleton family. Two earls won fame by serving Charles II and James II.

MIDDLETON, THOMAS (c. 1570-1627). English dramatist. Born in London of a good family, he was a member of Gray's Inn, and wrote some satirical tracts. About 1600 he turned his attention to the stage, composing 15 plays independently, and seven in collaboration with Dekker, Rowley, and others, and became city chronologer in 1620. His work is

marked by coarseness, pointed dialogue, subtle satire, and penetrating wit. Of his comedies of London manners, *A Trick to Catch the Old One* is the most notable. His best independent tragedy is *Women Beware Women*.

MIDDLEWICH. Market town and urban dist. of Cheshire. It is 6 m. from Northwich, near the river Dane, and is served by the L.M.S. Rly. and the Trent and Mersey canal. The chief building is the old church of S. Michael, and the chief industry the manufacture of salt, which is extracted from the brine springs here. Chemicals are also made. Market day, Tues. Pop. 5,900.

MIDGE. Name applied vaguely to many dipterous insects resembling small gnats, but correctly restricted to the family Chironomidae.



Middlesex Regimental badge

They may be seen on summer evenings in dense swarms, and are often mistaken for gnats. The majority lack the skin-piercing proboscis of the gnat, but one genus has lance-like jaws capable of drawing blood.

MIDHURST. Town of Sussex. It stands on the Rother, 12 m. from Chichester, with a station on the S.R. The church is a Perpendicular building. There is a 17th cent. grammar school, and the Spread Eagle inn dates in part from the 15th cent. About 4 m. N. is the King Edward VII sanatorium for consumptives, opened in 1905. Near are the ruins of Cowdray Castle, now the property of Viscount Cowdray. Pop. 1,890.

MIDI. District of France. Without any definite area, it is generally regarded as the region between the Bay of Biscay and the Mediterranean. Tonlouse is its capital. It was originally the Middle Land between France and Spain.

The canal du Midi runs from Tonlouse to La Nouvelle, near Narbonne, on the Étang de Thau. Known also as the canal du Languedoc, it connects with the canalised Garonne, and thus unites the Mediterranean with the Atlantic. In the 148 m. of its length there are 100 locks, and among towns served by it are Toulouse, Carcassonne, and Narbonne.

Midland Junction. Town of Western Australia. A rly. junction 10 m. N. of Perth, it has a pop. of 3,900.

MIDDLETON or **MIDDLETON.** Urban dist. of Co. Cork, Irish Free State. It stands on the Owencurra, which enters Cork harbour just below the town, 13 m. from Cork with a station on the G.S. Rlys. There is a grammar school founded in 1709. Pop. 2,732.

MIDDLETON, ST. JOHN BRODRICK, 1st EARL OF (b. 1856) British politician. Born Dec. 14, 1856, the eldest son of the 8th Viscount Middleton (1830-1907), he became M.P. for West Surrey in 1880. In 1907 he succeeded to the peerage. Brodrick began his official career as a Conservative politician in 1886 by being made financial secretary to the war office. In 1895 he was made under-secretary of state for war; in 1898 under-secretary for foreign affairs, and in 1900 secretary for war. In 1903 he became secretary of state for India, and he left office in 1905. In 1920 he was made an earl.

The Irish title of Viscount Middleton was given in 1717 to Alan Brodrick (d. 1728). The family seat is Peper Harow, Godalming. The earl's eldest son is called Viscount Dunsford.

MIDLOTHIAN or **EDINBURGSHIRE.** County of Scotland. It has a coastline of 12 m. on the Firth of Forth. Its area is 370 sq. m., this including the island of Cramond. The area is hilly, save on the coast; herein are the Pentland and Moorfoot Hills, with several peaks over 1,500 ft. high, as well as Arthur's Seat and other heights around Edinburgh (q.v.). The chief rivers are the Esk, Water of Leith, Almond, and Gala. Edinburgh is the capital. In the county, too, are Leith, now part of Edinburgh, Dalkeith, Musselburgh, Mid-Calder, and Penicuik, as well as such picturesque spots as Roslin, Hawthornden, and Newbattle. The county is served by the L.N.E. and L.M.S. Rlys. Apart from Edinburgh it sends, with Peeblesshire, two members to Parliament. Pop. 513,800.

The earl of Rosebery is also earl of Midlothian. See map, p. 959.

MIDRASH. Ancient Hebrew commentary on the O.T., consisting of a vast number of comments by various authors, mixed with



Middlesex. Map of the county north of the Thames



1st Earl of Middleton, British politician Russell

tales and folklore. The term is also applied to the tales in the O.T. illustrating religious truths, such as the books of Ruth and Jonah.

MIDSHIPMAN. In the British navy, a junior officer between the ranks of naval cadet and sub-lieutenant. The name is derived from the fact that the quarters of the "young gentlemen" qualifying for commissions were situated amidships on the lower deck. A naval cadet begins his training between the ages of 13 and 14, and after passing the courses in the prescribed training colleges becomes a midshipman and goes to sea. In addition to pursuing his studies under a naval instructor, the midshipman, or "snotty," takes part in the daily routine of the ship. Midshipmen mess in the gun room. Their badge is a white tab on the collar of the jacket, and for side arms they carry a dirk instead of a sword. See Naval Cadet.

Midshipman's uniform, British Navy

MIDSOMER NORTON. Urban dist. of Somerset. It is 12 m. from Bath on the G.W. Rly. and the little river Somer. The chief building is the Perpendicular church of S. John the Baptist, rebuilt in the 19th century. The small Somerset coalfield is in the neighbourhood. Pop. 7,770.

MIDSUMMER DAY. June 24, popularly the middle day of summer. Astronomically the period of the summer solstice (about June 21) is the beginning of summer. Midsummer Day is the feast of the Nativity of S. John the Baptist, and is an English quarter day. The term midsummer madness may refer to the boisterous festivities of Midsummer Eve, or to the supposed effect of the midsummer moon.

Midsummer man is the plant orpine (*Sedum telephium*), used by girls on midsummer eve as a test of their lovers' fidelity.

MIDWIFE. Woman who assists women during childbirth. In England and Wales, under the Midwives Acts of 1902 and 1908, no woman is allowed to practise midwifery for gain unless certified as a midwife. The central midwives board is a body set up in 1905 to control the examination and registration of midwives in England and Wales. The offices are 1, Queen Anne's Gate Buildings, London, S.W. No woman can now be certified unless she has followed a prescribed course of study and passed certain examinations.

MIEREVELT, MICHEL JANSZ VAN (1567-1651). Dutch painter. Born at Delft, May 1, 1567, he studied there and at Utrecht, and became painter to the prince of Orange. He was famed for his numerous portraits, among which are those of Grotius, Gustavus Adolphus of Sweden, Huygens, Coligny, the duke of Buckingham, and William the Silent, and he left also some still life and genre paintings. One of his portraits is in the National Gallery, London. He died at Delft, July 27, 1651.

MIERIS, FRANS VAN, THE ELDER (1635-1681). Dutch painter. Born at Leiden, April 16, 1635, he studied at first under a glass painter, Abraham Toorenvliet, then under van den Tempel, and later under Gerard Douw, and became a member of the Leiden Guild, 1658. He painted scenes of better class Dutch life. He died March 12, 1681. Most continental galleries possess examples of his work. His sons Jan and Willem and his grandson Frans were also painters.

MIGNONETTE (*Rosa odorata*). Perennial herb of the order Rosaceae. Introduced to British gardens from Egypt in 1752, it has become popular owing to its fragrant flowers. The stem branches from its base, and the plant becomes a rather diffuse clump, bearing alternate lance-shaped leaves, simple or three-lobed. The flowers are borne in dense pyramidal racemes at the ends of the shoots. The petals are divided into slender segments.

MIGRAINE, MEGRIN, OR HEMICRANIA (Gr. hemi, half; kranion, skull). Severe headache occurring in paroxysms. Heredity plays an important part in causing the disorder, and other factors are dyspepsia, anxiety, and reflex strain, such as may be caused by an error of refraction. Disturbances of vision, numbness, and tingling of the tongue, face, and hands may precede the attack, and sometimes cramps in the muscles of the affected side and nausea and vomiting occur. The symptoms, sometimes including headache spread over the whole head, may last from a day to three days. Treatment consists in avoiding excitement or overwork, and in moderation in diet.

MIKADO. Title used by Europeans, rarely by Japanese, for the emperor of Japan. The word means exalted gate. According to Japanese official chronology Jimmu, the first emperor, ascended the throne 660 B.C. and all subsequent emperors trace descent from him. Seven of the mikados were women.



Milan Cathedral from the Piazza del Duomo. It is remarkable for the number and beauty of its pinnacles and the delicate tracery of the whole structure

The Mikado is the name of a comic opera by W. S. Gilbert, with music by Arthur Sullivan. It was produced at the Savoy Theatre, London, March 14, 1885, where it had a run of 672 performances.

MILAN (Milano). City of Italy. The ancient Mediolanum, it stands on the river Olona, 93 m. by rly. E.N.E. of Turin. Architecturally, Milan's principal glory is the magnificent cathedral dedicated to the Virgin. Faced with white marble, its many decorations make it one of the most sumptuous churches in the world. The roof has over 4,000 marble statues and many pinnacles. The church of S. Ambrose is a Roman basilica, practically rebuilt in the 12th century, modernised and restored. Its lofty brick campanile is one of the earliest in Italy. The monastery adjoining the church of S. Maria delle Grazie (1463) contains Leonardo da Vinci's painting *The Last Supper*. There are many other old churches, museums, picture galleries, hospitals, academy, library, observatory, monuments, scientific, musical, artistic, educational, and philanthropic institutions. The celebrated Scala Theatre (1778) seats 3,600 spectators.

Prominent among the many fine palaces is the Palazzo della Ragione in the centre of the medieval city, built of brick, 1223-38. Near it is the beautiful Loggia degli Osii, 1316, in black and white marble. Milan is rich in works of art. Brera palace, 1651, houses one of the finest collections of paintings in Italy; its library contains 300,000 volumes and about 60,000 coins. The castle contains an archaeological collection. The city is a great industrial centre. Pop. 961,979.

DUCHY OF MILAN. The title of duke of Milan was first granted by the emperor Wenceslaus to Gian Galeazzo Visconti (q.v.) in 1385. In 1450 the duchy was seized by Francesco Sforza, and his family kept it until 1535. It was a Spanish possession from then until 1714, when it was given to Austria. In 1859 it was united with the new kingdom of Italy.

MILDENHALL. Market town of Suffolk. It stands on the Lark, 12 m. from Bury St. Edmunds and 76 m. from London, with a station on the L.N.E. Rly. The chief building is S. Andrew's Church, mainly Perpendicular. There is a market cross of the 15th and a manor house of the 17th cent. It is an agricultural centre. Market day, Fri. Pop. 3,370



Midlothian. Map of the Scottish county south of the Firth. See page 953

MILDEW. Popular term loosely applied to such diverse fungi as moulds, rusts, cluster-cups, and powdery mildews, but properly restricted to the last named. These are external blights of the order Erysiphaceae, whose mycelial threads form a cobweb-like patch on the surface of leaves and shoots, whilst their suckers attack the superficial cells. The mealy appearance of the white patches on the leaves and stems of the rose is due to the presence of multitudes of microscopic summer spores. In the autumn the same patches will be found to be studded by large black dots which remain until the spring, when the integument breaks up and releases the contained spores. See Fungus; Rust.



Roman milestone

MILE. Measure of distance. As first used by the Romans it was approximately 1,614 yards. The British statute mile is 1,760 yards, and was legalised in 1593. The length varies considerably in different countries. The old Scottish mile was 1,984 yards; the Irish 2,240 yards; the old London mile 1,660 yards, etc. The old English mile consisted of ten furlongs instead of eight, and a mile, equalling a little over $1\frac{1}{2}$ present-day miles, was used till the 16th century. The geographical mile, or nautical mile, is 2,026 $\frac{2}{3}$ yards.



Milestone, Clapham Common, London

MILESTONE. Stone set up to mark distances along roads. Inscribed pillars erected at equal distance of 1,000 paces—5,000 Roman ft., equivalent to 4,880 English ft. or 1,617 yds.—and marking the distance from the gate at which the road emerged from Rome, were a regular feature of the military roads which were constructed by the Romans.

MILE END. District of E. London. Once a hamlet of Stepney parish, it now forms the central and N.E. parts of Stepney bor. Through it runs the Mile End Road, probably the broadest thoroughfare in London, connecting Whitechapel Road and Bow Road. Part of the district between Commercial Road East and Mile End Road is known as Mile End Old Town. Notable buildings include Trinity Hospital, the People's Palace and the East London College. See Stepney.

MILES. EUSTACE HAMILTON (b. 1868). British athlete and food reformer. Born at Hampstead, Sept. 22, 1868, in America in 1900 he won the amateur championships at tennis, racquets, and squash-tennis. He won the English Amateur Racquets Championship in 1902 (singles and doubles), 1904-6 (doubles), was amateur tennis champion 1898-1903, 1905-6, and 1909-10, and won the gold prize 1897-99, 1901-6, and 1908-12. He was amateur champion of the world at racquets, 1902, and at tennis 1898-1903 and 1905. Eustace Miles wrote many works on sport, history, food reform, etc., and opened a restaurant in London.

MILETUS. Ancient city of Asia Minor. Standing on the Gulf of Latmos, near the mouth of the Maeander, it was the chief town of the Ionian colonies of Greece. A great commercial city, it was famous for its woollen goods, traded with the whole Mediterranean coast, and established many colonies on the Propontis and Euxine, as well as Naukratis, in Egypt. Taken by Croesus, and in 557 B.C. by the Persians, it headed the great Ionian

revolt against Persia, but was destroyed on its suppression in 494 B.C. Taken by Alexander, it passed to the kingdom of Pergamum and finally to Rome. The birthplace of Thales and other Greek writers, it is poorly represented by the modern Palatia.

MILFORD or MILFORD HAVEN. Seaport and urban dist. of Pembrokeshire. It stands on the N. side of Milford Haven, 9 m. from Haverfordwest, and has a station on the G.W. Ry. Milford owes its origin to R. F. Greville, who, in 1790, planned a port here as a centre for the trade with Ireland. Soon afterwards the government established a dockyard here, but in 1814 this was transferred to a spot on the S. side of the haven, which was named Pembroke Dock. It has good dock accommodation, and from here vessels go to Ireland and elsewhere. Pop. 8,000.

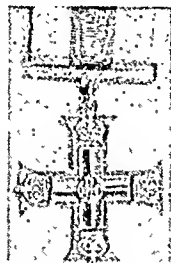
MILFORD HAVEN. Opening of the Atlantic Ocean. On the coast of Pembrokeshire, it is regarded as the finest natural harbour in England and Wales. It extends inland for 17 m., being from one to two miles broad. Milford is on the N. side, and on an inlet on the S. is Pembroke Dock.

MILFORD HAVEN, MARQUESS OF. Title granted to Louis Alexander, prince of Battenberg, who adopted the surname of Mountbatten, in 1917. Son of Prince Alexander of Hesse, he was born May 24, 1854. Naturalised as a British subject, he entered the navy in 1868. He was commander-in-chief of the Atlantic Fleet, 1908-10; second sea lord, 1911-12; and first lord, 1912-14. He died Sept. 11, 1921, and was succeeded by his eldest son, George Louis (b. 1892) who till then was known as the Earl of Medina. See Battenberg.



1st Marquess of Milford Haven
Russell

MILITARY CROSS. British military decoration. Instituted in 1915 to reward conspicuous service of captains, commissioned officers of a lower grade, warrant officers, and Indian and colonial military forces, it was awarded as from Aug. 1, 1913, for "services in action" only. The badge is a silver cross, bearing the imperial crown on each arm with the letters G.R.I. in the centre. The ribbon of the decoration, white, purple, and white, is worn on the left breast immediately following the V.C. before decorations and medals, but after all orders. See Medal.



Military Cross and ribbon

MILITARY KNIGHTS OF WINDSOR. Body of retired military officers forming part of the Order of the Garter. The number has varied, but in 1919 it was decided to fix it at 13. The knights, who are appointed by the sovereign, have apartments in the precincts of Windsor Castle and receive a small stipend. They are under a governor who holds the rank of major-general. They are the oldest military brotherhood in existence, and the only military body in England entitled to wear the national badge of St. George.

MILITARY MEDAL. British military decoration. Instituted in 1916, it is conferred on non-commissioned officers and men and women "for individual or associated acts of bravery on the recommendation of a commander-in-chief on the field." During the Great War a number of nurses were awarded the military medal for conspicuous devotion to duty during German air raids. The ribbon is dark blue with three white and two crimson stripes. See Medal.

MILITIA. Bodies of civilians trained and occasionally exercised for home defence alone. At the end of the 19th century the militia of the United Kingdom resembled the volunteers of Great Britain in being civilians who of their own free will joined a training corps which should be available for defence against an invader, but could not be sent overseas. Recruits were trained continuously for three months and afterwards annually for one month. In 1908, when the territorial force was created, this militia disappeared. The Channel Islands, however, Malta, and Bermuda retained this title for their defence forces. Canada describes her army as militia, and the war minister is called the minister of militia and defence, and is assisted by a militia council. See Army.

MILK. Liquid secreted in the udder of the female animal. The milk of the cow plays a very important part in human life, especially as it is the source of butter and cheese. It is a natural emulsion, consisting of minute fat globules suspended in liquid. The average percentage composition of whole cow's milk is as follows: water, 87.10; albuminoids (casein, albumin), 3.50; milk-sugar (lactose), 4.75; butter fat, 3.90; ash, 0.75. In skim milk 90.0 is water, and in whey 93.4 p.c. Separated milk resembles skim milk, except that practically all the fat has been removed.

Milk is a particularly good medium for the growth of all sorts of germs (bacteria), not only those which are essential to good butter and cheese making, but also some which are inimical to these, and others again that transmit disease, such as cholera, typhoid fever, and tuberculosis. All germs can be destroyed by exposing the milk to a high enough temperature to cause sterilisation, but a better plan is pasteurisation, by which disease germs are destroyed and those which interfere with butter or cheese making are kept in check. Condensed milk is milk from which most of the water has been removed by evaporation at a comparatively low temperature and in a partial vacuum. See Dairy; Lactometer.

MILKWORT (Polygala vulgaris) or ROGATION FLOWER. Perennial herb of the order Polygalaceae. A native of Europe (including Britain), N. Asia, and N. Africa, it has short, wiry stems and leathery, oblong leaves. Its flowers are white, pink, blue, or purple. It grows among grass in meadows and on heaths, and cows which ate it were formerly supposed to yield more milk.



Milkwort. Flowering stems of the meadow herb

MILKY WAY. In astronomy, the luminous band which appears to stretch across the sky at night (see illus. p. 447). To the naked eye appearing a vast zone-shaped nebula, it appears through a telescope to consist of innumerable stars.



Military Medal and ribbon

For over two-thirds of its circuit in the skies it preserves an appearance of unity, but near Alpha Centauri it is broken by a great fissure into two branches, one faint and the other bright, which rejoin in the neighbourhood of Eta Cygni. The milky way is not a uniform starry stream. The bright spaces are commonly surrounded and set off by dark winding channels.

It has been calculated that the light from the Milky Way in most of its sections takes 3,200 years to reach the earth. See *Constellation*; Stars.

MILL, JAMES (1773-1836) British philosopher. Born near Montrose, April 6, 1773, he came to London, and embarked upon a literary career. His *History of India*, published 1817-18, led to his appointment as assistant examiner, and afterwards head of the examiners' office, of the E. India Company, a position he held till his death, on June 23, 1836.

In his *Analysis of the Phenomena of the Human Mind* he reduces all psychological reality to one fact—sensation, and all its laws to one—the law of inseparable association, the factors of which are liveliness of impression, repetition, and interest. Mill is regarded as the founder of philosophical radicalism.

MILL, JOHN STUART (1806-73) British philosopher and economist. The son of James Mill, he was born in London, May 20, 1806.



John Stuart Mill,
British philosopher

From 1820-58 he was employed in the East India Office, and retired on a pension when the company came to an end. From 1865-68 he was M.P. for Westminster. He died at Avignon, May 8, 1873.

From an early age Mill was engaged in literary work, writing books and contributing to reviews. His *System of Logic*, 1843, is an elaborate exposition of the theory and methods of induction. His metaphysical standpoint is set forth in his *Examination of Sir Walter Hamilton's Philosophy*, 1865. In ethics he is an altruistic utilitarian. His *Principles of Political Economy*, 1848, the object of which was to systematise and complete the theories of Adam Smith and Ricardo, is still considered indispensable for the study of the subject. In politics he belonged to the advanced radical party. His essay *On Liberty*, 1859, represents his mature political views. He was a warm defender of the rights of the working classes and an advocate of women's suffrage. Consult *Lives*, A. Bain, 1882; W. L. Courtney, 1889.

MILLAIS, SIR JOHN EVERETT (1829-96) British painter. Born at Southampton, June 8, 1829, he came of a Jersey family. In 1838 he was sent to Sass's drawing school in Bloomsbury, and later to the R.A. schools. Shortly after 1848, with Holman Hunt and Rossetti, he started the Pre-Raphaelite Brotherhood.

His first important pictures were the *Banquet Scene* from Keats' *Isabella*, or the *Pot of Basil*, exhibited in 1849, followed in 1850 by *Christ in the House of His Parents*, better known as *The Carpenter's Shop*. Perhaps his two best pictures exhibited under Pre-Raphaelite influence were *Autumn Leaves*, 1856, and *The Blind Girl*, one of his greatest works. *Sir Isumbras at the Ford*, exhibited in 1857, marked a departure in style which evoked a protest from Ruskin. Its successors, *The Vale of Rest* and *Apple Blossoms*, clearly showed the emancipation of Millais from his early mannerisms. In the sixties he was largely concerned with book illustration. Among his finest portraits must be mentioned those of the Marquess of Hartington, Lord Tennyson, Cardinal Newman, Sir James Paget, Gladstone, Du Maurier, and Mrs. Jopling.

Millais was created a baronet in 1885, and succeeded Lord Leighton as president of the R.A. in Jan., 1896. He died Aug. 13, 1896. See illus. pp. 123, 362



Sir John Millais,
British painter
Self-portrait, Uffizi
Gallery, Florence

MILLARD, EVELYN (b. 1873) British actress. Born in Kensington, Sept. 18, 1873, the daughter of John Millard, who taught elocution at the Royal Academy and the Royal College of Music, she made her first appearance at The Haymarket in 1891. After studying with Sarah Thorne she played important rôles under the management of George Alexander, Beerholm Tree, and Lewis Waller. She was in management on her own account in 1903-10.

MILLBANK. District of S.W. London, in the city of Westminster. While the name applies strictly to the thoroughfare on the left bank of the Thames between Great College Street and Grosvenor Road, it is also given to much of the area between Great College Street and Vauxhall Bridge Road. On the river bank, originally built to act as one side of the mill-race serving the mill of the abbot of Westminster, are the Victoria Tower Gardens. Among important buildings are the Tate Gallery and the Royal Army Medical College (q.v.). In 1928 a large building for Imperial Chemical Industries was opened here. In Jan., 1928, the Thames burst its banks here, causing damage, since when the embankment has been strengthened.

Millbank Penitentiary, built in 1812-22, was modelled by Sir Robert Smirke on Jeremy Bentham's Panopticon. It resembled a wheel. It was pulled down in 1903.

MILLER, HUGH (1802-56) Scottish geologist and writer. Born at Cromarty, Oct. 10, 1802, he was apprenticed as a mason and quarryman. In 1834 he became accountant in a bank at Cromarty and next year published *Scenes and Legends of the North of Scotland*. In 1839 a letter published in Edinburgh on the Auchtermarder case brought him into prominence with the Evangelical party in Scotland, who appointed him editor of their journal, *The Witness*, first issued on Jan. 15, 1840. Owing to temporary insanity due to overwork, Miller shot himself, Dec. 23, 1856.

In addition to being one of the recognized leaders of the Free Church of Scotland, founded 1843, Miller was widely known as an advocate of education, franchise, and other reforms. But his reputation rests on his popular works on geology, *The Old Red Sandstone*, 1841, and *Footprints of the Creator*, 1847.

MILLERAND, ALEXANDRE (b. 1859) French statesman. Born in Paris, Feb. 10, 1859, he studied law, and was admitted to the bar in 1881. Elected deputy for Paris in Dec., 1885, he quickly acquired a leading position in the Radical-Socialist party. He became parliamentary leader of the Socialist party and editor of *La Petite République*, the party organ, vacating that position in 1896 to become managing director of *La Lanterne*. As minister of public works, 1909-10, he organized the state railway system. Minister of war, 1912-13, and again 1914-15, on the conclusion of the armistice with Germany in 1918 he was appointed commissioner-general for Alsace-Lorraine.

Millerand succeeded Clemenceau as premier in Jan., 1920, after Deschanel's election to the presidency of the republic, also undertaking the office of foreign secretary. He was called upon to act in very critical circumstances, as, for example, the German reparations



Hugh Miller,
Scottish geologist



Alex. Millerand,
French statesman
Henri Manuel

question, the future of Central Europe, and the settlement of internal affairs in France. In Sept. of the same year he was elected president, but he resigned in 1924 as the result of an adverse vote in the Chamber. His publications include *Socialism, réformiste en France*, 1903; and *La Guerre libératrice*, 1918.

MILLET. General term for a number of grasses grown either for fodder or for their seeds (grain), which constitute important sources of food. Among the latter are kurrakan, or ragi, extensively grown in India, Ceylon, and Africa. The common millet is *P. miliaceum*; the little millet is *P. miliare*; the Italian millet, *Setaria italica*, has been in general cultivation in Asia from very remote times. Indian millet, Kaffir-, or guinea-corn, is *Sorghum vulgare*, whose grain is known as durra. The fodder millets are Guinea-grass, Mauritius-grass, barnyard-grass.

MILLET, JEAN FRANÇOIS (1814-75) French painter. Born at Gruchy, near Cherbourg, Oct. 4, 1814, the son of Normandy peasants.

He went to Paris with a scholarship, 1836, and entered Delaroche's studio, where Diaz and Rousseau were also students. He commenced by painting elegant pictures and nudes, but in 1849 he settled at Barbizon as a painter of pictures of peasant life, for the naturalistic but dignified and sympathetic treatment of which he has few equals. The *Sowers* was exhibited in 1851; *The Gleaners*, 1857; *The Angelus*, and *Death and the Woodcutter*, 1859; *The Man with the Hoe*, 1863. He died Jan. 20, 1875.

MILL HILL. District of Greater London. Between Edgware and Totteridge, and once a hamlet of Hendon, it is $8\frac{1}{2}$ m. from London by the L.N.E. Rly. and 9 m. by the L.M.S. Rly.

Mill Hill School is a public school founded in 1807 as a school for the sons of Nonconformists, but reconstructed on broader lines in 1869. It has accommodation for about 500 boys. The school is divided into upper, middle, and lower. The war memorial is a fine Gate of Honour.

MILLING. Process of grinding grain, especially wheat, into flour, carried out almost entirely by automatic systems based upon the employment of chilled-iron rolls. The grain is first cleaned and prepared in the screen house, where numerous appliances secure the separation of stones and other impurities, the removal of foreign seeds such as barley and cockle, and the scouring, washing, and conditioning of the grain. After the cleaned grain reaches the blending bins the operation of milling begins. Rolling mills are of two kinds. Break rolls extract the endosperm or floury parts from the bran; reduction rolls grind the floury parts by successive stages until they pass through the flour silk in the final form. See *Flour*; *Wheat*.

MILLPEDE. Order of arthropods, which with the centipedes form the zoological class Myriapoda (many-footed). They have long, rounded, and segmented bodies, with a hard chitinous covering, and usually two pairs of legs on each segment. They differ from the centipedes in being vegetarian, and they lack the poison claws. Great Britain has several species, which may be found lurking under stones in the daytime and rolling themselves into a coil when disturbed. They do little harm to crops except when they become numerous, when they are best checked by dressings of lime and soot. See *Myriapoda*.

MILLOM. Urban dist. and market town of Cumberland. It stands on the W. side of the estuary of the Duddon, 9 m. from Barrow-in-Furness, on the L.M.S. Rly. The church of Holy Trinity is partly Norman. Milloom grew



J. F. Millet,
French painter
Self-portrait in
crayon, 1846-47

up around a castle built about 1100; this was long the residence of the Huddleston family; it is now a ruin. Millom owes its modern growth to the development of the Furness coal and iron field. Iron ore is mined, and there are large furnaces and ironworks. Market day, Sat. Pop. 8,709.

MILLPORT. Burgh and watering place of Buteshire, Scotland. It stands on the S. side of the island of Great Cumbrae. The chief building is the cathedral. Pop. 5,834

MILLSTONE. Wheel or circular mass of rock used for grinding grain. The best rocks for the purpose are the burr stones of France, being hard and porous. They are found in the Tertiary of the Paris basin, and large millstones are usually huilt up. The German millstones are a basaltic lava found near Cologne. Millstones are being superseded by steel rollers in the manufacture of flour.

MILLSTONE GRIT. In geology, name given to a hard siliceous conglomerate rock. The rocks rest upon the carboniferous limestones and are therefore usually associated with coal measures. Millstone grit is valuable for building purposes and for grindstones.

MILLWALL. District of London. It is in the Isle of Dogs, forms the S.W. part of the met. hor. of Poplar, and has Limehouse Reach on the W., Cubitt Town E., the West India Docks N., and Millwall Dock S. The last named has an area of 231 acres, and is the chief centre of the grain trade in London. The name is derived from seven windmills, which stood on the wall huilt here to keep the Thames from overflowing at high tide.

MILMAN, HENRY HART (1791-1868). British historian and divine. Born in London, Nov. 10, 1791, the son of the court physician, Sir Francis Milman, Bart., he was ordained in 1816, holding for a short time a living at Reading. From 1821-30 he was professor of poetry at Oxford. In 1835 he was appointed canon of Westminster and rector of S. Margaret's, and in 1849 he became dean of S. Paul's, a position which he held until his death, Sept. 24, 1868.



H. H. Milman,
British historian

As an historian Milman wrote a History of the Jews, 1829, and a History of Christianity under the Empire, 1840, but his great work was his History of Latin Christianity, 1854-56. He edited what was long the standard edition of the Decline and Fall, and wrote a Life of Gibbon, 1839.

MILNE, ALAN ALEXANDER (b. 1882). British humorist. Born Jan. 18, 1882, Milne joined the staff of Punch, being assistant editor, 1906-14. His verses in When We Were Very Young and other volumes made him and his son, Christopher Robin, very popular with children. He published some volumes of sketches, and several of his comedies have been very successful on the stage, notably Mr. Pim Passes By, The Great Broxopp, The Dover Road, and The Truth about Blayds. In 1927 he produced The Ivory Door, in 1928 The Fourth Wall, and in 1930 Michael and Mary.

MILNE, SIR ARCHIBALD BERKELEY (b. 1855). British sailor. Born June 2, 1855, son of Admiral of the Fleet Sir Alexander Milne,

Bart., he entered the navy in 1869. He was attached to the naval brigade in the Zulu War, 1878-79. Second in command, Atlantic Fleet, 1905-6, and commander of the 2nd division, Home Fleet, 1908-10, he was commander-in-chief in the Mediterranean, June, 1912-Aug., 1914, when he became commander-in-chief at the Nore. His book, The Flight of the Goeben and Breslau, 1921, was a defence against criticism levelled at him in 1914 in connexion with the escape of these ships.

MILNE, SIR GEORGE FRANCIS (h. 1866). British soldier. Born Nov. 5, 1866, he entered the Royal Artillery in 1885, and first saw



Millstone used by women in Palestine for grinding corn by hand. This form is of great antiquity

active service in the Sudan in 1898. In 1913 he was placed in charge of the artillery of the 4th division, and he went to France in Aug., 1914. In Jan., 1915, he commanded an infantry brigade and in February a division. For some months he was chief staff officer to the Second Army, but in May, 1916, took command of the British contingent in Salonica. Under the supreme direction of the French commander-in-chief, Milne was responsible for the defensive operations against the Bulgarians in 1917, and in 1918 for the offensive ones that ended with Bulgaria's capitulation. He then commanded the army of the Black Sea, retiring in Sept., 1920. From 1926 to 1929 he was chief of the imperial general staff. Milne was knighted in 1918, and in 1920 became a full general. In 1928 he was made a field marshal.

MILNER, ALFRED MILNER, 1ST VISCOUNT (1854-1925). British administrator and statesman. Born of English parents at Bonn,



Lord Milner,
British statesman
Russell

March 23, 1854, he became a barrister, but for a time was on the staff of The Pall Mall Gazette. His public career began with the post of private secretary to G. J. Goschen. This led to his appointment as under-secretary for finance in Egypt, 1889-92, and chairman of the board of inland revenue, 1892-97. He was created K.C.B. in 1895, and in 1897 became governor of the Cape of Good Hope. He remained at his post during the South African War, took part in the peace negotiations, and was governor of the Transvaal and Orange River Colonies until 1905.

Milner, who had been made a baron in 1901 and a viscount in 1902, remained in retirement for some years, but in 1916 his former opponent, Lloyd George, chose him as one of the members of the small War Cabinet. After the armistice Milner was appointed secretary for war. He was colonial secretary, 1919-21, when he headed a mission to Egypt. He died May 13, 1925. His writings include England in Egypt, 1892.

MILNGAVIE. Burgh of Dumbartonshire, Scotland. It stands on Allander Water, 6 m. N.N.W. of Glasgow on the L.N.E. Rly. The industries include calico printing and bleaching. Pop. 4,434. Pron. Millguy.

Milnrow. Urban dist. of Lancashire. It is 2 m. from Rochdale, on the L.M.S. Rly. There are coal mines near. Pop. 8,509

MILLO or **MELOS.** Island of Greece, in the Cyclades (q.v.). It is 14 m. long by 8 m. wide, having an area of 60 sq. m., and is of volcanic origin. A long inlet on the N.W. affords one of the best natural harbours in the Levant. Plaka is the capital. On the site of ancient Melos were found the statue of Poseidon, now in the Athens Museum, the Asclepius, in the British Museum, the Venus de Milo, in the Louvre, and other works of ancient art. Pop. 5,400. Pron. Meelo.



Sir G. F. Milne,
British soldier
Russell

MILLO. Famous athlete of ancient times, belonging to Crotona, S. Italy. He gained many victories at the Olympic and other games. In 511 B.C. he was general of the army which defeated the Sybarites. Pron. Mylo.

MILREIS or **MILREAS** (Port. milreis, a thousand reis). Obsolete Portuguese gold coin nominally worth 4s. 5d. It has been superseded by the esudo (q.v.). The Brazilian milreis is a silver coin which fluctuates in value.

MILTIADES. Athenian soldier. A son of Cimon (q.v.), he succeeded his brother Stesagoras as tyrant of the Thracian Chersonese. Miltiades subsequently incurred the hostility of Darius, who then made war on Greece. Miltiades sought refuge in Athens. He was chosen one of the ten generals, and under his charge the Greeks won the battle of Marathon, 490 B.C. Entrusted subsequently with a force of 70 ships to carry on the war against the Persians, Miltiades attacked the island of Paros. The enterprise failed. He was condemned to pay a fine, and, being unable to find the large sum required, he was thrown into prison, where he died. Pron. Mil-ti-adeez.

MILTON. Urban dist. of Kent, in full, Milton Regis. It stands on Milton creek, an opening of the Swale, 10 m. from Chatham, having with Sittingbourne a station on the Southern Rly. Paper is made, and the place is noted for oysters. Pop. 7,481.

There are several places of this name in Great Britain. One is part of Gravesend. Milton, on Christchurch Bay, 6 m. from Lymington, is a small watering place.

MILTON, JOHN (1608-74). English poet and prose-writer. He was born in Bread Street, Chapside, London, Dec. 9, 1608, the son of a scrivener. On leaving Christ's College, Cambridge, he retired to his father's country house at Horton, Buckinghamshire, where he spent six years, 1632-38, and wrote, among other things, the companion idylls, L'Allegro and Il Penseroso, 1633; the masque Comus, 1634; and Lycidas, 1637, an elegy on the death of his college friend, Edward King.

Of his prose works, Doctrine and Discipline of Divorce appeared in 1643-45; Tractate on Education in 1644, the same year as his vindication of the liberty of the press, Areopagitica. Immediately after the execution of Charles I he published his Tenure of Kings and Magistrates, and was appointed Latin secretary to the committee for foreign affairs. His Defensio pro Populo Anglicano appeared in 1651. In 1654 he became blind.

In 1643 Milton married Mary Powell, the daughter of an Oxfordshire royalist, but the union was unhappy. His wife died in 1653, and in 1656 he married Catherine Woodcock, who



Milreis. Obverse and reverse of obsolete Portuguese gold coin; $\frac{1}{2}$ actual size. See above

died in 1658. Two years later he was involved in the disaster of the Restoration, which drove him into obscurity and left him an impoverished man. He now turned to the poetic work which he had planned many years before. *Paradise Lost* was published in 1667; *Paradise Regained* and *Samson Agonistes* in 1671. In 1663 he took as his third wife Elizabeth Minshull. Milton died in his house in Artillery Walk, Bunhill Fields, London, Nov 8, 1674, and was buried in S. Giles's, Cripplegate. See Chalfont St. Giles; consult also *Life*, 6 vols., D. Masson, 1859-80.



John Milton, British poet and prose-writer
From the engraving by W. Faithorne, Nat. Port. Gallery

buried in S. Giles's, Cripplegate. See Chalfont St. Giles; consult also *Life*, 6 vols., D. Masson, 1859-80.

MILTON ABBEY. Name of a mansion and a church in Dorsetshire. About 7 m. from Blandford, the mansion occupies the site of a 10th century Benedictine abbey and of the ancient village of Milton or Middleton. In 1752 the property was bought by the earl of Dorchester, who destroyed the town, transferring the inhabitants to the present Milton Abbas, pulled down the monastic buildings, except the abbey church and the monks' refectory, and built the existing mansion. The abbey church is a superb structure, containing a 15th century altar screen and some ancient paintings and fine sculptures.

MILWAUKEE. City and port of entry of Wisconsin, U.S.A. The largest city of the state, it stands on the W. shore of Lake Michigan, 85 m. N. of Chicago, and is served by the Chicago and North-Western and other rlys. The river Milwaukee and its tributaries the Menominee and Kinnickinnic, which intersect the city, are navigable by large ships. There is a fine harbour. An important wholesale and distributing centre, Milwaukee trades largely in coal, lumber, flour, grain, and manufactured products. Its manufactures include iron, steel, and leather products, boots and shoes, machine-shop products, electrical machinery and appliances, and hosiery. Formerly it was noted for beer. Pop. 509,192.

MIMOSA. Large genus of herbs, shrubs, and trees of the natural order Leguminosae, chiefly natives of America. The leaves are twice divided into small leaflets, and are often sensitive, folding up at a touch, or under atmospheric changes. The small yellow flowers are closely packed in round heads or cylindrical spikes. The mimosas are confused with the Australian wattles (*Acacia*), but no species of mimosa is a native of Australia.



Mimosa. Flowers and leaves of the American shrub

MIN. Egyptian deity, eventually absorbed by Ammon. Perhaps introduced from Punt, he was the god of fields and the desert routes, especially worshipped at Coptos and at Akhmim, whose Greek name Panopolis is due to his identification with Pan. Petrie's Coptos excavations in 1894 revealed three limestone colossi of the god.

MINARET. Term used for a slender tower of moderate height, with one or more balconies, from which Mahomedan priests summon the people to prayer at certain hours.

MINCH. Name for parts of the Channel E. of the Outer Hebrides. The Minch, in the N., varies from 20 to 45 m. in width; the Little Minch, W. of Skye, is from 15 to 20 m. wide.

MINCHINHAMPTON. Town of Gloucestershire. It is 4 m. from Stroud, near the Thames and Severn canal. The chief industry is the making of woollens, and there is a golf course. From Minchinhampton Common, 660 ft. high, a fine view of the Cotswolds is obtained. Pop. 3,200.

MINCING LANE. London thoroughfare. Between Rood Lane and Mark Lane, it connects Great Tower Street with Fenchurch Street, E.C., and is a centre of the tea and rubber trades. Here is the hall of the Clothworkers' Company (q.v.).

MINCIO. River of N. Italy. Issuing from the S. end of Lake Garda, it joins the Po 10 m. S.E. of Mantua, after a course of 116 m. Near its banks several battles were fought: Solferino, 1859; and Custoza, 1848 and 1866. Pron. Meenecho.

MIND. In general, the opposite of matter, more particularly, the thinking part of us, the cognitive faculty which is mainly concerned with intellectual processes. According to the modern definition, mind is a collective term, denoting the sum-total of all our mental processes, which are themselves only different functions of the nervous system, especially of the brain.

In regard to the relation between mind and body (matter) there are three principal hypotheses. Dualism regards the mind as a substance existing side by side with, and independently of, the body. Materialism regards mental phenomena as mere bodily functions, like the digestion of food. Idealism sees in bodies and external phenomena only the manifestations of intellectual beings; mind is the reality, all else is derived from it, or is mere appearance. See Metaphysics.

MINDEN. City of Westphalia, Germany. It stands on the Weser, 44 m. from Hanover. The cathedral was begun in the 11th century. Other old buildings are S. Martin's church and the town hall. Made the seat of a bishop in the 8th century, Minden was a prosperous town in the Middle Ages, and was a member of the Hanseatic League. Pop. 27,139.

The battle of Minden was fought, Aug. 1, 1759, between a British and Hanoverian allied army, commanded by Ferdinand of Brunswick, and the French. The latter, commanded by Contades, were defeated.

MINE. Charge of explosive in a case, used in naval and in land warfare. In the Great War mines were used on an enormous scale by both sides. The naval mines were metal cases containing from 50 to 450 lb. of high explosive, anchored on the bottom and moored to the anchor by a cable so adjusted that the mine automatically "took up" the intended depth of from 20 to 30 ft. below the surface. The mines in a field were laid at distances of about 40 or 50 ft. apart. Detonation of the mine was caused by the ship's hull striking a horn in the mine. Certain types were fitted with "antennae," or thin cables of copper wire reaching to within a few feet of the surface, contact with which, even when the mine was laid very deep, produced instant explosion.

Land mines were employed to some extent in the Great War, particularly for defence against tanks. They consisted of heavy charges of high explosives buried in the ground, and so arranged

that the passage of a weight over them caused an explosion.

A mine field is an area of navigable water strewn with mines to prevent the passage of vessels not provided with a plan of the safe channels. Mine fields may be laid to operate against surface vessels or against submarines submerged. Submarines are largely employed for mine-laying, a special type of craft having been evolved for the purpose. See Mining.

MINEHEAD. Urban dist. and market town of Somerset. It stands on the S. side of the Bristol Channel, 25 m. from Taunton, on the G.W. Rly. S. Michael's church, a 14th century building, has a fine rood loft. The older part of the town is built on the side of North Hill, a bold eminence which protects the lower and newer part. Minehead is a hunting centre and a popular watering place, from which Exmoor, Lynton, and other beauty spots in Somerset and Devon can be reached. Market day, third Mon. Pop. 6,013.



Mineralogy. 1. Marcasite, showing internal radial structure. 2. Hopper-shaped crystals of salt. 3. Haematite, with nodular exterior and crystalline internal structure. 4. Dendritic pyrolusite. 5. Olivine crystal. 6. Pyrite. 7. Octahedral crystals of Magnetite in Schist. 8. Crystals of Fluorspar. 9. Quartz crystals

From specimens in S. Kensington Museum and in the Museum of Practical Geology

MINERALOGY. The science of minerals. A mineral may be strictly defined as an inorganic substance with a constant chemical composition, or a composition that varies only by the partial substitution of one element for another under recognized chemical laws. The phenomenon of crystallisation distinguishes a mineral from a rock, and excludes such substances as oils, coal, and slate. Natural alloys are regarded as minerals, as also are the constituents of a mineral occurring in their proper proportions, but in an uncrystalline or amorphous state.

The proper classification of minerals dates only from the last half of the 18th century. The most important character is chemical composition, and other characters depend very largely upon this. The same chemical molecules may group themselves variously, and may produce a series of crystals not related to one another under the fundamental law of crystallography. Commonly this difference of structure is accompanied by a difference in specific gravity and in hardness. Measurement of the angles of crystals (gonimetry) has shown that differences of chemical



Minaret or tower of Mahomedan mosque

constitution involve differences of crystalline form. Many crystalline minerals possess regular planes along which they fracture, a property styled cleavage. Such planes are related to the crystalline structure.

The hardness of a mineral is roughly stated by comparison with that of certain well-known minerals, e.g. the following, arranged in ascending order: 1, talc; 2, gypsum; 3, calcite; 4, fluor-spar; 5, apatite; 6, orthoclase feldspar; 7, quartz; 8, topaz; 9, corundum; 10, diamond. The optical characters of minerals are intimately related to the symmetry of their crystalline structure. This symmetry is sufficient in the cubic system to render minerals of that system optically isotropic, that is, equally affecting light rays whatever their direction in the crystal. Such minerals possess single refraction. The transparency of large masses of calcite (q.v.) long ago called attention to the double refraction of light by minerals of other systems.

The modes of occurrence of minerals are often suggestive of their modes of origin. A mineral body is often a true replacement of the rock in which it occurs, and its concentration has been accompanied by an outward diffusion of the substance originally on the spot. Certain types of minerals occur together with great frequency. Though the number of names given to minerals is in the neighbourhood of 5,000, due to the erroneous naming of varieties, the number of minerals known is about a thousand. See Crystal; Geology; Rocks; and under names of specific minerals.



Minerva. Antique statue in the Vatican Palace, Rome

MINERALOGICAL SOCIETY. Society established for the study of mineralogy and kindred subjects. Founded in 1876, it was later united with the Crystallogical Society.

MINERVA. In classical mythology, the Italian goddess whom the Romans identified with the Greek Athena. One of the chief Roman deities, she was worshipped in the Capitoline temple at Rome. She was the goddess of wisdom, and the patroness of all the arts and

crafts. After her identification with Athena she became the goddess of war. A festival was held in her honour at Rome from the 19th to the 23rd day of March. See Athena.

MINIATURE (Lat. *minium*). A painting or portrait small enough to be carried on the person or held in the hand. The name is derived from *minium*, the red lead used in illuminating the capitals in old MSS. Early miniatures were painted on vellum, parchment, or chicken skin, stretched on cardboard, then on cardhoard and, in the 17th century, on copper or silver, slate, lapis lazuli, and marble.

Some of the finest miniatures were executed by Samuel Cooper (1609-72). Walpole's phrase that a miniature by Cooper is like a life-sized Van Dyck seen through the small end of a telescope is by no means lacking in truth. Richard Cosway (1740-1821) was another great artist. One of the greatest miniature painters in France, Hay (1739-93), was a Swede. French miniature art attained its

zenith with Isabeau (1767-1855) and Augustin (1759-1832). The art has revived in recent years, notably in the work of J. W. Von Rehling Qvistgaard, a Dane. The leader in England is Allyn Williams.

Minim. Small unit of liquid measurement in apothecaries' or wine measure. It is equal to one drop, and is denoted by the symbol ℥ .

MINIM. Musical note consisting of an open oval head with a stem, P . Its time-value is one half of a semibreve (C) or two crotchets (Q).

MINING. In its widest sense, the art of prospecting for and extracting mineral substances of intrinsic value (iron ore, coal, gold, silver, copper, tin, precious stones) from the earth and rendering them marketable.

Until about 1870 mining was practically confined to rich deposits, or such as could be worked on a small scale with a minimum of expense. Modern mining includes the working of low-grade or poorer deposits, utilising mechanical means to the utmost in order to reduce working costs. It has to consider the problems of shaft sinking, the methods of laying out a mine to working advantage, transportation, ventilation and drainage, all questions relating to the health and safety of miners, lighting, the prevention of explosions, and preparing the minerals for the market.

The methods adopted depend upon the nature of the deposits it is intended to work. Where deposits occur either outcropping to the day, or under a relatively shallow cover, mechanical excavators and steam navvies are used. Auriferous alluvials, tin-bearing gravels, etc., are got by disintegrating and washing down the deposits by directing powerful jets of water against the face of the rock, or by dredging. Where large quantities of mineral have to be carried over quite considerable distances mechanical haulage is used. In mines working hedged deposits, like coal and ironstone mines, the methods usually adopted are those of rope haulage. Other methods of underground transport are electric locomotives, compressed air locomotives, and so-called fireless locomotives, in which steam under reduced pressure is employed. The work of bringing the mineral to the surface is performed by winding engines, which are often electrically driven. See Coal.

The Institution of Mining and Metallurgy was founded in 1892. It devotes attention to both practical and research work. Its offices are at 225, City Road, London, E.C.1.

SCHOOL OF MINES. The school of mines founded in London in 1851 now forms part of the Imperial College of Science and Technology at S. Kensington. There are famous schools of mining at Camborne, Johannes-

burg, and Chemnitz, while it is a subject of study at Leeds, Durham, and other universities, colleges, and technical institutes.

MINION. In printing, a type one size larger than nonpareil and one size smaller than brevier. It is also known as 7-point. About 10 lines make an inch in depth.

This line is set in Minion.

MINIUM or **RED LEAD.** Name given to a scarlet crystalline compound of lead. It is chiefly lead orthoplumbate, $2\text{PbO} \cdot \text{PbO}_2$, and is made by heating massicot, or native lead monoxide, in a reverberatory furnace. Minium when itself heated changes to violet and then black, but becomes scarlet again on cooling. Ignited, it becomes lead monoxide. It is used in the preparation of flint glass and as a paint. See Lead.

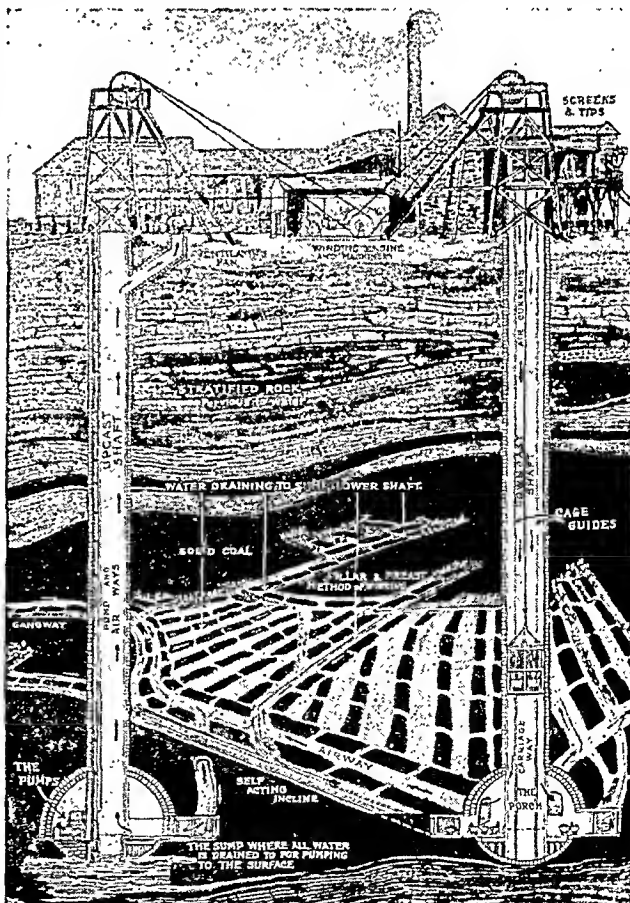
MINK. Name given to three closely related species of carnivorous mammals of the weasel (*Mustela*) tribe. They have soft glossy fur, a bushy tail, and a disagreeable odour. Their colour ranges from yellowish to chocolate brown, and the chin is white. The



Mink. Specimen of the European species, *Futorius lutreola*

fur is highly valued, especially of the Alaskan specimens, and incessant trapping has made the animals scarce.

MINNEAPOLIS. City of Minnesota, U.S.A., the co. seat of Hennepin co. On the Mississippi river, the city is in a lake district which attracts many visitors. Among its buildings are two cathedrals, the university



Mining. Pictorial diagram illustrating sectional view of the shafts of a coal mine, showing system of draining and pumping water, of ventilating the mine, and of working the tunnels

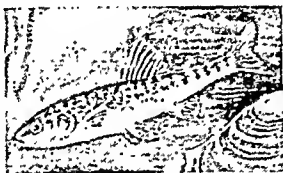
of Minnesota, and the Minneapolis School of Fine Arts. Minnebaba Park covers nearly 3,800 acres, and contains the falls familiarised by Longfellow's Hiawatha. Minneapolis is the largest flour milling centre in the world, and one of the foremost in the lumber industry. Machinery, foodstuffs, linseed oil and meal and clothing are also important manufactures while the volume of its wheat trade is unequalled. Power for its factories is provided by the Falls of St. Anthony. Pop. 400,000.

MINNESINGER (Ger. minne, love). Name given to a class of German lyric poets who flourished from about 1150 till about 1350. Like the Provençal troubadours (q.v.), mainly of knightly or noble birth, they formed a school of artificial and courtly lyric, but differed from the troubadours in their more reverent treatment of love. They composed the musical accompaniment to their songs.

MINNESOTA. Northern state of the U.S.A.. W of Lake Superior. It has about 10,000 lakes, including Red Lake (345 sq. m.) and Lake Itasca, from which the Mississippi river takes its rise. Besides the Mississippi, the chief rivers are the Minnesota, Red, and St. Croix, all utilised to supply water-power. The state university ranks amongst the highest in the U.S.A. The capital is St. Paul and the largest town Minneapolis. The mineral wealth is considerable, granite and limestone being worked, and there are enormous deposits of iron ore. The area of the state is 84,682 sq. m. Pop. 2,390,000.

The Minnesota river flows from Big Stone lake on the South Dakota border to the Mississippi at Minneapolis. Its length is 450 m.

MINNOW (*Leuciscus phoxinus*). Small fresh-water fish, common in European rivers. Belonging to the same genus as the roach and dace, it is distinguished from them by the broken line which runs along each side of the body. It is largely used as bait.



Minnow. Small fresh-water fish common in British rivers

Minoan. Alternative name for a pre-Hellenic civilization, also called Aegean or Mediterranean. See Aegean; Crete.

Minor. In law, a person under 21 years of age. In English law the term infant is used in this sense. See Infant.

MINOR (Lat. smaller). In music, a term applied to those intervals of the 2nd, 3rd, 6th, and 7th, which are less by a semitone than the corresponding major intervals.

MINORCA (Sp. Menorca). Second largest of the Balearic Isles. Cereals, wine, oil, oranges, lemons, figs, almonds, and flax are grown; iron, copper, lead, slate, marble, alabaster, etc., mined. A good road, built by the British, who held the island in 1708-56 and 1762-82, runs from Ciudadela to Port Mahon. The island is rich in stalactite caves, megalithic remains and ancient towers (talayotes). Its area is about 290 sq. m. Pop. 42,147.

MINORCA FOWL. This is a breed of domestic poultry supposed to have originated in Minorca. In reality they appear to be a red-faced variety of the white-faced Black Spanish breed. Though champion layers of large eggs, they cannot be prevailed upon to sit.

MINORITES. Name adopted by the early Franciscan friars as an indication of humility. The female branch, founded by S. Clare about 1212, took the name of Minoresses, but are now known as Poor Clares.

MINOS. In Greek legend, king and law-giver of Crete. He was the son of Zeus by

Europa, and husband of Pasiphaë, daughter of Helios, who brought forth the Minotaur. By some accounts represented as a monster of cruelty, he is by others described as an able monarch, who made Crete a great maritime power, cleared the seas of pirates, and by wise legislation promoted the welfare of his subjects. After death Minos was made one of the judges of the dead in Hades. Pron. Mynos.

MINOTAUR. In Greek mythology, a monster with the head of a bull and the body of a man. The offspring of Pasiphaë, wife of Minos, and a bull sent to Minos from Poseidon, it was kept in a labyrinth, and a yearly tribute of seven youths and seven maidens from Athens was given it to devour. It was slain by Theseus.

MINSK. Capital of White Russia (Byelorussia). It stands on the Svisloch, a tributary of the Beresina, 275 m. N.E. of Warsaw. Considerable trade is done in flax, hemp, corn, timber, and leather. The Soviet government founded a university here. Fighting took place here in the Great War. Pop. 118,000.

MINSTER OR **MINSTER-IN-SHEPPEY.** Village and pleasure resort of Kent. It is on the island of Sheppey, 3½ m. from Sheerness, with which it is connected by a light rly. S. Mary's Church, part of which is Saxon, is a fine building. Oysters are cultivated. Pop. 3,059.

MINSTER OR **MINSTER-IN-THAXET.** Village of Kent. It is 4 m. from Ramsgate, on the S.R. S. Mary's Church has beautiful Norman and Early English work. Pop. 2,915.

MINSTER LOVELL. Village of Oxfordshire, on the Windrush, between Witney and Akeman Street. The ruined moated manor house is said to have been built by William 11th Baron Lovel, whose descendant, Francis, a Yorkist, is said to have died of starvation in a secret chamber while hiding after the battle of Stoke in 1487. The 15th century Perpendicular church was once associated with the French abbey of Ivry.

MINSTREL (old Fr. menestrel, one who ministers). Singer or performer on a musical instrument, or both, in the Middle Ages. Corresponding with the Anglo-Saxon scop or gleeman, of whom Widsith was a type, the minstrel proper, or jongleur, came to England at the Norman conquest. Minstrels were largely the retainers of noble families.

MINSTRELS' GALLERY. In medieval times this was a gallery or balcony projecting into the hall, for the use of the minstrels attached to the household. A good example remains at Exeter Cathedral.

MINT (*Mentha*). Genus of perennial herbs of the order Labiatae widely distributed outside the tropics.



Minorca Fowl, a valuable breed for laying
C. Reid

They have creeping root-stocks, square stems and branches, pungent aromatic leaves, and purplish flowers. Of the ten species recognized as natives of Britain the most important are peppermint (*M. piperita*), yielding the essential oil of the same name; penny-

royal (*M. pulegium*); spearmint or lamb-mint (*M. spicata*), used for making mint sauce and yielding oil of spearmint. Menthol (q.v.) is obtained from the Japanese peppermint (*M. arvensis* var. *piperascens*).

MINT (Lat. moneta). Government office where money is coined. The British mint dates from Anglo-Saxon times; as now constituted, from 1817. The existing building on Tower Hill, London, was erected in 1810. The ancient office of master, or warden, was in 1870 combined with that of the chancellor of the exchequer; its real head is the deputy master, a civil servant. It has branches at Melbourne, Perth, Ottawa, and Pretoria. Sample coins are collected in a "pyx" or box, and annually weighed and assayed by the Goldsmiths' Company—the test being known as the trial of the pyx (q.v.). The crown alone has, through Parliament, the prerogative of coinage.



Minotaur being slain by Theseus, sculptured group by C. Ramey
Louvre, Paris

MINTO, GILBERT ELLIOT, 1ST EARL OR (1751-1814). British administrator. The eldest son of Sir Gilbert Elliot, third baronet, of Minto, Roxburghshire, he entered parliament in 1776 and helped Edmund Burke in framing the case against Warren Hastings and Sir Elijah Impey. He was in turn governor of Corsica and British minister in Vienna. In 1806 he was made governor-general of India, where he extended the British power. He was made an earl on his retirement in 1813, and died June 21, 1814.



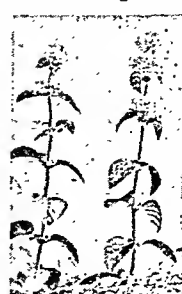
4th Earl of Minto, British administrator

MINTO, GILBERT JOHN ELLIOT-MURRAY-KYNNMOUND, 4TH EARL OF (1847-1914). British administrator. Born July 9, 1847, son of the third earl, whom he succeeded in 1891, he was educated at Eton and Cambridge, and served in the Scots Guards, 1867-70. He was military secretary to Lord Lansdowne in Canada, 1883-85; governor-general of Canada, 1898-1904; and viceroy of India, 1905-10. He died March 4, 1914, and was succeeded by his son, Victor Gilbert (b. 1891).

MINTON WARE. Soft and hard paste porcelain ware made by Thomas and Herbert Minton at Stoke-upon-Trent. The Mintons were making semi-transparent china in 1790. In 1825 they made a white-bodied earthenware with printed design and a new borax glaze. Later they produced both soft and hard paste porcelain, artistic in design and decoration. Parian ware, encaustic tiles, majolica, Palissy ware, and della Robbia plaques and panels, all remarkable for the excellence of body, design, and colouring, were also made by the Mintons.



Minton Ware. Vase, about 1860, from Herbert Allen Collection
Vict. & Albert Mus.



Mint. Flowers and leaves of water mint

MINUET (Fr. menuet). Dance for two persons in three-four time. It originated in Poitou, was a favourite at the court of Louis XIV, and was introduced in England at the court of Charles II. As a musical composition the minuet occurs in the suites of Bach and Handel and in the symphonies of Haydn.

MINUTES. Business term for a summary of the proceedings of the meetings of a company, committee, or other body of men acting in a joint capacity. The record is kept in a minute book by the secretary. By the Company Acts, limited companies must keep minutes both of their general meetings and those of their board of directors. Treasury minute is the name given to an official memorandum issued from the Treasury.

MIOCENE. In geology, name given to an epoch of time between the Oligocene and Pliocene periods. The rocks of the Miocene period are chiefly unconsolidated clays and sands, limestones, and conglomerates, and are found in France, Belgium, Switzerland, Austria, and the Mediterranean and America, but are absent from Great Britain. The animals of this epoch included the mastodon, dinotherium, rhinoceros, the three-toed protohippus, and the hippotherium. See Geology.

MIQUELON, GREAT AND LITTLE. Islands off the S. coast of Newfoundland, forming, with the St. Pierre group, the only French North American colony. The islands are connected by a strip of sand $5\frac{1}{2}$ m. long, and the chief industry is cod-fishing. St. Pierre is the capital. The total area is 93 sq. m., and the pop. nearly 4,000.

MIRABEAU, GABRIEL HONORÉ RIQUETI, COMTE DE (1749-91). French statesman. He was born at Bignon, Provence, March 9, 1749, and as a young man distinguished himself as a reckless rebel against all social and moral conventions. When the States-General met on May 5, 1789, the third estate under his leadership refused to allow itself to be adjourned. But there were few round him who could grasp the ideal for which he was striving—a strong constitutional



Comte de Mirabeau, French statesman. After Condorcet, in Versailles Museum.

government, free alike from the incubus of aristocratic privileges and from the anarchy of uneducated democracy. Early in 1790 he was still hoping that a new assembly might become the instrument of his aims; but the strain of the gigantic task which, almost unaided, he had taken upon his shoulders was too great for him, and on April 2, 1791, he died.

Mirabeau's younger brother, André Boniface Louis Riqueti Mirabeau (1754-92), became a writer and served in America during the independence. In 1789 he was a member of the States-General, and there he was a bitter helper of his brother and of reform generally. A heavy drinker, he was called tonneau Mirabeau. Pron. Meerabo.

MIRABEAU, VICTOR RIQUETI, MARQUIS PERTUIS (1715-84). French economist. Born at Pertuis (Vaucluse) Oct. 5, 1715, he was notable for his essays on the theory of the market. He wrote the popular *L'Ami des Hommes*, in which he suffered from the impôt, 1760, for which he was sentenced to a short term of imprisonment; *Les Économies*, 1762; and *La Science*, 1774. A man of extraordinary tastes and famed as a political writer, he was notorious for his quarrels with his wife, Marie de Vassan, and with his son Gabriel Honoré. He died at Argenteuil on July 13, 1789.

MIRACLE (Lat. miraculum, a marvel). Event transcending the laws of nature, as these are known to man. A miracle need not be contrary to the natural order, but simply inexplicable by that order in so far as we have knowledge of it; and some theologians have maintained that it may be an occasional manifestation in that natural order of a vaster and greater order, which as a whole is now inaccessible to our senses or our reason.

Apart from the records of miracles, the Gospels give the impression of writings in which truth of fact as well as truth of thought and life is valued, and in which the intention to record only the truth is honestly carried out.

MIRACLE PLAY. Type of medieval religious drama, usually drawn from the legends of the saints. They were usually acted—at first in Latin—by young clerics, boys, and even girls, on the eve of a saint's day. The earliest on record in England was a play of St. Catherine, written by Geffrei, a Norman schoolmaster at Dunstable, about 1100. There are but scanty remains of English plays of this type—the Christmas play of St. George, still acted by boys in English villages, is a degenerate survival—but many French examples are extant. There are also German and Italian miracle plays.

MIRAGE. Optical illusion produced by reflection and refraction when successive layers of air have different temperatures, and, in consequence, different densities. The most perfect mirages are seen in deserts and on the sea. In the former, plains often look like lakes, whilst on the sea inverted images of ships are frequently seen. The phenomenon is explained by the bending of the light rays in passing from one medium into another of different density. Thus abnormalities of visibility arise, and mirages are seen.

MIRAMICHI. River of New Brunswick, Canada. It rises near the centre of the prov. and flows to Miramichi Bay. Its chief tributaries are Little South West Miramichi, North West Miramichi, and Cain. All are noted for their salmon fisheries. Length 220 m. Miramichi Bay is an indentation on the coast of New Brunswick. It is one of the largest arms of the Gulf of St. Lawrence. Fox, Passage, and Neguac, three long narrow islands, form an almost perfect barrier in a curve across its mouth.

MIRANDOLA, GIOVANNI PICO DELLA (1463-94). Italian humanist and philosopher. Born Feb. 24, 1463, member of the Pico family, which owned an estate at Mirandola, he is said to have been master of 20 languages. He endeavoured to reconcile Platonism with Aristotelianism and Christianity. He died in Florence, Nov. 17, 1494.

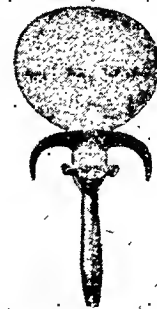
MIRDITES. Tribe of N. Albania. They number about 25,000 and inhabit the mountainous region S.E. of Scutari, with their chief centre at Oroshi. Their territory is called Mirdita. Backward in culture and in religion Roman Catholic, they have always opposed Turkish and other attempts to absorb them. They have hereditary chiefs known as capidans, who are descended from the house of John Marco.

MIRFIELD. Urban dist. and market town of Yorkshire (W.R.). It stands on the Calder, 5 m. from Huddersfield, is served by the L.M.S. Rly., and manufactures woollen and cotton goods, while occupation is also found in the surrounding coal mines. Market day, Tues. Pop. 12,131.

THE MIRFIELD COMMUNITY. This is an Anglican order for priests, its full name being the Community of the Resurrection. Founded in 1892 at Pusey House, by Charles Gore, the community removed to Radley in 1893, and in 1898 to Mirfield. It maintains a theological

college, also a hostel at Leeds University. There are branches in Johannesburg and London.

MIRROR. A looking-glass or any polished reflecting surface. Mirrors of polished bronze were used by the Egyptians, Greeks, and Romans. Silver, steel, and aluminium have been employed. Glass was first used in Venice about 1300. A sheet of tinfoil was placed on the glass, and over this a coating of quicksilver, which formed an adhesive amalgam. The modern method, introduced by Liebig in 1830, is to precipitate an ammoniacal solution of silver salt, to which tartaric acid and sugar candy are added, on glass, and finish off with a coat of paint and varnish. Mirrors were first made in England in 1673.



Mirror. Egyptian bronze mirror. British Museum.

MISDEMEANOUR. In English law, a crime punishable on indictment which is not a felony. There is no distinction of principle. Larceny is a felony, while perjury is only a misdemeanour; but a conviction for a misdemeanour never involved forfeiture of land or goods, as a conviction for felony did.

MISERERE. The Latin title and first word of Psalm 51 (Eng. Have mercy), one of the seven penitential psalms (in the Vulgate, Ps. 50).

In ecclesiastical architecture the name miserere is given to a hinged seat of a stall in church. It was introduced for the benefit of aged ecclesiastics. The under-bracket is often finely carved, as in the misereres of Henry VII's chapel, Westminster Abbey.

MISHMI. Aboriginal hill tribe living in the N.E. corner of the Brahmaputra valley, Assam. They may represent an ancient offshoot from the Miao of S. China, and are remarkable for their peculiar religion and customs.

MISHNA (Heb. teaching). Jewish code embodying the oral law. It was compiled and edited by Rabbi Jehudah el Nasi, c. A.D. 200. Divided into six parts, the Mishna, long handed down orally, is written in late Hebrew. Further commentaries were embodied in the Gemara, and the two works form the Talmud. The Mishna was first printed in 1492, and has been translated into most modern languages. See Talmud.

MISREPRESENTATION. In English law, a false statement of fact. A transaction, such as a sale induced by a misrepresentation of a material fact, can be repudiated by the party deceived if he repudiates it as soon as he discovers the falsity of the statement, and if it is possible to put the parties in the same position as before. No action will lie for damages for misrepresentation unless the statement was either made fraudulently, with knowledge of its falsity, or was a warranty.

MISSAL or Mass Book. Office book of the Roman Catholic Church. It contains the service for Mass throughout the year. Revised and printed under Pius V, when the Council of Trent, 1570, ordered its use in all churches



Mishmi. Chieftain of the tribe.

that could not claim uses of their own of 200 years' standing, it was again revised in 1604 and 1634. The first mention of a missal is found in the 8th century. There are various missals for different rites or uses, Ambrosian, Sarum, Hereford, Lincoln, York, Bangor, etc.

MISSIL THRUSH OR **MISTLE THRUSH** (*Turdus viscivorus*). Largest of the British song-birds. Nearly related to the song thrush, it is most abundant in Ireland. Its song is most notable in the winter, hence its local name of the storm-cock. It nests in trees early in the spring, and two or even three broods are



Missil Thrush, a common song-bird of the British hedgerows

reared in the season. It feeds on worms, grubs, snails, insects, and the berries of many plants, particularly the mistletoe, whence its name.

MISSENDEN, GREAT AND LITTLE. Two villages of Buckinghamshire. They lie 9 m. S. by E. of Aylesbury, on the Met. and L.N.E. Rlys. Pop., Gt. 2,600, Lit. 1,300.

MISSIONS (Lat. mittere, to send). Bodies of men and women sent by religious organizations to work among the unconverted. Christian missions began in the Apostolic age and were continued till about 1100. S. Patrick was sent to Ireland in 440, S. Augustine to Britain in 597, S. Boniface to Germany in 715. The Crusades tended to replace missions by attempts to convert the heathen and Moslems by the sword. In the latter part of the 15th century missionaries, mainly Franciscans and Dominicans, accompanied the Spanish and Portuguese expeditions. The 18th century witnessed a slackening in missionary effort; but since that date there has been a great development. The following figures, the latest available, show approximately the number of baptized Christians in the principal fields:

	Protestants	Roman Catholics
Japan and Korea ..	355,462	187,450
China ..	536,597	2,244,366
India and Ceylon ..	2,001,973	4,162,555
Dutch East Indies ..	751,658	104,675
Africa and Madagascar	1,812,582	1,888,530

Christian missionaries have been mainly responsible for reducing to writing the numerous languages of Africa and other parts of the world, and for the preparation of dictionaries, grammars, school-books, and literature in these languages. The Bible has been translated into nearly all languages. More than 3,000,000 persons receive treatment annually in mission hospitals and dispensaries.

MISSISSIPPI. River of the U.S.A. It rises in Little Elk Lake, but Lake Itasca, Minnesota, 1,680 ft. alt., is generally regarded as its source, and pursues a circuitous course to the Gulf of Mexico. Its length is about 2,486 m., but including its longest tributary, the Missouri, it measures 5,431 m. At its junction with the Missouri its breadth is 5,000 ft., and below New Orleans 2,475 ft. Of its tributaries the more important are the Minnesota, Des Moines, Missouri, Arkansas, and Red from the W., and the Wisconsin, Illinois, Ohio, and Big Black from the E. Among the towns on its banks are Minneapolis, St. Paul, Dubuque, Moline, Rock Island, Burlington, Quincy, St. Louis, Memphis, Vicksburg, and New Orleans.

In 1927 inundations covered over 1,000,000 acres of the most productive land in the U.S.A.,

caused damage estimated at £80,000,000, and rendered 600,000 persons homeless.

MISSISSIPPI. State of the U.S.A. It has a coastline of 85 m. on the Gulf of Mexico. Its area is 46,865 sq. m., of which 500 are water. The chief rivers are the Mississippi, Pearl, Tombigbee, Yazoo, and Pascagoula.

A great amount of cotton is grown, and much maize. Cattle, sheep, and pigs are reared; the sugar cane is grown, and much land is under fruit. The forest wealth is great. Dairying is increasing in importance. There are some fisheries. Jackson is the capital. There is a State university. Of the population of 1,790,618 more than half are negroes. As part of Louisiana, Mississippi was first settled by French colonists. It sends two senators and eight representatives to Congress.

In geology a group of limestone rocks well developed in the Mississippi Basin is called the Mississippian. The group forms a sub-division of the carboniferous system.

MISSISSIPPI SCHEME. Financial enterprise devised to restore the shaken credit of France. In 1715, when Philip of Orleans became regent, John Law (q.v.) started a bank, and in 1717 formed a company to trade in the vast region around the Mississippi, which he called Louisiana. Having turned his bank into a national institution with the guarantee of the state behind its notes, Law amalgamated with his own two other trading companies and took over the national debt. The shares rose rapidly, and in 1719 were selling at forty times their face value. By July, 1720, the bubble had burst. The government took back the national debt, but speculators had suffered enormous losses.

MISSOLOGHI, MESOLOGHI, OR MESOLONGION. Town of Greece. Situated on a swampy plain N. of the Gulf of Patras, it has a trade in currants, valonia, and local products. Byron died here on April 19, 1824, and a monument was erected in 1881. Pop. 9,270.

MISSOURI (Mud River). River of the U.S.A. It is formed by the junction of the Madison, Jefferson, and Gallatin rivers, which have their sources in the Rocky Mountains and unite at Gallatin City in Montana. It joins the Mississippi about 20 m. above St. Louis and is 2,945 m. long. Its chief tributaries are the Milk and Yellowstone in Montana, the James and White in South Dakota, the Nebraska or Platte in Nebraska, and the Kansas in Kansas. On its banks are Omaha, Atchison, Leavenworth, Kansas City, and Jefferson City.

MISSOURI. Central state of the U.S.A. Its area is 69,420 sq. m., of which nearly 700 are water. Bisected by the Missouri river, it yields rich crops of maize, wheat, oats, potatoes, cotton, tobacco, and flax. The Missouri mule is famous. Missouri is the largest zinc- and lead-producing state of the Union, has more than 14,000 sq. m. of coalfields and a considerable output of iron ore and other minerals. The capital is Jefferson City, but the state contains three cities much more populous, St. Louis, Kansas City, and St. Joseph. Missouri was part of Louisiana, and was settled by the French. Admitted to the Union in 1821, it sends two senators and 16 representatives to Congress. Pop. 3,523,000.

MISSOURI COMPROMISE. This was an arrangement made in 1820 by which Missouri was admitted as a state of the American Union. The state constitution recognized slavery, a fact which aroused a vehement agitation against it in the North. Ultimately slavery was prohibited in the whole of the Louisiana Purchase N. of lat. 36° 30', except that part of it forming the territory of Missouri. The compromise was repealed in 1854.

MISTLETOE (*Viscum album*). Evergreen semi-parasitic shrub of the order Loranthaceae.

Native of Europe and N. Asia, its stems vary in length from a foot to four feet, and the bark is yellow-green. The berries are white, with a single seed invested by glutinous pulp. The berries are eaten by birds, and the seeds become attached to the branches of trees by their agency. On germination the embryo pierces the bark and penetrates to the wood. Of its hosts the chief are black poplar and apple in England and the plains of France; but in Dauphiné and the Rhine valley it is most abundant on Scots pine. American mistletoe forms a distinct genus. The mistletoe was revered by the Druids, is prominent in European folklore, and is a feature of Christmas decorations.



Mistletoe. Sprays of leaves and berries

Mistral. Cold, dry N.W. wind experienced chiefly in winter along the French Riviera.

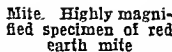
MISTRAL, FRÉDÉRIC (1830-1914). Provençal poet. The son of a peasant, he was born Sept. 8, 1830, at Maillane, Bouches-du-Rhône. His rustic epic, *Mirèio*, 1859, gained the poetry prize of the French Academy and the Cross of the Legion of Honour, and gave wide recognition to the movement for reviving Provençal language and literature. It was followed by other notable works in the Provençal language. In 1904 Mistral received half of the Nobel prize for literature, and devoted it to the purchase of a palace in Arles to house the Félibrean Museum. He died March 25, 1914.

MITCHAM. Urban district of Surrey. It is 10 m. S. of London on the S. Rly. The industries of Mitcham include laundries and the manufacture of sweets, paper, etc., also market gardening and the growing of lavender and other herbs for scents. The charter fair held annually on Aug. 12 (on the old green for the last time in 1923) has been in existence from ancient times. The common covers 480 acres. Pop. 35,118.

MITCHELL, SIR PETER CHALMERS (b. 1864). British zoologist. Born at Dunfermline, Nov. 23, 1864, he was educated at Oxford, where he became demonstrator in anatomy. In 1903, having been a lecturer in biology in London, he was appointed secretary of the Zoological Society. He retained this post for nearly 30 years and was responsible for many improvements in the Gardens in Regent's Park. In 1906 he was made an F.R.S., and in 1929 he was knighted. His writings include *The Childhood of Animals*, 1912; *Evolution and the War*, 1915.

MITCHELSTOWN. Town of co. Cork, Irish Free State. It is 11 m. N. of Fermoy on the G.S. Rlys. There are stalactite caves about 6½ m. N.E. of the town. Serious rioting occurred here in 1887. Pop. 2,146.

MITE. Small creature belonging to the class Arachnida and order Acarina. Most of them are very small, and some resemble miniature spiders. Many are parasitic on animals and plants, and some are the cause



or vehicle of serious disease. Itch and mange are caused by mites that attack the skin. One species, the harvest bug (see illus. p. 709), bores, during its larval stage, into the human skin, causing great irritation. A red mite is

a parasitic pest of poultry and cage birds. Another mite, the so-called red spider, invades hop gardens and does much damage in green-houses. Others infest cheese, flour, etc.

MITTFORD, MARY RUSSELL (1787-1855). British novelist and dramatist. She was born at Alresford in Hampshire, Dec. 16, 1787, the daughter of a doctor. Her tragedies, *Julian*, 1823; *The Foscari*, 1826; *Rienzi*, 1828; and *Charles I*, 1834, met with tolerable success. Her fame rests more surely on her sketches of country life and character in *Our Village*, 1819. In 1852 appeared *Recollections of a Literary Life*. Mary Mitford died at Swallowfield, near Reading, Jan. 10, 1855.



Mary R. Mitford,
British novelist

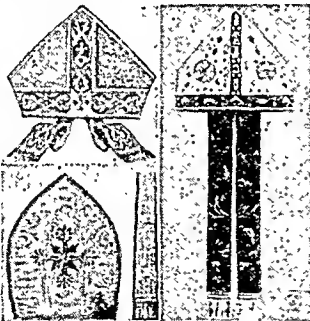
MITHRADATES OR MITHRIDATES (131-63 B.C.). King of Pontus from 120 B.C. Surnamed Eupates and known as Mithradates the Great, he conquered the tribes as far as the Crimea and parts of Armenia, and eventually overran the whole of the Roman prov. of Asia. Sulla signally defeated him at Chacrona and Orchomenos in 86, while another Roman army under Fimbria defeated him in Asia, and Mithradates was forced to conclude peace. Fighting was renewed again in 83-82 and 74-63. In the meantime Mithradates recovered the greater portion of Pontus. Finally Pompey drove Mithradates into the Crimea, where, at his own request, an attendant put him to death.

MITRAILLEUSE (Fr. mitraille, grape shot). French name for machine guns in general. The original Montigny mitrailleuse, taken up by the French in 1869 and introduced in the army for the Franco-Prussian War, 1870-71, consisted of 25 rifle barrels mounted inside a casing resembling the barrel of a field-gun. The breech-block, provided with firing mechanism and strikers for the 25 cartridges, slid backwards and forwards in the barrel casing when a "loading lever" was actuated by hand. The cartridges were carried in metal plates, having 25 holes drilled through them corresponding to the arrangement of the barrels. By revolving a crank handle the cartridges were fired successively, one complete revolution of the crank firing all 25 in approximately one second. See Machine Gun.

MITRE. Head-dress of bishops and certain abbots of the Western Church, and occasionally of other ecclesiastics. In its early forms the mitre, which came into use about the 10th century, was low and simple. In the 14th century it increased in height. In the Church of England mitres fell into gradual disuse after the Reformation, disappearing in the 18th century, but were revived by some Anglican bishops after 1855.

MITRE. In building and joinery, the line formed by the intersection or juncture of two similar blocks or mouldings, the meeting ends of the blocks being equally bevelled.

MITRE, BARTOLOMÉ (1821-1906) Argentine soldier, statesman, and man of letters. Born at Buenos Aires, June 26, 1821, he began his public life as journalist in 1838 at Montevideo. After varied experiences in Bolivia, Peru, and Chile he returned to Argentina and took part in



Mitre. 1. Gothic. 2. Roman, with bands detached; 3. Anglican mitre.
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the successful revolt against Rosas when Buenos Aires became an independent province. He was successively commander-in-chief minister of war, and minister of government and foreign relations. President 1862-68, he died Jan. 18, 1906. Founder of *La Nacion* he was author of *Historia de Belgrano y de la Independencia Argentina*, 1859, and *Historia de San Martin y de la Emancipación Sud-Americana*, 1889-90.

MITYLENE OR MYTILENE Greek island in the Aegean Sea, also called Lesbos. Its area is 675 sq. m. It is mountainous, with two excellent harbours, the soil is fertile, and corn, olives, and vines are cultivated. In the 14th century John Palaeologus bestowed it upon a Genoese nobleman, whose descendants held it until its conquest by the Turks in 1462. In 1913 it was restored to Greece. The chief town is Mitylene, on the E. coast. Pop., island 161,557; town, 27,870. Pron. Mitti-lénē.

MIZPAH OR MIZPEH (Heb. a watch-tower) Ancient name of several high-lying places in Palestine. One has been identified with Nebi Samwil, a mt. 2,935 ft. in alt., 4 m. N.W. of Jerusalem. This owes its present name ("Prophet Samuel") to a Moslem tradition which makes it the burial-place of Samuel (cf. I Sam. 7, 6, 16). Its Moslem mosque, formerly a Crusaders' church, contains a cenotaph which the Moslems revere as the tomb of the prophet. In 1928 some remarkable Israelite remains were unearthed during excavations by an expedition of the Pacific School of the University of California.

MNEMONICS (Gr. mnemonikē, art of memory) Art of improving the memory, especially by artificial aids and methods. Nearly all such methods depend on the association of ideas, and are chiefly based on the principles of localisation and analogy. The former (topology) associates what is to be learnt with the picture of a building or place well known to the learner; the latter establishes an analogy in the case of things or words between them and some familiar object. Attention is now directed rather to the psychological side of the question. The art of memory was regularly cultivated in the Greco-Roman schools.

MOA. Native name for the *Dinornis*, a genus of extinct flightless birds of New Zealand. About 20 species have been identified from remains found in Holocene deposits, the largest standing nearly 12 ft. high, and the smallest being about as large as a turkey. Although they were unable to fly, they could run with great speed.

MOABITES. Ancient Semitic people related to the Hebrews. According to Gen. 19 they were descended from Moab. They were frequently at war with Israel and Judah, and were conquered by David. Solomon took Moabite wives, and introduced the worship of their god Chemosh into Jerusalem. The Moabites recovered their independence, and Mesha, who set up the Moabite stone, won victories over Israel. Moab disappeared after the Babylonian conquest.

MOABITE STONE. This stone is a black basalt slab from Dibon, Moab. Discovered by Klein, 1868, and shattered by its Beduin custodians, it was recovered and reconstructed for the Louvre from paper squeezes (secured by Clermont-Ganneau) covering 34 lines of primitive Hebrew script in the Moabite dialect of about 850 B.C. This inscription narrates Israel's conflict with Mesha.

MOAT. Large trench round a fortified place for defensive purposes. Medieval castles were frequently provided with two moats, usually filled with water, an inner one encircling the keep and an outer the precincts. By means of a moat the height of a battlement was very considerably increased. Bodiam Castle (q.v.), in Sussex, is a perfect example of a moated fortress. The moat of the Tower of London still exists, although it was drained in 1843. Another fine example is that of Ightham Mote, in Kent, an ancient moated manor house.

MOBILE. City and seaport of Alabama, U.S.A., the co. seat of Mobile co. It is 135 m. E.N.E. of New Orleans at the mouth of the Mobile river. It has a fine Gothic cathedral and several important educational institutions. Cotton, timber, resin, flour, cereals, coal, cotton-seed oil, and provisions are exported. Industries include saw-milling, shipbuilding, and the manufacture of cotton, veneers, and machine-shop products. There are important fisheries. Large harbour and dock improvements have been undertaken. The original city was founded in 1702 by the French; the present city, farther S., being built nine years later. Practically all Alabama's foreign commerce passes through it. Pop. 65,000.

MOCCASIN OR MOCCASSIN. Shoe worn by the N. American Indians. They are usually made of raw hide, with uppers of soft deer skin, and are often embroidered with beadwork or decorated with porcupine quills.

MOCCASIN (Natrix). Name of a snake. Found in North America, it is quite harmless. It is related to the garter snake and also to the tessellated snake of Europe.

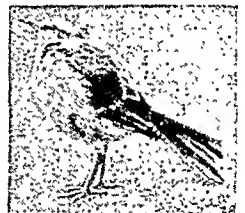
Mocha or MOKHA. Port in the Yemen, S.W. Arabia. It was formerly the centre of an immense trade in coffee. Pop. 2,000.

MOCKING BIRD (Mimus polyglottus). Common bird of the southern U.S.A. and the W. Indies. Nearly related to the thrush, it imitates the notes of other birds. It has a long tail, short wings, and white underpart. The wings and tail are black, marked with white. See Catbird.

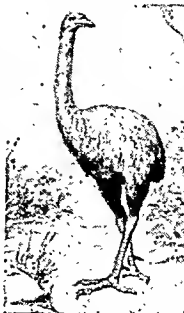
MODDER. River of S. Africa. Rising near Dewetsdorp, about 40 m. S.E. of Bloemfontein, it flows through the Orange Free State and, entering Bechuanaland, discharges, after a course of 186 m., into the Vaal. The battle of Modder River (Nov. 23, 1899) was fought by Lord Methuen in his attempt to relieve Kimberley in the S. African war. After an initial repulse the British forced their way across the river.

MODE. In music, the predecessor of the modern scale. The modern major scale is identical with the Ionian, which began on C. The Dorian began on D; the Phrygian on E; the Lydian on F; the Mixolydian on G; the Aolian on A, like the present descending melodic minor scale; and the Locrian on B.

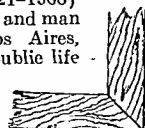
MODEL PARLIAMENT. Name given to the Parliament summoned by Edward I in Nov., 1295. It formed the model of later Parliaments. See England; Parliament.



Mocking Bird. Cuban specimen of the American bird



Moa. Reconstruction of extinct wingless bird of New Zealand



Mitre in joinery. Common form

MODENA. City of Italy, the capital of the prov. of Modena. It is 23 m. by rly. N.W. of Bologna. The splendid Romanesque cathedral, begun in 1099, has a lofty campanile and many carvings and statues. The church of S. Agostino has memorials of the Este family. The ducal palace is used for public purposes. Among other buildings are the university, founded in 1683; a library containing 140,000 vols. and several thousand MSS.; a town hall, dating in part from 1194, and museums and art galleries. There are several fine open spaces. The manufactures include silks, woollens, linens, hats, and leather and iron ware, and there is trade in cattle, cereals, wine, fruit, and liquors. Pop. 91,400.

THE DUCHY OF MODENA. This dates from 1452, and was ruled by members of the Este family. During the Napoleonic wars it became part of the Cisalpine republic. In 1814 it was given to Ferdinand, a member of the Hapsburg family, who had married Maria Beatrice, the heiress of the house of Este, and he and his son reigned until the latter was driven out in 1859. See Este.

MODERATOR (Lat. moderari, to control). An academic or eccles. official. At Oxford moderators are the examiners at the first public examination for degrees (moderation, or abbreviated into mods.). At Cambridge they superintend the examinations for the mathematical tripos. At Dublin they are the candidates for B.A. degree who take first and second place in honours. The word is applied to presiding officers at meetings and courts of the Presbyterian Church. There are also moderators in the Congregational Church of England and Wales.

MODERNISM. A school of thought in the Church of Rome. The term is associated with an effort to adjust dogmatic theology to modern discovery and to bring the Church into intellectual touch with the spirit of the age. It has been consistently and emphatically condemned by the pope, notably in the encyclical Pascendi of Pius X in 1907. The reasons given for this condemnation are that Modernism divorces faith and knowledge, undermines the authoritative definitions of the faith, and opens the door to every kind of error both in faith and morals. Prominent Modernist leaders include A. Houtin, A. F. Loisy, Baron von Hügel, and George Tyrrell.

MODJESKA, HELENA (1844-1909). Polish actress. Born at Cracow, Oct. 12, 1844, the daughter of a musician, she married, 1861, an impresario, G. S. Modrzejewski (d. 1865), and, 1868, Count Bozenta Chlapowski, with whom in 1876 she went to America. Famous in her rendering of Shakespearean and other heroines of tragedy, in 1877 she appeared at San Francisco, in Adrienne Lecouvreur, for the first time acting in English. In Great Britain she made her particular success as Mary Stuart, Lady Macbeth, and La Dame aux Camélias. She died at Bay City, California, April 9, 1909.



Helena Modjeska,
Polish actress

MODULATION. In music, a change of key, or the passing from one scale of tonality to another. When the modulations are to related keys, they are called natural modulations; when suddenly made to a more distant key, extraneous. Chromatic modulation is when the change is effected by chromatic chords. Enharmonic modulation includes a chromatic or extraneous change, together with a substitution of notes.

In wireless telephony modulation means the varying of the amplitude of the high-frequency oscillations which constitute the carrier wave.

When speech or music causes the diaphragm of the transmitting microphone to vibrate, the oscillations are broken up into groups of a pattern corresponding in frequency to the sounds affecting the microphone. When rectified such audio-frequency wave-groups are receivable in a telephone or loud speaker.

MOFFAT. Police burgh and spa of Dumfriesshire. It stands on the Annan, 21 m. from Dumfries, on the L.M.S. Rly. There are a mineral spring and a hydropathic establishment. Pop. 2,426.

MOFFAT, GRAHAM (b. 1866). Scottish actor and dramatist. Born in Glasgow, Feb. 21, 1866, he was educated at Rosemount Academy, Glasgow. He first played in London in 1911, and on July 4 produced his Scottish comedy of Bunty Pulls the Strings, which ran for over 600 performances. He has played in other of his own plays, e.g. Till the Bells Ring, 1908, The Concealed Bed, 1909, A Scrape o' the Pen, 1911, and Don't Tell, 1920.

MOFFAT, ROBERT (1795-1883). Scottish missionary. Born at Ormiston, Haddingtonshire, Dec. 21, 1795, he began life as a gardener. Offering his services to the London Missionary Society, he did splendid work in Africa, 1816-70. He translated the Bible into Bechuana language, and wrote Missionary Labours and Scenes in S. Africa, 1842. In 1819 he married Mary Smith (1795-1870), who was as devoted to the work as he was himself, and their daughter married David Livingstone. Moffat died at Leigh, Kent, Aug. 9, 1883.



Robert Moffat,
Scottish missionary

Mogador or **Es SUEIRA.** Seaport of Morocco. It has a good harbour and a considerable trade. Pop. 18,400.

MOGUL (Arab. mughal, Mongol). Name applied to the empire founded c. 1526 by Bahar, the Mahomedan conqueror of India. It fell to pieces after the death of Aurungzebe (1707), and in 1858 finally ceased to exist. The term is applied to high-class playing-cards. The emperor of Delhi was known as the Great Mogul. See Akbar; Aurungzebe; Bahar.

MOHAIR (Arab. mukhayyar, choice, select). Fleecy of the Angora goat. Mohair has been imported from Turkey since the 17th century, and mohair spinning has been carried on in Bradford, Yorkshire, since 1848. The better qualities are taken for dress goods; others are made into plushes, braids, astraklans, and heavy cloths. Turkey mohair normally commands the best prices, but mohair of fine quality comes from S. Africa.

MOHAMMED. Name, a variant of Mahomet, of six sultans of Turkey. Mohammed I reigned 1413-21; Mohammed III, 1595-1603; Mohammed IV, 1648-87; and Mohammed VI, 1918-22.

MOHAMMED II (1430-81). Sultan of Turkey, known as Mohammed the Conqueror (El Fâtih). Son of Murad II, he was born at Adrianople, and succeeded his father in 1451. In 1453, at the head of over 150,000 men and a fleet of 400 vessels, he captured Constantinople. Making Constantinople his capital, he subdued Serbia in 1459; made himself master of the Morea, 1460; of Trebizond, 1461; of Lesbos, 1462, and of Wallachia and Bosnia, 1463. In 1472 he overcame the Persian forces in Cappadocia, and took Caffa in the Crimea from the Genoese in 1475. In 1478 he forced Venice to sign peace and surrender Skutari in Albania, and in 1480 he attacked the Neapolitans and captured Otranto. Shortly afterwards he died at Gebze, and was succeeded by Bayazid II.

MOHAMMED V or **MEHMED RESHAD** (1844-1918). Sultan of Turkey. Born Nov. 3, 1844, younger brother of Abdul Hamid II, whom he succeeded in 1909, he lived in dull and isolated obscurity most of his life, the real power being in the hands of the Young Turk party, headed by Enver Pasha, Talaat Bey, and others. He is believed to have been by no means willing to side with Germany in the Great War, and for a while did what he could to avoid a rupture with the Allies, but was overruled. He died July 3, 1918, and was succeeded by his brother Mohammed VI (b. Jan. 12, 1861), who was deposed Nov., 1922, and died at San Remo, May 15, 1926.



Mohammed V,
Sultan of Turkey

MOHAWKS (Narraganset, man-eaters). North American Indian tribe of Iroquoian stock. Formerly one of the Six Nations, located between the St. Lawrence and the Catskills, they migrated to Canada, and they number about 5,000.

The name was given to a London fraternity of dissolute young men of fashion in the early 18th century. A royal proclamation was issued against them, March 18, 1712.

MOHICANS. Name popularly applied to a N. American Indian tribe, officially called Mahicans. An allied tribe are called Mohegans (wolf). Of Algonquian stock, the former moved from the Hudson valley into Pennsylvania, the latter northward into New England. Both are now extinct.

MOHMAND. Pathan tribe of the Indo-Afghan frontier. They are Iranian Aryans, speaking a N. Pushtu dialect. The British campaign of 1897 secured their submission. Though assured by treaty of their full Afghan privileges, they gave much trouble during the Great War.

The Mohmand country is a section of the North-West Frontier Province. It lies N. of the Khyber Pass and the Kabul river. A region of rugged barren hills, it affords an alternative route to that of the Khyber Pass.

MOHUN, BARON. Irish title borne from 1628 to 1712 by the family of Mohun. John Mohun (c. 1592-1640) was the first holder. The last, Charles Mohun (c. 1675-1712), in 1692 helped Richard Hill in an attempt to carry off the actress, Mrs. Bracegirdle, and in a scuffle William Mountfort, the actor, was killed. Mohun was tried and acquitted. In 1699 he was similarly relieved from a charge of murder. On Nov. 15, 1712, he fought a duel in Hyde Park with the 4th duke of Hamilton and both were killed, an incident immortalised in Thackeray's Henry Esmond. Pron. Moon.

MOIDORE (Port. moeda d'ouro, money of gold). Obsolete Portuguese gold coin valued at 4,800 reis, or a little over a guinea nominally, it was not minted after 1732.

MOIR, DAVID MACBETH (1798-1851). Scottish physician and humorist. He was born at Musselburgh, Jan. 5, 1798, and spent his life there. Over the signature Delta he contributed much verse to Blackwood's Magazine, and is remembered chiefly by his Autobiography of Mansie Wauch, a diverting picture of humble Scottish life in the style of his more famous contemporary Galt. Moir died July 6, 1851.

MOLASSES. By-product in sugar refining, the uncrystallisable part of the sugar. It is a thick, brownish-yellow liquid useful as a food. Rum is produced by fermenting molasses. See Rum; Sugar.

MOLD. Urban dist. and market and co. town of Flintshire, Wales. It is 13 m. from Chester on the L.M.S. Rly., and is in the

centre of important lead and coal mines. There are manufactures of bricks, tiles, nails, beer, etc., and also works for making tinplate. The town had a castle in the Middle Ages. Market days, Wed. and Sat. Pop. 5,000.

MOLDAU or **VLTAVA**. River of Czechoslovakia. It rises in the Bohemian Forest, near the Austrian frontier, and flows 265 m. to join the Elbe (Labe) at Melnik, through Prague and Budejovice (Budweis), to which it is navigable. From Budejovice a canal leads to the Danube.

MOLDAVIA. District of Rumania. Wallachia, Transylvania, and the Bukovina bound it on the W., and Bessarabia on the E. The Carpathians on the W. are its most striking natural feature. Its chief river is the Sereth (Siret). Important towns are Jassy, Botosani, and Bacau. Its area is about 14,700 sq. m. Pop. 2,233,556.

In the 13th and 14th centuries Moldavia, which takes its name from the Moldava, a tributary of the Sereth, was an independent state, but it was conquered by the Turks in 1511, and farmed out by them to the Greek Phanariote princes. The union of Moldavia and Wallachia under the name of Rumania was proclaimed at Jassy and Bukarest, Dec. 23, 1861. Moldavia was successfully held against Austro-German forces in 1916-17.

MOLDAVIA. Autonomous socialist soviet republic. It consists of some 3,200 sq. m. along the left bank of the Dniester. Agriculture is the chief industry. The capital is Balta. It dates from 1924. Pop. 572,000.

Mole. Pigmented spot on the skin, usually raised and covered with hair.

MOLE. Name given to a widely distributed family of insectivorous mammals (Talpidae). The European mole (*Talpa europaea*), common in Great Britain, is about 6 ins. long and covered with velvety greyish black fur. The mole, which has very small eyes and powerful claws, lives mostly underground, and feeds on worms, grubs, and insects. The small heaps on the grass are the mould cast out in the course of burrowing, whence its popular name, mould-warp (earth-caster). Its hill or nursery is usually constructed in an open field, near a water supply. It consists of a central chamber a few inches below the surface, often with galleries and tunnels.

Mole. River of England. It rises in Balcombe forest, N. Sussex, and flows 30 m. through Surrey to the Thames near Molesey.

MOLE CRICKET (*Gryllotalpa vulgaris*). Orthopterous (straight-winged) insect, common in Central and S. Europe. A member of the cricket tribe, it lives underground, and preys upon worms, insects, and vegetation. It is nearly 2 ins. long, yellowish-brown in colour, and covered with fine, downy hair.

MOLECULE. Smallest particle of matter that can exist independently whilst retaining the distinctive properties of the original substance. The term was first applied by Avogadro in 1811 to distinguish the smallest unit of matter with which physical phenomena are concerned, from the atom. Some molecules contain only one atom, others are composed of several atoms. While not divisible by the mechanical or physical changes of the substance, molecules are readily broken up by chemical reactions or by an electric current. When such a division occurs there is always a

readjustment. The molecular theory of matter supposes that matter is not a continuous structure, but is discrete, i.e. made up of distinct minute particles or molecules.

Molecules, it is assumed, are in a state of perpetual motion, this taking different forms according to whether the matter is gaseous, liquid, or solid. Lord Kelvin gave an idea of the size of molecules by stating that if a drop of water, the size of a pea, were magnified up to the size of the earth, each constituent molecule being enlarged in the same proportion, the molecules would appear somewhat smaller than cricket balls. See Atom.

MOLE RAT (*Spalax*). Genus of burrowing rodents, related to the rats, but resembling moles in appearance. They are blind, their eyes being beneath the skin. They feed on roots and bulbs. The typical species (*S. typhlus*) is found throughout S.E. Europe, Asia Minor, Persia, and Lower Egypt.

MOLESEY or **MOULSEY**. Two districts in Surrey, East and West, forming an urban district. They stand on the right bank of the Thames, 2 m. from Kingston on the S.R. A regatta is held here yearly. Near by the river Mole enters the Thames. Pop. 8,000.

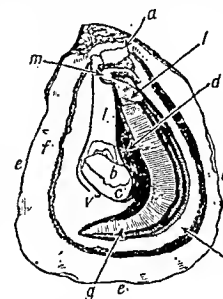
MOLE SHREW. Small burrowing mammal of the Blarina genus found in N. America and Japan. It resembles the common mole, but is much smaller. It feeds upon small worms and insects.

MOLIERE, pseudonym of Jean Baptiste Poquelin (1622-73). French dramatist. Born in Paris in Jan., 1622, he was destined for his father's business, that of an upholsterer, but at the age of twenty-one he founded with some friends a theatrical company, L'illustre Théâtre, which played unsuccessfully at Paris for two years. They then tried their fortunes in the provinces, and after five years of struggle achieved a considerable reputation. In 1658 they returned to Paris, and two years later were established in the theatre of the Palais Royal.

In 1659 Molière made his début in social comedy with *Les Précieuses Ridicules*, and in 1662 he produced his first great comedy, *L'École des Femmes*. Molière's principal plays besides the two already mentioned are *Le Tartuffe*, 1664; *Don Juan*, 1665; *Le Misanthrope*, 1666; *L'Avare*, 1668; *Le 1670. Les Femmes savantes*, 1672; and *Le Malade imaginaire*, 1673. Slighter, but of excellent quality, are *L'École des Maris*, 1661; *Le Mariage forcé*, 1664; *L'Amour médecin*, 1665; *Le Médecin malgré lui*, 1666; *Le Sicilien*, 1667; and the remarkable *Critique de l'École des Femmes*, 1663. Molière died in Paris, Feb. 17, 1673. See France.

MOLLUSC. Name given to any of the mollusca (Lat. molluscus, softish), the animal phylum, or sub-kingdom, which includes the "shell-fish," the snails and slugs, and the cuttles. Molluscs may be described as soft, cold-blooded animals, with unsegmented and

limbless body, possessing no internal bony skeleton and no cartilaginous tissues—except in the cephalopods—and in the majority of cases secreting a shell either external or internal. Except in the bivalves (q.v.), most of them possess a head provided with a mouth containing the characteristic radula or tooth ribbon. In nearly all the families a foot or locomotive organ is present. Another characteristic feature is the mantle or fold of skin,



Mollusc. Anatomy of common oyster: a, hinge line; b and c, adductor muscle; d, attachment of gills to mantle; e, e, edge of valve where mantle is attached to shell; f, fringed edge of mantle; g, gills; i, liver; m, mouth; v, vent

which may either cover both sides of the body, as in the bivalves, or part of the back only, as in the univalves. The shell is secreted by the mantle. Molluscan shells take the most varied forms. They are double, like a closed book, in the bivalves; usually spiral in the gastropods, as the snail and the whelk; elongated and tubular in the elephant tusk shells; composed of a series of plates in the chitons or "coat-of-mail shells"; concealed by the mantle in the slugs; or quite internal, as the so-called "bone" of the cuttles. Molluscs are widely distributed. The majority are marine, but many inhabit fresh water, and others are terrestrial. They are all very sensitive to touch, notably along the edge of the mantle. The tentacles on the head appear to have a tactile purpose, and the foot is extremely sensitive. Most of the species, except the bivalves, have eyes on their head, either upon or closely associated with the tentacles or horns.

Reproduction is sexual; though hermaphroditism occurs, self-fertilisation appears to be rare. The young are produced from eggs, usually hatched exterior to the body of the parent; but in the bivalves and some gastropods they are retained within the body or the shell of the parent till after hatching. The mollusca are grouped into four classes: Gastropoda, Scaphopoda, Pelecypoda, Cephalopoda. See the articles bearing these titles.

MOLOCH. Canaanite fire god, a Semitic word meaning king. This Septuagint spelling represents the Hebrew Molech, whose worship, notably under Ahaz and Manasseh, involved child-sacrifice and pyre-burning (2 Kings 23). These were sacrifices to Jahveh, and the rites survived among the Jews until a late period, as is proved by references to them by Ezekiel and Jeremiah.

MOLOKAI. One of the Hawaiian Islands, Pacific Ocean. The leper settlement, the scene of the labours of Father Damien (q.v.), is in the middle of the N. coast. The people live mainly on a narrow fertile strip along the S. coast. The mountains rise to 3,000 ft. Area, 261 sq. m. Pop. 2,500.

MOLTKE, HELMUTH KARL BERNHARD, COUNT VON (1800-91). German soldier. Born in Meeklenburg, Oct. 26, 1800, he entered the Danish army in 1819, but transferred his services to Prussia in 1822. During the years of peace he lectured, surveyed, studied, and wrote, and so prepared himself for a post on



Count von Moltke. German soldier



Mole Rat. Specimen of the South European rodent resembling a mole



Mole. Specimen of the common European variety



J. B. P. Molière. French dramatist. Portrait of Lebrun's school

the general staff in Berlin which he secured in 1832. In 1835 he went to Turkey, where he saw active service with the Turkish army in Syria. In 1840 he returned to Berlin, and in 1845 was made chief of the staff of an army corps. In 1855 he became adjutant to the crown prince, and in 1858 chief of the general staff.

Owing to years of patient study, Moltke was peculiarly well qualified for his new position. He gave to the work of the general staff an importance it had never enjoyed before, and his influence on war has been enormous. He organized the campaign which crushed Denmark in 1864, a comparatively easy task, and the one that reduced Austria to impotence in 1866. His brain, too, conceived the plans by which the French armies were so rapidly and unexpectedly defeated in 1870. In 1871 Moltke was elected to the Reichstag. In 1888 he resigned his office, and he died in Berlin, April 24, 1891. His wife was an English lady, Mary Burt.

MOLTKE, HELMUTH JOHANNES LUDWIG VON (1848-1916). German soldier. Son of Adolf von Moltke, and nephew of the great von Moltke, he was born May 23, 1848. He entered the army and served through the Franco-Prussian War. In 1906 he became general of infantry and chief of the general staff. He was the real generalissimo of the German army when the Great War broke out, and held that position till Oct., 1914, when, owing to the failure to capture Paris, he was superseded. He died June 18, 1916.



Helmuth von Moltke, German soldier

MOLTON, SOUTH. Borough and market town of Devonshire. It stands on the Mole, 12 m. from Barnstaple, on the G.W. Rly. The fine Perpendicular church of S. Mary, Magdalene has an old pulpit. The town is an agricultural centre, and its industries include flour-milling. Market day, Thurs. Pop. 2,848.

North Molton is a village 3 m. to the N.E.

MOLUCCAS OR SPICE ISLANDS. East Indian islands forming part of the Dutch East Indies. They include Gilolo or Halmahera, Ternate, Tidore, Bachian, Buru, Ceram, Amboyna, and the Banda Islands. The islands cover 190,860 sq. m. Pop. 839,459.

The Spice Islands were known by repute long before European ships reached the East Indies, and their products were greatly desired during the Middle Ages, when seasoning was required to make winter meat palatable. In 1613 the Dutch acquired them, and hold them now. See Amboyna; Ceram.

MOLYBDENUM. One of the metallic elements, chemical symbol, Mo; atomic weight, 96; atomic number, 42; specific gravity, 8.6; melting point about 1,900° C. It is silver white in colour, with a strong metallic lustre. While a rare metal, it is widely distributed. It is in demand for use in the preparation of alloy tool steel.

MOMBASA. Port of Kenya Colony, E. Africa. It lies on a coral island connected with the mainland by rly. Mombasa Harbour, on the N.E. of the island, is mainly used by small steamers and native craft; Kilindini harbour, used by larger vessels, is at the S.W. end. Mombasa is the coastal terminus of the Kenya and Uganda Rly. It was at one time the capital of the Portuguese empire in E. Africa. Pop. 39,824, of whom 869 are Europeans.

MOMMSEN, THEODOR (1817-1903). German historian and scholar. Born at Garding in Slesvig, Nov. 30, 1817, he specialised in the study of antiquities, and spent three years in

Italy studying inscriptions. The results of his work brought him wide recognition, and in 1848 he was appointed professor of civil law at Leipzig, and later, professor of ancient history at Berlin. His Roman History appeared between 1854-56. He also undertook the task of editing the Corpus Inscriptionum for the Berlin Academy. Other notable works were one on Roman coinage, and two dealing with Roman law. In 1884 appeared his Roman Provinces, the most valuable of all his contributions towards the elucidation of ancient history. From 1873-82 he was a member of the Prussian Parliament. He died Nov. 1, 1903.



Theodor Mommsen, German historian

MOMUS. In Greek mythology, the god of jest and mockery. His sarcasm and criticisms became so obnoxious to the other gods that he was expelled from heaven. He was the son of Night.

Mona. Name by which the island of Anglesey (q.v.) was known to the Romans. The name was also applied to the Isle of Man.

MONACO. Principality of S. Europe. Except for the short coastline on the Mediterranean, this state of 8 sq. m. is entirely bounded by the French dept. of Alpes Maritimes. The revenue is mainly derived from the gaming tables. Pop. 24,927 in the towns of Monaco (pop. 2,085), La Condamine, and Monte Carlo.

The family of Grimaldi secured Monaco in 968, and when, in 1715, the male line failed, it passed to a daughter and her husband. Since 1861 it has been under the protection of France. The ruler, Prince Louis II, gave it a constitution in 1911, but in 1923 there was trouble between the prince and the representatives of the people. See Monte Carlo.

MONAGHAN. County of the Irish Free State in the prov. of Ulster. Its area is 499

sq. m. The surface is undulating, with hills in the south and east, and in parts boggy. The chief rivers are the Blackwater, along the N.E. boundary, and the Finn, and there are many small lakes. Oats, flax and potatoes are grown; cattle, sheep, pigs, and poultry are reared. Coal, limestone, and gypsum are mined on a small scale. The G.N. of Ireland Rly. and the Ulster canal serve the county. Monaghan is the county town; other places are Clones, Carrickmacross, Castleblayney, and Ballybay. Pop. 65,131.

MONAGHAN. Urban dist. of co. Monaghan, Irish Free State; also the county town. It is on the G.N. of I. Rly. and the Ulster canal, being 52 m. from Dublin. The town has a trade in agricultural produce. Pop. 4,636.

MONA LISA. Name given to a half-length portrait by Leonardo da Vinci (q.v.) in the Louvre, Paris. The subject was a Florentine lady, Lisa di Anton Maria di Noldo Gherardini, who married Francesco di Bartolommeo del Giocondo in 1495. From her

married name the picture is often known as La Gioconda or La Joconde. In Aug., 1911, it was stolen from the Louvre, but was discovered in Florence and restored in Dec., 1913.

MONARCH. Large red and black butterfly. Its home is in the United States, and in the summer it enters Canada, but it has not settled on the other side of the Atlantic. Its name is Anosia archippus.

MONARCHIANISM. Name given to a heresy propounded in the 2nd and 3rd centuries by certain Christians who, under cover of upholding the monarchia or original oneness of God, opposed the orthodox doctrine of the Trinity. This heresy was denounced by Justin Martyr (c. 100-165).

MONASH, SIR JOHN (b. 1865). Australian soldier. Born at Melbourne, June 27, 1865, he began to practise as a civil engineer in 1884. He entered the Australian forces in



Sir John Monash, Australian soldier
Bossano, Ltd.

1887, and rose to the rank of colonel. When the Great War began, Monash was first of all chief censor. In command of the 4th brigade he went to Gallipoli, and remained there until the evacuation. In France he commanded the 3rd Australian division, and on June 1, 1918, he took command of the Australian Corps, and retained it until the armistice, when he became director-general of demobilisation for Australia. He was knighted in 1918. In 1920 he published *The Australian Victories in France in 1918*.

MONASTERBOICE. Village of eo. Louth, Irish Free State, 5 m. N.W. of Drogheda. Its remains include two churches, a round tower 110 ft. high, and three fine crosses.

MONASTICISM (Gr. monastikos, living alone). System under which persons live

who have abandoned the world for a life of religious seclusion. It is more ancient than Christianity, and perhaps is prehistoric. The monastic ideal spread from the East to Western Europe, where it found a legislative genius in Saint Benedict (c. 480-543), whose rule either superseded or modified all others.

Throughout the Dark Ages the monks did indirectly work of great value as missionaries, sacrificing their ideal of seclusion to the necessities of their fellow-men. The 11th and 12th centuries saw a considerable revival of learning and civilization in Europe; and the monastic system was found to need a good deal of reform. Between 1020 and 1120 eight new and stricter orders were founded. Of these the most important were the Carthusian, Præmonstratensian, and Cistercian, but by the end of the century the reform had spent most of its force. Then came the great revivals associated with the names of S. Francis (d. 1226) and S. Dominic (d. 1221).



Monaghan, Ulster. Map of the pastoral county of the Irish Free State

The Franciscan revival contributed greatly to the advancement of learning, and from about 1230 onwards the friars became for a century the most active and successful of university teachers. This was the last of the great reforms of the Middle Ages, though much was done at different places to avert decay. The necessity for the dissolution of the monasteries in England by Henry VIII can be inferred from monastic records themselves.

In the 19th century the monks were expelled from France and other countries. The orders, however, survived and many new houses were founded. See Abbey; Benedictines; Cistercians; Franciscans, etc.

MONASTIR or BITOLJ. Town of Yugoslavia, 130 m. N.W. of Salonica, with which it is joined by rail. It was the capital of a vilayet of the same name while Macedonia was under Turkish rule, and was of importance both militarily and commercially. It was a Turkish depot, had manufactures of leather and carpets, and exported grain. It was allotted to Serbia by the treaty of Bukarest, 1913. During the Great War it was taken by the Bulgarians in Dec., 1915, and regained by the Allies Nov. 19, 1916. Pop. 39,000.

MONBODDO, JAMES BURNETT, LORD (1714-99). Scottish lawyer. Born at Monboddoo, Kincardineshire, he was called to the bar, rapidly acquired distinction, and in 1767 became a lord of session. Far in advance of his age, he studied the origins of mankind from a new standpoint, and enunciated his views boldly in *The Origin and Progress of Language*, 1773, and *Ancient Metaphysics*, 1779-99. Lord Monboddoo died May 26, 1799. He is most generally remembered from Boswell's frequent references to his theories of human origin and Dr. Johnson's comments.

MONCTON. City and port of entry of New Brunswick, Canada. It stands on the Petitcodiac river, 89 m. from St. John. The C.N. Ry. have workshops here, and there are lumber mills. Pop. 17,488.

MOND, Ludwig (1839-1909). German chemist. Born at Cassel, Germany, March 7, 1839, he came to England in 1862 to introduce a process for the recovery of sulphur from alkali waste, and in 1873, in partnership with Sir John Brunner, erected works near Northwich for the manufacture of soda. Mond also invented a cheap source of power from small coal, and discovered a method of recovering nickel from low-grade ores. In 1896 he founded the Davy-Faraday Research Laboratory in connexion with the Royal Institution, London. He became naturalised and died in London, Dec. 11, 1909. His son, Alfred Moritz, became baron Melehet (q.v.) in 1928.

MONET, CLAUDE OSCAR (1840-1926). French painter. Born at Havre, Nov. 14, 1840, he was greatly influenced by Manet's new method of painting in bright colours laid on in separate tones. He adopted the method, and was joined by Pissarro, Sisley, Renoir, etc., the group becoming known as the Impressionists. Monet was the real founder of Impressionism. Among his first pictures were *Déjeuner sur l'Herbe*, 1866; *Déjeuner*



Claude O. Monet,
French painter

dans un intérieur, 1868; and figure pictures, *Camille*, 1866; and *La Japonaise*. He went to live by the Seine, and painted the river in all its moods, and later painted many pictures of the Thames, and of the sea and rocks on the Mediterranean coast. He painted series of pictures of one subject under varying effects of light and atmosphere, the first being *The Haystacks*, 1890-91, and the second *The Façade of Rouen Cathedral*. He died Dec. 5, 1926. See Impressionism.

MONEY. Device for facilitating the exchange of goods and services. As long as money is confined to coined pieces of metal, its volume depends entirely on the supply of those metals, and thus we find that variations in the supply of the precious metals have caused great variations in the general level of prices, with far-reaching economic effects. If the supply of money cannot be increased as fast as the production of other goods, the buying power of money rises and the prices of other goods fall, and this fall in prices has a depressing effect upon industry.

Coined money, however, has long ceased to be the sole commodity used for the purpose of exchange, having been superseded, except for small retail transactions, by notes issued by banks or governments, and in countries at a high state of economic civilization by cheques drawn on banks. But these credit instruments, as they are called, only won the essential quality of acceptability by being at all times and without question convertible on demand into gold, which had in the meantime gained undisputed supremacy over silver as the metal of universal acceptability.

MONEY BILL. This is any proposal put before Parliament which involves the expenditure of public money. The rules and procedure for the passage of such measures into law differ from those of ordinary bills thus: (1) They must be introduced by a minister of the crown; (2) They can only originate in the House of Commons; (3) By the Parliament Act the House of Lords was deprived of the right of rejecting money bills.

MONEYLENDER. One who lends money, but especially one who does so for a livelihood. In the United Kingdom, as in other countries, special legislation has been found necessary for the protection of the public against moneylenders. By the Moneylenders Act of 1900 a moneylender is defined as a person whose business is that of lending money, or "who advertises or announces himself or holds himself out in any way as carrying on that business." Pawnbrokers, bankers, insurance companies, friendly societies, building societies, loan societies, and persons or corporations who lend money merely incidentally for business purposes are expressly excepted.

A moneylender must be registered at Somerset House, London, or the offices of the controller of stamps in Edinburgh, for Scotland. If a moneylender lends money without being registered, or if he carries on his business from an unregistered address, he cannot sue for the debt. He must take out an annual licence at the cost of £15.

An Act of 1927 placed restrictions upon the advertisements sent out by moneylenders.

MONEYWORT or CREEPING JENNY (*Lysimachia nummularia*). Perennial creeping herb of the order Primulaceae, native of Europe. Its prostrate stems creep to a length of about 2 ft., and bear roundish heart-shaped leaves in pairs, and cup-shaped, solitary yellow flowers. A species often confused with it is the yellow pimpernel, with shorter stems, yellow-green larger leaves, and smaller flowers.

MONGOL. Name denoting a racial stock

in Mongolia, with offshoots in Manchuria and Chinese Turkistan. Estimated (1923) at 1,800,000, they form, with the Turkic and Tungus stocks, the round-headed Altaian branch of the straight-haired yellow race. The coarse, black hair is scanty except on the scalp. The characteristic Mongolian fold of skin over the inner angle of the eyelids, and the lifted outer angle, produce the well-known slant-eyed effect.

In various forms—Mongoloid, Mongoloid—the term also designates the whole yellow race, one of the three primary divisions of mankind.

MONGOLIA. Outlying region of N. China, surrounding the desert of Gobi. It forms an intermediate region between the high plateau of Tibet and the Arctic lowland of Siberia. In winter the cold is intense; in summer the slight rains produce pasture and fodder shrubs for the sheep, goats, horses, and camels of the nomadic inhabitants, Mongols and Kalmuks. The Irtysh and Selenga are the chief rivers. The principal centres include Urga (Ulan Bator Hoto), Uliassutai, and Kobdo. The chief exports are skins, hides, furs, horns, and wool. Gold, copper, silver, iron, and tin occur.

Inner Mongolia, between the Gobi, China proper, and Manchuria, is still part of China. Outer Mongolia became a republic in 1924. Since 1923 the Mongol-Buriat Republic has been an autonomous republic of the Soviet Union. In 1929 another independent republic was declared in the district of Barga, with its capital at Hailar. Its area is about 1,360,000 sq. m. Pop. between 3,000,000 and 5,000,000.



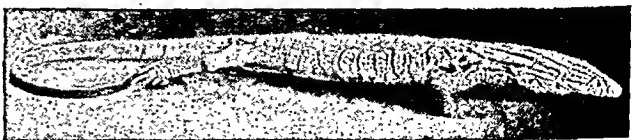
Mongoose. Grey mongoose of India, a species that makes war upon snakes.
W. S. Burridge, F.Z.S.

MONGOOSE (*Herpestes griseus*). Small carnivorous mammal of the family Viverridae, which includes the civet-cats, and is restricted to the Old World. More closely allied to the iehneumon, the Indian mongoose is a smaller animal with greyish fur and long, bushy tail. It displays great prowess in destroying snakes. See Civet.

MONICA (332-387). Saint and mother of S. Augustine of Hippo. She was married at an early age to Patricius, who became converted through her good example. S. Augustine (q.v.) attributed his conversion to her prayers.

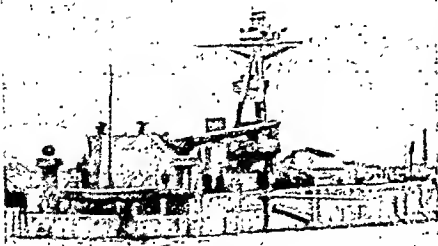
MONIFIETH. Burgh of Angus (Forfarshire), Scotland. It stands on the N. side of the Firth of Tay, 6 m. from Dundee, on the L.N.E.R. The industries include jute mills and machinery works. Pop. 3,225.

MONITOR (*Varanus*). Genus of large lizards of the family Varanidae. Including about 30 species, they are found in Africa, Southern Asia, Australasia, and Oceania. Distinguished from other lizards by their long forked tongue, they are long in the body, have no dorsal crest, are thickly covered with small scales, and some attain a length of over 6 ft. See Lizard.



Monitor. Specimen of Desert Monitor, *Varanus griseus*

MONITOR. Armoured vessel of slow speed, light draught, and low freeboard, designed to operate in shallow waters. Her sides have great, anti-curving hulges upon them for the purpose of resisting torpedo attack. Monitors carry only one or two large guns. The first was built by John Ericsson and used in the American Civil War. In the Great War monitors were employed on the Belgian coast in 1914 and 1918. As the war proceeded more powerful monitors were built, until vessels of this kind were capable of mounting an 18-in. gun. See illus. p. 569.



Monitor employed by the British Navy. H.M.S. General Wolfe, carrying an 18-in. gun
Abrahams, Devonport

Monk, GEORGE. Name of the British soldier who was created duke of Albemarle (q.v.).

MONKEY. Popular name for all mammals of the order Primates, with the exception of man and the anthropoid apes. Monkeys generally are distinguished by their smaller size and the shape of the molar teeth, while individual groups have tails, naked callosities on the buttocks and cheek pouches. It is usual to divide the monkeys into two great families, the Cercopitheciidae of the Old World and the Cebidae of the New. In all the American species the nostrils are more widely separated and more laterally situated than in the Old World monkeys; the former have four more teeth, and none of them have the cheek pouches and the callosities on the buttocks that many of the latter possess. Many of them have prehensile tails, which is not the case with any Old World species.

Monkeys occur throughout Africa, Asia, and the hotter parts of the American continent. In Europe they still linger on the Rock of Gibraltar, but were formerly much more widely distributed. Generally arboreal in habit, they are usually found in small companies under the leadership of old males. With the exception of a few of the larger species, monkeys are timid and inoffensive in disposition. As pets, monkeys have long been popular on account of their amusing antics; See Animal; Ape; Baboon; Capuchin; Colobus; Douroucouli; Lemur; Primates.

Monkey Bread. Name given to the fruit of the baobab (q.v.).

MONKEY FLOWER (*Mimulus langedorfi*). Perennial riverside herb of the order Scrophulariaceae. Native of N. America, it has oval-oblong, coarsely-toothed leaves, and large yellow tubulate flowers. Some varieties are richly spotted, or blotched with crimson, maroon, or purple. *M. moschatus*, a much smaller, more delicate plant, is the familiar musk of window gardens.

Monkey Nut. Variant name of the annual herb, ground nut (q.v.).

MONKEY POT (*Lecythis ollaria*). Large tree of the order Myrtaceae, native of tropical America. It has alternate, leathery leaves, and large six-petaled flowers. The fruit is a hard, woody capsule with a distinct lid, and of sufficient size to be used as a water vessel by the natives. When the large, bitter, hard-shelled seeds are ripe the lid falls off to allow

their escape. The bark consists of many thin layers of a papery material, which the Indians separate and use for cigarette wrappers.

Monkey Puzzle Tree. Popular name for the Chile pine. See Chile Pine.

MONKLAND CANAL. Waterway of Scotland. It runs from Port Dundas on the Clyde in Glasgow to the N. Calder river at the Calderbank, passing through Coatbridge. Part of the Forth and Clyde navigation, and 13 m. long, it was cut to carry the coal of the Lanarkshire coalfield. It belongs to the L.M.S. Rly. The name is that of two parishes in Lanarkshire, New and Old, in the coal-mining area. In the Middle Ages the land here belonged to the monks of Newbattle.

MONKSHOOD (*Aconitum napellus*). Perennial herb of the order Ranunculaceae. A native of Europe and Asia, it has a black, spindle-shaped root-stock, and the alternate leaves are cut into sharply-toothed lobes. The large, hood-shaped, dark blue flowers are clustered closely round the upper part of the stem. The whole plant is poisonous, and from its root is obtained the drug aconitine. See Aconite.

MONKWEAR-MOUTH. District of Sunderland. It stands on the N. side of the Wear, on the L.N.E.R. A bridge over the river connects it with Sunderland. In the 7th century Benedict Biscop founded a Benedictine monastery here. The church of S. Peter stands on the site, and comprises remains of the monastic church. See Sunderland.

MONMOUTH. City, borough, market town, and the county town of Monmouthshire. It stands at the junction of the Monnow and Wye, 19 m. from Hereford, with stations on the G.W. Rly. Troy, on the other side of the Monnow, is part of the borough. The grammar school was founded in the 17th century. There are statues of Henry V and of the Hon. C. S. Rolls. Little remains of the castle, in which Henry V was born. Monnow bridge is still protected by a gateway. Monmouth has been the seat of a bishop since 1921. Near is a racecourse. Market days, Mon. and Fri. Pop. 5,110.



Monkey Pot, leaves and fruit. Inset, seed, which has a hard shell



The common Monkshood (*Aconite*)

MONMOUTH. British armoured cruiser. She was launched in Nov., 1901, and first commissioned Dec., 1903. Her length was 449 ft.; beam, 66 ft.; displacement, 9,800 tons. H.p. and speed were respectively 22,000 and 22 knots, the armament consisting of fourteen 6-in. guns. Attached at the outbreak of the Great War to the squadron under Sir C. Cradock, she was lost with all hands in the fight with the German force off Coronel (q.v.), Nov. 1, 1914.

MONMOUTH, JAMES SCOTT, DUKE OF (1649-85). Scottish prince. The son of Charles II by Lucy Walters, he was born at Rotterdam, April 9 1649, during his father's exile. In 1663 he was made duke of Monmouth, and married Anne Scott, countess of Buccleuch. When the question of the succession to the throne became urgent, Monmouth was taken up by Shaftesbury and those who desired to exclude James, duke of York. In 1683 he took refuge in Holland, where he was when Charles died and James became king. He then landed at Lyme Regis



James Scott, Duke of Monmouth



Monmouthshire. Map of the English county on the border of South Wales

and was greeted as king in the western counties. He attacked the royal troops at Sedgemoor without success, July 6, 1685, took flight, was captured at Ringwood, and beheaded in London, July 15, 1685. Monmouth left two sons: James, earl of Dalkeith, the ancestor of the dukes of Buccleuch; and Henry, earl of Deloraine.

MONMOUTHSHIRE. County of England, although for many purposes regarded as part of Wales. In the W. it is bordered by Wales and has a coastline on the Severn estuary of 21 m. The surface is generally hilly. The chief rivers are the Wye, Usk, Ebbw, Rhyrnyne, and Monnow. Monmouth is the county town, others including Newport, Chepstow, Abergavenny, Tredegar, and Ebbw Vale. The chief industry is coal mining, the S. Wales coalfield stretching into the county. Wheat, rye, and other crops are grown, but

much land is given up to sheep. The county contains some magnificent scenery. It is served by the G.W. and L.M.S. Rlys. and by canals. Its area is 546 sq. m. Pop. 450,794.

The Monmouthshire Regiment was established when the territorial force was organized in 1907. It consists of territorial or volunteer battalions only and in 1914 there were three of these. All were mobilised in August and went to France early in 1915.

MONOLITH (Gr. monos, single; lithos, stone). Stone block, usually monumental and of large dimensions. It may be an unhewn menhir; the capstone or support of a megalithic monument; a heven obelisk; a sarcophagus; a sculptured temple, or a statue. See illus. p. 419.

MONOPLANE. In aeronautics, name given to a type of aeroplane which has only one set of main supporting surfaces. Many of the earliest aeroplanes were monoplanes, e.g. that of Louis Blériot, which flew the English Channel, July 25, 1909. Some of the largest modern aeroplanes are of monoplane type, and the seaplane on which the 1929 Schneider trophy was won for Great Britain was a monoplane. See Aeroplane, and plate facing p. 28.

MONORAIL. System of transport in which a single rail is used to support the weight of a carriage or truck. Such systems have been adopted for the transport of ore from mines, the trucks being balanced in pairs, one on each side of the rail, which is attached to A-shaped supports. There is a passenger monorail line from Barmen to Elberfeld, the carriages being suspended from the rail. In the monorail system invented by Louis Brennan in about 1907 the car is supported on a single rail laid on the ground. It is kept in equilibrium by a gyroscope with flywheels moving at a high speed. See Gyroscope.

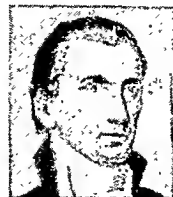
MONOTHEISM (Gr. monos, single; theos, god). System of religious thought and practice which admits only one God. It is thus opposed to polytheism, and to henotheism, which worships only one God, but admits that others may exist.

MONOTYPE. Machine used by printers for setting up words from MS. into single letters of movable type. Invented about 1837 by Talbot Lanston, an American lawyer, in 1901 it was commercially used in England, and The Times adopted it in 1909. Its product is akin to that of the hand compositor, each letter cast in a line being a distinct and separate unit. Two distinct operations are involved and two distinct machines are employed: (1) a keyboard, like a typewriter, for perforating a roll of paper; and (2) a machine casting the single letters of type and automatically assembling them into words. The depression of a key by the operator perforates a hole in a reel of paper, each hole representing a space or a letter. See Compositor; Linotype; Printing.

MONRO, SIR CHARLES CARMICHAEL (1860-1929). British soldier. Born June 15, 1860, he entered the West Surrey Regiment in 1879. He was in charge of the London division of Territorials, 1912-14, and when the Great War began he took the 2nd Division to the front. In 1915 he was given command of the 1st Corps, and when the Third Army was formed was placed at its head. Soon afterwards he succeeded Sir Ian Hamilton as commander-in-chief in Gallipoli, and superintended the evacuation. He was commander-in-chief in India 1916-20. In 1915 Monro was knighted. He was governor of Gibraltar 1923-28, and died Dec. 7, 1929.

MONROE, JAMES (1758-1831). American statesman. Born in Virginia, April 28, 1758, he fought in the War of Independence. In 1782 he entered the legislature of Virginia. In 1790 he entered the Senate, where he joined

the party hostile to Washington. In 1794 Monroe went to France as minister, but was recalled two years later. From 1799 to 1802 he was governor of Virginia, after which he went to France and Spain



James Monroe,
American statesman

to endeavour to bring about the purchase of Louisiana and Florida. From 1803-7 he was minister to Great Britain. In 1811 Monroe became again governor of Virginia, and in 1812 secretary of state under Madison, being also secretary of war during the latter part of the war with

Britain. In 1816 he was elected president, and he filled the office for eight years. He died in New York, July 4, 1831.

THE MONROE DOCTRINE. This was a principle of international policy held by the U.S.A., the root idea of which is America for the Americans. The two essential points are the following: (1) "The American Continents . . . are henceforth not to be considered as subjects for future colonisation by any European power." (2) "We should consider any attempt on their part to extend their system to any portion of this hemisphere as dangerous to our peace and safety." The doctrine, which does not seek to prevent European powers from enforcing just claims under international law, was reaffirmed by Polk in 1845 and 1848.

MONROVIA. Capital of the republic of Liberia, W. Africa. It is a port of entry with a trade in palm nuts and dye woods. Pop. (with Krutown) 10,000.

MONS (Flemish, Bergen). Town of Belgium. It stands on the river Trouille, 38 m. by rly. S.W. of Brussels, on a hill in the coal district of the Borinage. A rly. and military centre, it has various industries, e.g. textiles, lace, oils, soap, and sugar.

The Gothic church of S. Waudru was begun about the middle of the 15th century. The town hall dates from 1458. Mons has stood many sieges. It was in German occupation from Aug. 23, 1914, until its recapture by Canadian troops, Nov. 11, 1918. Pop. 27,969.

THE BATTLE OF MONS. On Aug. 22, 1914, the British expeditionary force of 65,000 men and 250 guns, under Sir J. French, reached a front which ran from a point E. of Mons to Condé. They entrenched and remained on the defensive until French progress in other directions gave the signal for a general advance. At daybreak of Aug. 23 German artillery began to shell the exposed loop on the canal N.E. of Mons; at 8 a.m. German infantry advanced in this quarter, and developed a turning movement against the British right.

Sir J. French, learning that at least four German corps (160,000 men) were attacking him or turning him, and that the French 5th army was in retreat, ordered an immediate retirement of the British to his second position, which had been prepared a little to the

S., and this was carried out at dawn. The British loss may be provisionally estimated at 4,000 or 5,000; the German at double that figure.

The 1914 Star, given for services in France and Belgium between Aug. 5 and Nov. 22-23, 1914, is popularly known as the Mons Star See Medal.

MONSERRAT. Mountain and monastery of Spain. It is 21 m. from Barcelona, and the highest point of the mountain mass is over 4,000 feet high. On one peak a monastery was built in the 8th century. Its chapel contained an image of the virgin which was said to work miracles. This attracted thousands of pilgrims, and the monastery became one of the most famous and wealthy in the country.

MONSOON (Ital. monzone; Arah. mau-sim, season). Name of a rain-bearing wind which blows over the Indian Ocean from May to Sept. Most of India receives from 60 to 90 p.c. of the total annual rainfall during the period of the monsoon; the fall at a given place varies from year to year, and the comparative failure of the periodical downpour means famine and plague. See Wind.

MONSTRANCE (Lat. monstrare, to show). Sacred vessel of the R.C. Church, in which the Host is presented for adoration, carried in procession, and used in Benediction. It consists of a glass or crystal receptacle, in which the Host is placed. This is mounted in a gilded frame, and supported by a stem and foot.

MONTAGNA, BARTOLOMEO (c. 1450-1523). Italian painter. Born at Orzinuovi, near Brescia, his earliest known picture still extant is The Virgin and Child, 1487, at Bergamo. His Madonna and Child, in the National Gallery, was formerly ascribed to Bellini. Other important paintings are the San Michele altar-piece, 1499, The Presentation in the Temple, and frescoes at Vicenza. At Verona he painted the frescoes in the chapel of S. Biagio. He died Oct. 11, 1523.

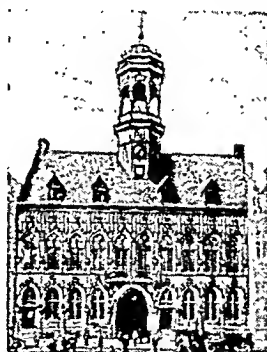
MONTAGU, CHARLES EDWARD (1867-1928). British author and journalist. Born Jan. 1, 1867, in 1890 he joined the staff of The Manchester Guardian, and for 35 years helped to give that paper its distinctive character. Although over military age in 1914, he served in the Great War, first as a private and then, after having been wounded, as a press officer. In 1911 he wrote a novel, A Hind Let Loose, and published Dramatic Values. His other books include The Morning's War, 1913; Fiery Particles (short stories): Disenchantment, 1922; Rough Justice, 1926; and Right Off the Map, 1927. Montagu retired in 1925, and died May 28, 1928. Consult C. E. Montagu: A Memoir, O. Elton, 1929.

MONTAGU, ELIZABETH (1720-1800). English writer. Daughter of Matthew Robinson, she was born at York, Oct. 2, 1720. In 1742 she married Edward Montagu, son of the earl of Sandwich, and from about 1750 onwards her salons, first in Hill Street, later at Montagu House, Portman Square, were centres of social-intellectual life in London. An occasional writer, she made a spirited reply to Voltaire in her Essay on the Writings and Genius of Shakespeare, 1769. She died Aug. 25, 1800.

MONTAGU, LADY MARY WORTLEY (1689-1762). English poet and letter writer. Born at Thoresby, Nottinghamshire, in 1712 she



Monstrance,
Gothic pattern



Mons. The Hôtel de Ville,
a building which dates from 1458

married Edward Wortley Montagu (d. 1761), whom she accompanied to Constantinople in 1716. On their return



Lady Mary Wortley Montagu, English letter-writer

to England they were persuaded by Pope to settle at Twickenham, but the friendship between Lady Mary and the poet gradually cooled, and ultimately ended in a quarrel. She died Aug. 21, 1762. Her gift for satirical verse was shown in her *Town Eclogues*, 1716, but it is as a letter writer that she excels. Her *Letters* were first published in 1777.

MONTAGU OF BEAULIEU, JOHN WALTER EDWARD DOUGLAS-SCOTT-MONTAGU, 2ND BARON (1866-1929). Born June 10, 1866, he was Conservative M.P. for the New Forest div. of Hants, 1892-1905, when he succeeded to the peerage. A great sportsman and traveller, he represented *The Times* during the Matabele War. He became known as an expert on motoring, aviation, and all transport questions. From 1915-19 he was adviser on mechanical transport to the Indian government. He died March 30, 1929.

MONTAIGNE, MICHEL D'ÉYQUEM, SIEUR DE (1533-92). French essayist. Born Feb. 28, 1533, at the Château de Montaigne, near Bordeaux, in Périgord, he went to the college of Guienne, and studied law, probably at Toulouse. He became a magistrate and attended the court of Francis II. Shortly after his marriage Montaigne succeeded to the family estates. A sufferer from stone, he sought recovery by a visit to the baths of Lucca, and in 1580-81 travelled to Italy by way of Switzerland and Germany. Recalled from travel by his election as mayor of Bordeaux, he was re-elected and retained office until 1585. He died Sept. 13, 1592.



Michel de Montaigne, French essayist. Contemporary portrait, French school, Musée Condé

Montaigne's first literary work was a translation of the *Theologia Naturalis* of Raimond Sebond, 1568; it served as the text of one of his essays, the first two books of which appeared in 1580; a second edition came out in 1682, a third in 1587, and a fourth, with book three, in 1588. Montaigne's *Journal de Voyage*, written in part by a secretary and in part by himself, was discovered in MS. at the Château de Montaigne in 1769-70 and first printed in 1774.

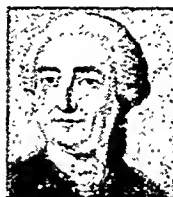
MONTALEMBERT, CHARLES FORBES DE TRYON, COMTE DE (1810-70). French politician and man of letters. Born in London, son of an émigré, he returned to France on the Restoration, and became known as the founder, with Lamennais, of the journal *L'Avenir*, 1830, and a champion of the cause of religious liberty. He died March 13, 1870. His writings include *Vie de S. Elisabeth de Hongrie*, 1836 (Eng. trans. 1904); *Des Intérêts Catholiques au XIX^e Siècle*, 1852; *Les Moines d'Occident depuis S. Benoît jusqu'à S. Bernard*, Eng. trans. 1896.

MONTANA. State of the U.S.A. The W. portion is traversed by the Rocky Mts., whence the surface descends E. to a rolling plain, interspersed with valleys. The headwaters of the Missouri and Columbia rivers rise in Montana, and the Yellowstone and other Missouri affluents help to drain the state. The mineral resources include copper, coal, lead, silver, and petroleum. The state university is at Missoula. There are some 6,000 m. of rlys. Helena is the capital. Area, 147,182 sq. mi.; pop. 540,300.

MONTARGIS. Town of France. It stands on the river Loing, here met by the Vernisson, 47 m. by rly. E. of Orléans. It is a rly. junction and the meeting-place of the canals of the Loing, Orléans, and Briare. In the 14th century Aubrey de Montdidier was murdered in the forest near this town by Robert Macaire. His dog hunted down the murderer, and Charles V ordered Macaire to fight the animal, which dragged him down and made him confess. Pop. 12,564.

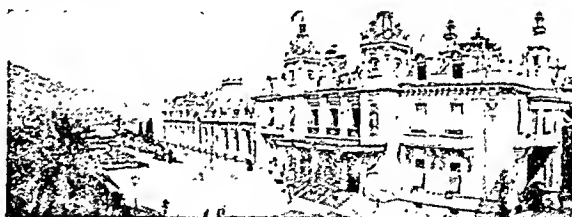
MONT BLANC (Fr. white mountain). Loftiest peak of the Alps, on the Franco-Italian frontier. The summit is 15,781 ft. high. The main mass runs N.E. between Little and Great St. Bernard Mts., and the principal peaks are the Dôme du Goûter (14,210 ft.), Aiguille du Midi (12,608 ft.), Grandes Jorasses (13,797 ft.), Aiguille Verte (13,540 ft.), Aiguille du Dru (12,320 ft.), and Aiguille d'Argentière (12,820 ft.). Mont Blanc was first ascended in 1786 by Dr. Paccard and his guide, Balmat. It is now easily accessible from Chamonix (q.v.). See Alps; Crevasse; Glacier; Mountaineering.

MONTCALEM, LOUIS JOSEPH, MARQUIS DE (1712-59). French soldier. Born near Nîmes, Feb. 29, 1712, he joined the army when quite young, and was appointed in 1756 to the command of the French forces in Canada. At first he was successful, but then the tide turned. The French lost Louisbourg and Fort Duquesne, and Montcalm, forced to retire to Quebec, prepared to defend it against the British under Gen. Wolfe, who led an army of 5,000 men up to the Plains of Abraham, where on Sept. 13, 1759, the French were defeated and Montcalm was mortally wounded.



Marquis de Montcalm, French soldier

MONTÉ CARLO. Town of the principality of Monaco (q.v.). It lies on the N. shore of the Bay of Monaco, adjoining the town of Monaco, and 150 m. by rly. E.N.E. of Marseilles. One of the most frequented resorts of the Riviera, it has an excellent climate, and is noted for the gaming rooms in its large casino, built in 1878. The latter is a palatial structure, adorned with beautiful statuary and paintings, and contains a theatre, reading room, etc. A rly. runs to La Turbie, a mt. village 2 m. to the N.W. Pop. 11,055.



Monte Carlo. The casino, containing the famous gaming rooms

MONTÉ CASSINO. Monastery near Cassino, Italy. Situated on a hill, 1,703 ft. high, about 45 m. N.W. of Naples, it was founded by S. Benedict in 529, on the site of a temple of Apollo, and was the first monastery of the Benedictine order. Destroyed and rebuilt several times, the existing buildings date from 1637-1727. Since 1886 a national monument, it is an educational centre of importance. The fine library contains more than 10,000 volumes and many rare MSS.

MONTÉ CRISTO. Island of the Tuscan Archipelago, N.W. Italy. The ancient Oglasa, it lies 26 m. S. of Elba, has an area of 6 sq. m. and an alt. of 2,120 ft. It contains the ruins of a monastery, destroyed by Corsairs in the 16th century. It is known from the title of the famous romance by Alexandre Dumas the elder (assisted by A. Maquet), 1845.

MONTENEGRO (Serb. Crna Gora, black mountain). Former kingdom of Central Europe, now part of Yugoslavia. It lies between Herzegovina and Albania, and drops steeply to the narrow Dalmatian coast strip; inland it descends almost equally abruptly

to the plains of Serbia. The towns include Cetinje, the former capital, and Podgoritza (Podgorica). The area is 3,733 sq. m. Pop. 199,857.

After the great Serbian defeat at Kossovo (Kosovo Polje), 1389, the Montenegrins established themselves within their mountain fastnesses under a Serbian dynasty. In 1851 Danilo I became gospodar or prince, a title recognized by France and Russia at the Congress of Paris in 1856. By the Berlin Treaty, 1878, the independence of the principality was formally recognized. A constitution was adopted in 1905 and the first Skupshtina, or National Assembly, met in 1906. In 1910 Nicholas I assumed the title of king. A national assembly was elected and met at Podgoritza on Nov. 24, 1918. Within two days Nicholas was deposed, and it was decided to unite with Yugoslavia. See Yugoslavia.

MONTÉREY OR MONTERREY. City of Mexico. Situated in a range of the Sierra Madre, amid orchards and gardens, it is 1,625 ft. above sea level, 165 m. W. of Matamoros. There are foundries, steel works, saw and flour mills, large smelters, and ice factories. Agriculture and silver mining are engaged in. Pop. 88,458.

The city of Monterey, in California, U.S.A., is a seaside resort on Monterey Bay, 125 m. from San Francisco. The town owes its origin to a mission founded by the Franciscans in 1770. It was for some years the capital of the Mexican prov. of California. As "the old Pacific capital," Monterey is described by R. L. Stevenson in *Across the Plains*. In 1853 it was made a city. Pop. 5,479.

MONTÉ ROSA. Mountain mass of the Pennine Alps on the Italo-Swiss border. It lies between the canton of Valais and Piedmont, 50 m. E. of Mont Blanc. Alt. 15,217 ft. It was first ascended in 1855 by G. and C. Smyth, and their companions. See Alps.

MONTESPAN, FRANÇOISE ATHÉNAÏS DE ROCHECHOUART, MARQUISE DE (1641-1707). French courtier, mistress of Louis XIV. Born at Tonnay-Charente, near Rochefort, she was

the daughter of the duke of Mortemart. In 1663 she married Louis, marquis of Montespan. A woman of great beauty, in 1667 she became the king's mistress, the children of the union being made legitimate by the king in 1673, and a separation from her husband being pronounced in 1674. After 1675 the liaison weakened, though the marquise, displaced now by Madame de Maintenon, remained at court until 1691, when she left Versailles for a religious life. She died May 27, 1707.



Marquise de Montespan, French court lady

MONTESQUIEU, CHARLES LOUIS DE SECONDAT, BARON DE (1689-1755). French writer. Born in Gascony, Jan. 18, 1689. Montesquieu was trained for the law, and succeeded his uncle as the holder of a high legal office in the parlement of Bordeaux in 1716. There he remained until 1726, when he resigned his position and went to live in Paris,

being admitted to the Academy. After a prolonged tour in Europe, he settled down to literary work at his château of La Brède, near Bordeaux, ordering his estates and outer life on the model of an English landowner. He died there Feb. 10, 1755.



Baron de Montesquieu
French writer

des Lois, first published at Geneva in 1749

MONTESSORI, MARIA (b. 1870) Italian educationist. Studying at the university of Rome, she took a medical degree in 1894, and acted as assistant doctor to a psychiatric clinic for mentally deficient children. From this and her experience, 1898-1900, as head of a state institute for the education of such children she learned much that went to form her own system of education. She published several works on her methods, and lectured in England in 1920. In 1922 she was appointed an inspector of schools in Italy.

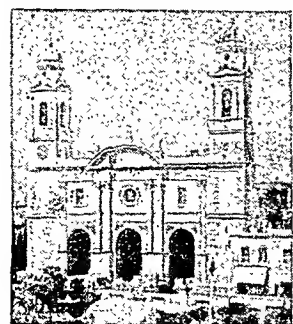


Maria Montessori,
Italian educationist

MONTESSORI METHOD. Method of teaching young children. It was developed by Madame Montessori in Rome, and since widely applied by advanced educationists. She evolved methods which had astounding results with the mentally deficient, and were even more successful with normal infants. The method demands careful observation of the child's physical condition by monthly measurements; special furniture adapted to give the child the completest possible freedom of movement, and to enable him to be independent; discipline based on full liberty for the child; and finally the abolition of prizes and punishments. In England there is a Montessori Fellowship at 4, Graham Road, London, E.S.

MONTEVERDE, CLAUDIO (1567-1643) Italian composer. Born at Cremona, he became as a boy a violinist in the service of the duke of Mantua. In 1602 he was made master of the chapel there. He was music master at S. Mark's, Venice, from 1613 until his death, Nov. 29, 1643. His operas, Arianna and Orfeo, mark important advances in the development of opera, and the harmonic style which he invented he outlined in a book, and defended in controversies with rival musicians.

MONTEVIDEO. City of Uruguay, the capital of the republic. It is 68 m. E. of Buenos Aires. It originally occupied a small peninsula



Montevideo, Uruguay. Facade of the cathedral, completed in 1905

between the Río de la Plata and a bay, of which it formed the S. extremity. The city has spread some miles inland in an easterly direction, and now lines the bay on its three sides.

Montevideo is the principal seaport of the country

and the terminus of several railway lines. One of the best built cities in the western hemisphere, it is the seat of an archbishopric, and has a cathedral and a university. The harbour has been deepened and otherwise improved. Beef, hides, and other animal products are exported, and there are meat packing plants. Pop. 458,784. See Uruguay.

MONTEZ, LOLA (1818-61). Stage name of the Irish dancer, Marie Dolores Eliza Rosanna Gilhert. Born at Limerick, she made her début as a "Spanish dancer" in London in 1843 and subsequently toured Europe and Russia. In 1847 she became the mistress of Louis I of Bavaria, was created by him countess of Landsfeld, and began to meddle in politics. Banished by her political opponents, she returned to England and later appeared on the American stage. She was married three times. Her later years were devoted to charitable work in New York, where she died Jan. 17, 1861.



Lola Montez,
Irish dancer

MONTEZUMA. Name of two Aztec rulers of Mexico. Montezuma I (c. 1390-c. 1469), began to reign in 1437. He extended his dominions to the Pacific and the Gulf of Mexico, crushed the Tlascalans, annexed Chaleo, and enlarged Tenochtitlan, his capital, on the site of which Mexico City is built.

Montezuma II (1469-1520) was the last Aztec ruler of Mexico. Distinguished as warrior and legislator, he extended his conquests to Honduras and Nicaragua, but his arrogance and despotism alienated his subjects and he was killed while a prisoner in Spanish hands.

MONTFERRAT. Former duchy of Italy. It was situated between the republic of Genoa, the river Po, and the Maritime Alps. Ruled by its own margraves, the duchy consisted of upper and lower Montferrat, Casale being the capital. The reigning family, who claimed the throne of Piedmont, ended with John I, whose nephew, son of the Empress Irene of Constantinople, succeeded to the estates, and was the first of the Montferrat-Palaologus house. On the extinction of this family, in 1533, the duchy passed through the Gonzagas of Mantua to Savoy.

MONTFORT, SIMON DE (c. 1208-65).

English statesman. A younger son of Simon de Montfort, count of Toulouse and earl of Leicester, he inherited the English earldom in 1232, and six years later married a younger sister of Henry III. Montfort took a leading position among the barons who were opposed to the king, and in 1259 they forced Henry to accept the provisions of Oxford, which placed the government of the country in the hands of a baronial committee, in each of which Montfort was predominant. In 1261 Henry renounced the provisions. The dispute was referred to the arbitration of Louis IX of France,

who gave his award, the Mise of Amiens (q.v.), against the barons, Jan. 23, 1264. Montfort took up arms, routed and captured the king at Lewes, May 13, and for a year was in effect dictator. In Jan., 1265, he summoned what is often called the first parliament. Now, however, those barons who were jealous of Montfort's power made common cause with the king, and Montfort was defeated and killed at Evesham, Aug. 4, 1265.

MONTGOLFIER, JOSEPH MICHEL (1740-1810). French inventor. Born at Vidalon-lez Annonay, he became interested in aeronautics, and with his brother, Jacques Etienne (1745-99), studied the possibilities of making balloons. Their crude experiments, 1782-83, led to the invention of the modern hydrogen balloon. They were honoured by Louis XVI, and Joseph was appointed to various offices by Napoleon. They wrote on aeronautics. See Aeronautics; Balloon.



Montgolfier Brothers.
French inventors.
From a plaque

MONTGOMERY. Borough, market town and county town of Montgomeryshire, Wales. It stands near the Severn, 7 m. from Welsh pool on the G.W. Rly. The name is that of a Norman family, one of whom built a castle here about 1100. There are ruins of the castle, which was destroyed during the Civil War. The church is mainly of the 14th century. Market day, Thurs. Pop. 954.

MONTGOMERYSHIRE. Inland county of N. Wales. Its area is 797 sq. m. Almost entirely surrounded by mountains, it is itself a hilly region. The Plynlimon range is in the S.W., and elsewhere on the borders are the Bervryn, Breidden, and Kerry Hills. The Severn and Wye rise in the county. Oats are grown, sheep and ponies are reared. The chief town is Montgomery, but Welshpool, Llanidloes, and Llanfyllin are larger. The G.W. Rly. and the Montgomeryshire canal serve the county. Pop. 51,263.

MONTMARTRE. Arrondissement of Paris. It lies to the N. on a hill rising to the summit crowned by the basilica of the Sacré Coeur, begun in 1875. The once famous Abbaye des Dames de Montmartre was founded in 1133. It was in Montmartre that the insurrection of the Commune broke out,



Montgomeryshire. Map of the inland and pastoral county of North Wales

Feb., 1871. The district is thickly populated, has many steep and narrow streets, and is noted for its night life. See Paris.

MONTMORENCY. River of Quebec, Canada. A tributary of the St. Lawrence, it rises in the province and, flowing almost due S. for about 80 m., falls into the larger river near Quebec. It is noted for the falls near the mouth, which are used for supplying Quebec with electric power. The river is associated with Wolfe's attempt on Quebec in 1759.

MONTPELLIER. Town of France. It is 31 m. by rly. S.W. of Nîmes and is the junction of several rly. lines. The university is noted for its faculty of medicine. The cathedral is a 14th century foundation. The Musée Fabre contains a collection of paintings of the French and Dutch schools. There are distilleries, printing works, and other industries. Pop. 82,819.

MONTPEISIER, ANNE MARIE LOUISE D'ORLÉANS, DUCHESSE DE (1627-93). Born in Paris, May 29, 1627, she was a daughter of Gaston d'Orléans, the brother of Louis XIII, and hoped to become queen of France by marrying her cousin Louis XIV. During the Fronde La Grande Mademoiselle sided with the princes, and took a spirited personal part in the capture of Orléans. In Paris she took command at the Bastille, and in the Faubourg St. Antoine fighting, July 2, 1652, fired on the royal troops. After the collapse she retired to her estates of St. Fargeau until 1657. In 1681 she married Antonin, duke of Lauzun (1632-1723). She died in Paris, leaving Memoirs, not published until 1729, which cover the period 1630-88.

MONTREAL. Largest city and commercial capital of Canada, in the prov. of Quebec. It stands on an island in the St. Lawrence, 180 m. from Quebec, 420 m. from New York, and 620 m. from the sea. Pop. 989,835.

The city is built on a series of terraces on the slopes of Mount Royal. To the E. is the French quarter, the English-speaking inhabitants occupying the W. streets and the adjoining municipality of Westmount. Among ecclesiastical buildings are the Roman Catholic cathedral of St. James; Christ Church, the Anglican cathedral, and the quaint Bonsecours church with its aerial chapel, S. Sulpice. The city is the seat of McGill University and of the University of Montreal (formerly Laval University). Magnificent business premises, among them the Bank of Montreal, abound. The Canadian evening newspaper, The Montreal Star, has been closely identified with all patriotic movements.

Montreal is a great railway centre, and here the Canadian Pacific and the National systems have their headquarters. Shipping is Montreal's principal industry, and the harbour has seven miles of deep water frontage. There are flour mills, the shops of the C.P.R. and various manufactures. It is an important banking centre. Its industries obtain ample electrical power from the Shawinigan Falls and the Lachine Rapids. In 1928 it was decided to build in the east of the city an air port. An air port already existed at St. Hubert. In 1930 a new bridge spanning the St. Lawrence from St. Helen's Island to the S. shore was opened.

MONTREUIL. Town of France. It is on the river Canche, 8 m. from its mouth

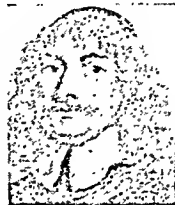
and 20 m. S.S.E. of Boulogne. Its ancient ramparts still survive. The church of S. Sauve dates from the 12th century. Once on the sea, as indicated by its official name Montreuil-sur-Mer, it was long a posting-stage on the Calais-Paris highway, being referred to in Sterne's *A Sentimental Journey*. From March, 1916, to April, 1919, it was the British G.H.Q. in the Great War, Earl Haig having his headquarters at the Château de Beaurépaires, 3½ m. to the S.E. Pop. 2,769.

MONTREUX. Series of lakeside villages of Switzerland, in the canton of Vaud. On the N.E. shore of Lake Geneva, about 50 m. N.E. of Geneva, they extend from Clarens to Veytaux, including also Vernex, Les Planches, Glion, and Territet. The central point is the town of Montreux-Vernex. Montreux is a tourist resort. Pop. 18,675.

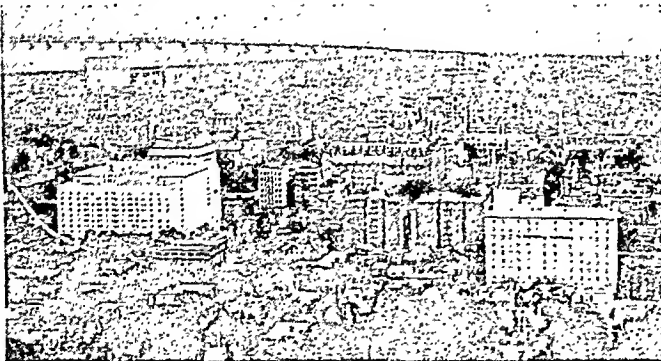
MONTROSE. Burgh and seaport of Angus (Forfarshire), Scotland. It stands at the mouth of the South Esk, the river here forming an estuary and an enclosed stretch of water known as Montrose basin. It is served by the L.M.S. and L.N.E. Rlys., being 31 m. from Dundee and 34 m. from Aberdeen. Industries include fishing, shipping, flax spinning and the making of linen, rope, etc., also shipbuilding. There are fine golf courses. Pop. 10,979.

MONTROSE, JAMES GRAHAM, 1ST MARQUESS OF (1612-50). Scottish soldier.

He succeeded his father as 5th earl of Montrose, Nov. 14, 1626, and in 1637 took an active part in drawing up the National Covenant, but soon found himself in antagonism to Argyll and other leaders, and became in Scotland the foremost champion of the crown. In 1644, at the head of a small force, Montrose conducted in the Highlands a brilliant series of campaigns against the Covenanters, being



1st Marquess of Montrose, Scottish soldier
After Dobson

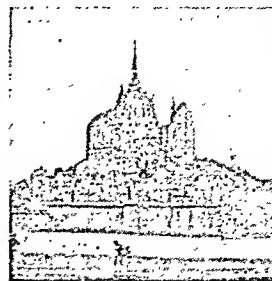


Montreal. Panoramic view showing the dome of St. James's Cathedral and, in the background, the great Victoria Jubilee Bridge, spanning the St. Lawrence
Courtesy of the Canadian Government

victorious at Tippermuir, Sept. 1, 1644, Inverlochy, Feb. 2, 1645, and Kilsyth, Aug. 15. He was, however, defeated at Philiphaugh, Sept. 13. Montrose escaped abroad; but in 1649, after the execution of Charles I, he resolved on one more effort on behalf of Charles II. In April, 1650, he landed in Caithness, but his small force was dispersed at Invercharron, April 27, and he himself was captured and hanged in the High Street, Edinburgh, May 21, 1650.

The title of earl of Montrose which James Graham inherited dates from 1505. He was made a marquess in 1644, and in 1707 his descendant James, the 4th marquess, was made a duke. The duke's seat is Buchanan Castle, near Glasgow, and his eldest son is called the marquess of Graham.

MONT ST. MICHEL. Village of France, in the dept of Manche. It is built on a steep granite rock about 160 ft. high, in the Bay of St. Michel,



Mont St. Michel. Benedictine monastery crowning the granite rock

about ½ m. from the mainland, to which a raised causeway runs. On top of the rock stands the old Benedictine Abbey, founded by S. Aubert of Avranches in 708, which became a favourite place of pilgrimage and a notable centre

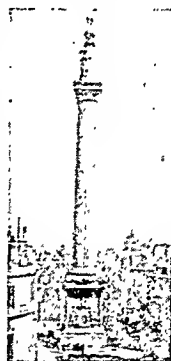
of learning. Monks from the abbey of S. Maur replaced the Benedictines in 1022. The buildings became state property at the Revolution. It is under the care of the Commission des Monuments Historiques. The church, begun in the 11th century, has a 15th century Gothic choir.

MONTSERRAT. Estate at Cintra, Portugal. At one time it belonged to the family of Castro, who had a palace here. Later Beckford and Byron lived here. It was bought in 1856 by Sir Francis Cook, who restored the palace in the Moorish style and laid out the gardens, which became among the most beautiful in Europe. Cook was made Viscount Montserrat. The palace, which contains one of the richest private museums in the world, was sold in 1928.

MONUMENT. Any considerable work of architecture or sculpture designed to commemorate an act or person important in national or local history.

In Great Britain the Ancient Monuments Protection Act, 1882, constitutes the commissioners of works guardians of a certain number of public monuments, with power to add to the number. Private owners of these monuments retain all rights, but must not destroy or deface them.

The fluted column in London known as The Monument was completed in 1677, from the design of Sir Christopher Wren, to commemorate the Great Fire of London, 1666. It stands in Fish Street Hill, a little more than 100 ft. from the site of the house in Pudding Lane where the fire is said to have originated, and is 202 ft. in height. The column contains a spiral stairway of 345 steps of black marble. See London.

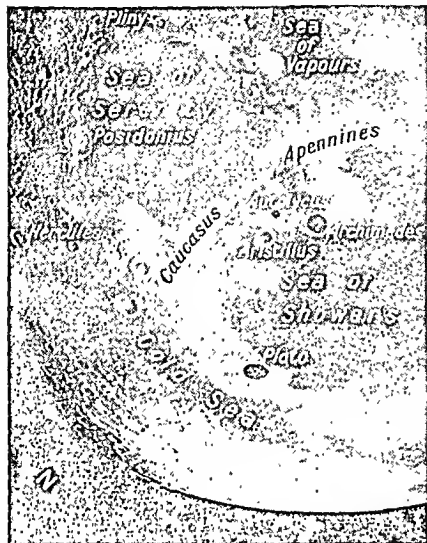


Monument, London. Great Fire memorial

MOODY, DWIGHT LYMAN (1837-99). American revivalist. Born at Northfield, Mass., Feb. 5, 1837, he took charge of a Y.M.C.A., and, after 1840, in company with Ira D. Sankey (1840-1908) travelled throughout America and Great Britain, holding revival services. His later years were devoted to the founding and organizing of a training institution for lay preachers at Northfield. He published several volumes of sermons and addresses, and was associated with his colleague in the compilation of *Sacred Songs and Solos*, 1873. He died Dec. 22, 1899.

MOODY, FANNY (b. 1866). British vocalist. Born at Redruth, Cornwall, Nov. 23, 1866, she studied in London. Her début was made at Liverpool, where she sang soprano with the Carl Rosa Company in 1887. She

quickly became popular, and was for four years prima-donna at Covent Garden, in addition singing for many choral societies in Great Britain, America, and elsewhere. In 1890 she married Southcoote Mansergh, known professionally as Charles Manners, and in 1897 they founded the Moody Manners Opera Co.



Moon. Northern section showing areas, termed seas, of solid lava, and some of the volcanic craters. Photograph taken at Mount Wilson Observatory

MOON. Satellite of the earth, round which it revolves in 27.32 days in a nearly circular orbit, at an average distance of 233,800 m., the greatest and least values being 253,000 m. and 221,000 m. Its diameter is 2,160 m., and it shines by reflecting the sunlight. It rotates on its own axis in the same time as that of its revolution round the earth, so always turning the same face to the earth.

When nearly between the earth and the sun the moon's dark side is towards us, and it is usually invisible; this is called new moon; when 90° distant from the sun, we see half the sunlit hemisphere; this occurs at first and last quarter. The full moon is opposite to the sun, and appears fully illuminated. The interval between two new moons, a lunation, is 29.53 days; longer than the revolution, since the sun has advanced during the 27.32 days, and the moon requires 2 days more to overtake it. The moon plays the chief part in causing the tides, producing by its attraction a deformation in the surface of the ocean. Since the moon's meridian passage gets later by about 50 minutes each day, the tides get later by about the same amount. To the naked eye the surface of the moon shows a number of grey spots; these were called "seas" by early observers, and the name remains, though they are merely plains, covered with some dark material. The volcanic craters are numerous, the larger being fully 60 m. across. See Astronomy; Earth; Eclipse; Sun.

MOONSTONE. Semi-precious stone. It is a translucent, colourless felspar, mostly orthoclase, which is usually cut en cabochon, but also faceted. It reflects a bluish milky light, hence its name. It is also known as fish's eye, wolf's eye, and water opal. See Gem.

MOONWORT (*Botrychium lunaria*) Fern of the order Ophioglossaceae. A native of temperate and cold regions, it has a small tuberous root-stock and fleshy roots. It produces a single annual frond, which is divided, one branch bearing a double row of half-moon-shaped leaflets, the other branch having secondary branches which bear rows of leathery spore capsules. Formerly it was believed to have the magic power of loosening locks, bolts, etc.

MOORE, GEORGE (h. 1852). Irish author. The eldest son of George Henry Moore, M.P., of Moore Hall, co. Mayo, his earliest published works were volumes of verse, *The Flowers of Passion*, 1877; and *Pagan Poems*, 1881. As a novelist he began with *A Mummer's Wife*, 1885, which, like *Esther Waters*, 1894, was a work of the realistic type. Later works include *The Brook Kerith*, 1916, dealing with the life of Christ. In 1911 Moore wrote his reminiscences in the form of a trilogy. In 1921 appeared his version of *Heloise and Abelard*; in 1922 *In Single Striptness*, in 1926 *Ulrich and Soracha*, and in 1927 his play, *The Making of an Immortal*.

MOORE, SIR JOHN (1761-1809). British soldier. Born in Glasgow, Nov. 13, 1761, he entered the 51st Foot in 1776, and by 1802 his reputation as a soldier stood very high. Having been knighted, he was, in 1803, chosen to command the troops at Shorncliffe, and here he trained some of the best regiments of the service. In 1806 Moore was sent to the Mediterranean, and in 1808 he was ordered to Portugal, and was soon in command of the British troops there. Events made it necessary for him to fall back to Corunna, where his men turned and fought the French, Jan. 16, 1809. Moore was mortally wounded and died on the 17th. The circumstances of his burial are known through Rev. C. Wolfe's poem. For six years, 1784-90, Moore was a Scottish M.P.



Sir John Moore, British soldier After Lawrence

MOORE, MARY. British actress, known in private life as Lady Wyndham. Born in London, she appeared at Bradford in 1835 under the management of Charles Wyndham, with whom she remained for the rest of her career and whom she married as her second husband in 1916. She accompanied him on his American tours, and was his partner in the Criterion, New, and Wyndham's theatres. After his death she continued in the management of these theatres, and in 1924 started Wyndham Theatres, Ltd.

MOORE, THOMAS (1779-1852). Irish poet. Born in Dublin, May 28, 1779, he came to London in 1799, where his engaging personality and unusual gifts quickly procured for him a large circle of distinguished friends. A volume entitled *Poetical Works of the Late Thomas Moore* appeared in 1801. In 1803 he was appointed registrar of the Admiralty Court, Bermuda, but returned to England after a year, leaving a deputy in charge. In 1806 appeared his *Odes and Epistles*, which included the *Canadian Boat Song*.

In 1807 the publication began of the *Irish Melodies*, with music by Sir John Stevenson, upon which Moore's fame largely rests. *Lalla Rookie*, another great success, followed, and then Moore spent some time in writing his *Life of Byron*, who had been one of his intimate friends. This was published in 1830. He also wrote biographies of Sheridan, 1825; and Lord Edward Fitzgerald, 1831. His later days were passed at Slopton, Wiltshire, and he died Feb. 25, 1852.



Moonwort, the two branches of frond

MOORFIELDS. London thoroughfare between Finsbury Pavement and Moor Lane, E.C., and opening N. out of Fore Street, its name is all that is left of an area once fenland and known as Finsbury Fields. Botblem hospital stood here from 1676 until its removal in 1815 to Lambeth. The old fields are covered by Finsbury Circus and Square.

MOORGATE STREET. London thoroughfare. Running N. from Lothbury to London Wall and Finsbury Pavement, it was named from a postern gate in the old city wall which opened into Moorfields. The gate was taken down in 1762. This street, with Finsbury Pavement, became Moorgate in 1922.

MOORING MAST. Device for anchoring an airship. It consists of a tall steel mast, to which an airship is fastened by the bow, enabling it to swing in any direction with the wind. Such masts are constructed with lifts to serve as means to hoard and load the airship. See Airship.

MOOR PARK. Name of two English parks. One is 1 m. from Rickmansworth, Hertfordshire; the other on the banks of the Wey, 2 m. from Farnham, Surrey. The first-named, enclosed about 1460, was bought by Lord Leverhulme, 1919, and turned into a residential district.

The house and land in Surrey was formerly known as Compton Hall, its name being altered to Moor Park, after the place in Hertfordshire, when bought by Sir William Temple about 1682. Here Jonathan Swift, when living there as Sir William's secretary, wrote *The Battle of the Books* and *Tale of a Tub*, and first met Esther Johnson (Stella).

MOORS. Name in popular usage for the Moslem population of mixed Berber and Arab descent in N.W. Africa. The Mauri of the Mauretanian kingdom of Roman writers were Berbers. The Arab irruption of the 8th century which led to the invasion of Spain resulted in some racial blending, and the subsequent return to Morocco of Hispanified Saracens (Moriscos) brought in an Andalusian element. The Arabic-speaking Moor is thus the resultant of many forces, social and ethnic. The name was extended by Portuguese adventurers to Arabian settlers in India. See Morocco; Spain.

Moorish architecture is the term applied to the Hispano-Moresque style developed by the Moorish conquerors of Spain. See Mahomedan Art and Architecture.

MOOSE (*Alces machlis*). Largest living member of the deer family, distinguished by its size, long pendant muzzle, and broadly palmated antlers. It occurs under the name of elk in Europe; but the name moose is restricted to the American variety, which ranges N. of the Ohio River to the borders of the Arctic regions. Alaska is now its chief home. A fine male stands nearly 7 ft. high, and weighs over 1,000 lb. In the summer it visits the swampy ground near lakes, but in winter resorts to the higher ground. Notwithstanding its great size and clumsy appearance, the moose travels at great speed and with curious noiselessness through the densest forests. It is mainly hunted for sport, but its flesh makes good venison, and its hide is converted into leather. See Deer; Elk.



Moose. Specimen of the great Alaskan moose Amer. Mus. Nat. Hist.

MOOSE JAW. City of Saskatchewan, Canada. It stands on Moose Jaw river, 400 m. W. of Winnipeg, and 398 from Calgary, and is served by the C.P. and C.N. Rlys. It is a railway and agricultural centre. Pop. 19,039.

MOOT. Literally a meeting, the word being akin to meet. It was used among the Anglo-Saxons for meetings of freemen, and so we hear of folkmoots, shiremoots, and the like, while Witanagemot is another compound. It survives here and there in English in the moot hall. See illus. under Aldeburgh.

MOPLA OR MAPPILLA. Mahomedan community, mostly in the Malabar district of the Madras prov., S. India. Numbering over a million, they nominally descend from 7th century Arab immigrants who married Dravidian women. In August, 1921, a serious rebellion of the Moplas broke out in Malabar state. The rebels destroyed railways and looted villages. Several towns, including Calicut, were invested and over 1,000 lives lost.

MOPSUS. In Greek legend, the name of two famous soothsayers. (1) The son of Manto, the daughter of Tiresias and Apollo. Having built the city of Mallos in Cilicia, together with Amphiloehus, a quarrel arose concerning the possession of it, in which both were slain. (2) One of the Lapithae. Son of Apollo and one of the nymphs, he took part in the voyage of the Argonauts, for whom he acted as seer.

MORALITY OR MORAL PLAY. Early form of the drama, which most probably developed out of the earlier mystery and miracle plays.

It is believed to have grown into popularity in the first half of the 15th century. The morality differed from the miracle play in that it was not concerned with the presenting of an established Biblical story with named characters, but was rather a play enforcing a moral truth or lesson by means of personified abstractions. Everyman, which allegorises life and death. Mankind, Youth, Lusty Juvenatus, Nature of the Four Elements, Hickscorner, and Magnificence, by Skelton, are notable examples. See Drama; Mystery.

MORAR. Loch or lake of Inverness-shire, Scotland. It is 12 m. long and 1 m. wide. In the W. of the county, its waters are carried to the sea by a short stream, the Morar. The district around is known as Morar.

MORATORIUM (Lat. mora, delay). Literally, postponement, a period in which no business engagements can be completed, or debts or other liabilities enforced. In times when a financial panic is feared, a government will sometimes declare a moratorium for a certain number of days, thus giving public confidence a chance to recover. On the outbreak of the Great War in August, 1914, a royal proclamation declared a moratorium of a month for all bills of exchange, while a Postponement of Payments Act gave the government power to declare a general moratorium if the occasion demanded.

MORAVIA. Central portion of the republic of Czechoslovakia, formerly a crown land of Austria. Physically it is separated from the

rest of the republic. Bohemia, on the W., is a plateau which slopes to the mouth of the Elbe (Labe) and away from Moravia; Slovakia, to the E., lies within the sweep of the Carpathians. The March (Morava) is the chief river, for the Oder and the Vistula merely begin within the province. A quarter of the country is forested. In the S. maize, fruit, and vines; in the centre, wheat, barley, and sugar beet; and in the N., rye, oats, flax, and potatoes are the staple agricultural products. Cattle, horses, goats, and merino sheep are numerous. Important towns are Brno (Brünn), Mährisch Ostrau, and Olmütz. The area is 8,616 sq. m. Pop. 2,840,167.

Early in the 17th century Moravia came under Hapsburg control. In 1849 it was separated from Bohemia, and made a separate province of Austria. In 1918 it became part of Czechoslovakia. See Czechoslovakia.

MORAVIANS OR MORAVIAN BRETHREN. Protestant sect, also known as the Unitas Fratrum or Bohemian Brethren. Its descent is claimed from a division of the Hussites at Prague about 1450. In 1722 a few families fled from Moravia to Saxony under the leadership of a carpenter named Christian David, and united with a Lutheran community at Berthelsdorf. The community definitely separated from Lutheranism in 1727, when the title Moravian Brethren was revived. The sect is said to number about 100,000 adherents; and it had in 1930 in the United Kingdom 42 congregations and 3,481 communicants. It has long been famed for its missionary zeal.

MORAY. Maritime co. of Scotland, also known as Elginshire. Its area is 477 sq. m., and it has a coastline of 33 m. on the Moray Firth. The co. is mountainous in the S., where are the Cromdale Hills, but becomes less so as the low district along the coast is approached. The chief rivers are the Spey, Findhorn, Lossie, and Divie, and there are several small lakes. There are valuable fisheries. The co. is served by the L.M.S. and L.N.E. Rlys. The chief places are Elgin, the co. town, Lossie mouth, Forres, Rothes, Burghead, and Grantown-on-Spey. In 1920 the name of the co. was formally changed from Elgin to Moray. There is an episcopal bishop of Moray. Pop. 41,558.

Moray was the name of one of the ancient provinces of Scotland. It included roughly the modern counties of Moray, Nairn, and Banff, and part of Inverness.

Moray Firth extends inland for nearly 40 m. and has a breadth from Tarbat Ness to Burghead of 16 m.

The earldom of Moray or Murray, one of the seven old Scottish earldoms, and dating from the 14th century, has been held since 1561 by the family of Stewart. The title passed from James Stewart, the first earl, to his daughter's husband, another James Stuart, and to his descendants until the present day. The earl's eldest son is known as Viscount Doune. Pron. Murry.

MORAY, JAMES STEWART, EARL OF (c. 1530-70) Scottish noble. An illegitimate son of James V, his mother was Margaret

Erskine. He became prominent in Scotland soon after the accession of his half-sister Mary to the throne. A supporter of the reformed



Earl of Moray,
Scottish noble

teaching, he joined the lords of the congregation in opposing the queen mother. For a time after Mary returned from France, Moray had great influence with her, but a breach came over the marriage with Darnley. Moray was exiled, and he was still away when, on Mary's abdication in 1567, he was chosen regent. He was responsible for her defeat at Langside, and he ruled the country, on the whole successfully, until shot as he rode through Linlithgow, Jan. 21, 1570.

MORDANT. Substance used in dyeing to fix the colouring matters in the fibre of textiles. Either before or after using the dye the fabric is saturated with the mordant, which acts by forming an insoluble compound within the fibres, rendering the colouring matter permanent as regards washing. There are two main classes of mordants: (1) basic, used where acid colouring principles are concerned; and (2) acid, employed for fixing basic colouring matters on cotton. The chief basic mordants are the metallic salts of aluminium, iron, tin, and chromium. See Dyes.

Mordecai. Character in the O.T. book of Esther. He discovered Haman's plot to exterminate the Jews. See Esther; Haman.

MORDEN. Urban district, with Merton, of Surrey. It is 10 miles from London, and has stations on the Southern Rly. and the City and South London tube. Pop. 24,829.

MORE, SIR ANTHONY (c. 1512-c. 1576). Dutch portrait painter. Anthonis More, also called Antonio Moro, was born at Utrecht, was a pupil of Jan van Scorel, and was influenced by Joost van Cleef. In 1552 he became court painter to Philip II of Spain. He was in England 1553-54, when he painted a portrait of Queen Mary and was knighted. He died at Antwerp. His chief works are Five Members of the Order of S. John of Jerusalem, 1541; Two Canons of Utrecht, 1544; Maximilian of Bohemia and Mary of Austria, 1552; and Sir T. Gresham, in the Nat. Portrait Gall., London.

MORE, HANNAH (1745-1833). British author. Born Feb. 2, 1745, at Stapleton, Gloucestershire, her first considerable work was a pastoral drama, The Search after Happiness, 1762. Coming to London in 1774, she became intimate with Garrick, Johnson, Burke, and other literary lights. Garrick produced two of her tragedies, Percy, 1777, and The Fatal Falsehood, 1779. She spent her later years in retirement at Cowslip Green, near Bristol, where she wrote Colebels in Search of a Wife, 1809. She died Sept. 7, 1833.

MORE, SIR THOMAS (1478-1535). English statesman and author. He was born in Milk Street, Cheapside, Feb. 7, 1478. In 1492-94 he was at Oxford, where, filled with enthusiasm for the new learning, he studied Greek, Latin, French, theology, and music, and began his lifelong friendship with John Colet. In London began his friendship with Erasmus, and in 1501 he was called to the bar. He became a bencher of Lincoln's Inn, 1509, and reader, 1511 and 1516. While an envoy in Flanders, 1515, he planned his fascinating Utopia, 1516.

Having been elected an M.P. in 1504, More was appointed speaker of the House of



Morayshire. Map of the maritime county of Scotland



Hannah More,
British author

Engraving by Heath

Commons in 1523, and staunchly defended the privilege of the House against Wolsey, whom he succeeded as lord chancellor in 1529. Conscience compelled him to resign the chancellorship in 1532, when Henry VIII claimed to be the one supreme head of the Church of England. Committed to the Tower, April 17, 1534, and indicted for high treason in Westminster Hall, July 1, 1535, he was executed on July 6, 1535. In addition to the Utopia, he is the reputed author of a



Sir Thomas More,
English statesman
After Holbein

Life of Richard III; he also wrote a tractate on The Four Last Things, and while imprisoned in the Tower his Dialogue of Comfort.

MOREA, THE (perhaps from Slav. more, the sea, or Gr. moron, mulberry, from its resemblance in shape to a mulberry leaf). Medieval and modern name for the Peloponnesus, the S. portion of Greece. See Greece.

MOREAU, JEAN VICTOR MARIE (1763-1813). French soldier. Born Aug. 11, 1763, at Morlaix, in 1790 he joined the revolutionary army and in 1793 was made a general. In 1797, suspected as a traitor, he lost his command, but in 1799 he was given a high position with the army in Italy, where he conducted a masterly retreat. In 1800 Moreau assisted Bonaparte to overthrow the Directory. He then led an army against the Austrians, ending a successful campaign with the victory at Hohenlinden. After this he was accused of plotting against Napoleon and was banished. In 1812 he joined the Allied service, and was mortally wounded at the battle of Dresden, Aug. 27, 1813. He died Sept. 2.

MORECAMBE. Borough and watering place of Lancashire. It stands on Morecambe Bay, 3 m. from Lancaster, on the L.M.S. Rly. The town has a fine promenade, and the attractions include bathing, sailing, boating, and fishing. In 1923 the urban district of Heysham was united with Morecambe. Pop. 22,478.

MOREE. Township of New South Wales, Australia. On the Gwydir river, it is 413 m. by rly. N.N.W. of Sydney. It has a state experimental farm. Pop. 3,100.

MOREL (*Morchella esculenta*). Edible fungus of the order Ascomycetes, a native of temperate regions. It has a short, white, tapering stem and a swollen head, whose surface is broken into a network of ribs enclosing deep polygonal pits, varying in colour from yellowish, through brown, to olive. Both stem and head are hollow. There are several allied species, equally good as food.

MORESNET. Village and dist. of Belgium. It is 4 m. S.W. of Aix-la-Chapelle, and contains rich zinc deposits, worked by a Belgian company. From 1816-1919 Moresnet was a neutral state, until 1841 under joint Belgian and Prussian administration, and from 1841 onwards under its own burgo-master and council, the inhabitants making choice of Belgian or German legal rights and military service. The village of Neutral-Moresnet, or Kalmis, was the centre of the state. In 1919 Moresnet was incorporated with Belgium. Pop. 3,000. Pron. Mor-ay-nay.

Moreton Bay. Harbour of Queensland. It measures 49 m. by 17 m., and is enclosed by the islands of Moreton and Stradbroke.

MORGAN, SM HENRY (c. 1635-88). Welsh buccaneer. He belonged to a Glamorganshire family, and, according to tradition, was kidnapped as a youth in Bristol, and sold in Barbados. Later he got to Jamaica, joined the

huccaneers, and rapidly rose to leadership. He took part in many daring exploits against the Spaniards in Panama, Cuba, and elsewhere. In 1672 he was sent back to England in disgrace, but won the favour of Charles II, was knighted, and returned to the West Indies as lieutenant-governor of Jamaica, where he died in Aug., 1688.

MORGAN, JOHN PIERPONT (1837-1913). American financier. Born at Hartford, Conn., April 17, 1837, he joined the banking firm of Duncan Sherman in 1857. From 1864-71 he was a partner in Dahney, Morgan & Co., and in the latter year of Drexel, Morgan—later known as J. P. Morgan & Co. Under him the firm carried through enormous transactions, in the railway, shipping, steel, and other industries. Morgan gave princely donations to Harvard, Yale, and other educational institutions, also to hospitals, churches, etc. In his day he was the world's greatest art collector, and owned priceless pictures, china, and books. He died in Rome, March 31, 1913.

His son, John Pierpont Morgan, Jr. (b. 1867), succeeded him as head of the firm, and inherited his art treasures and other wealth.

MORGANATIC MARRIAGE. Union of a member of a royal or princely family with one of lower rank. The marriage, which was usual in Europe, especially among Teutonic peoples, is binding and the children are legitimate; but they are debarred from succeeding to their father's titles and inheritance, and occupy a position assigned to them by the morganatic contract. In Great Britain morganatic marriage, as such, is not recognized.

MORGUE, THE. Building in Paris. It was situated behind Notre-Dame, and in it the corpses of unknown persons, mainly those recovered from the Seine, were exposed on marble slabs, pending identification. The building, which was erected in 1864, was pulled down in 1924, and a new mortuary erected on the river-side at the Quai de la Rapin. The site of the Morgue is now a public garden.

MORHANGE or **MÖRCHINGEN**. Town of Lorraine, France, until 1918 part of Germany. It is 20 m. S.E. of Metz, and has a 12th cent. church. Pop. 2,598.

Morhange gives its name to a battle fought between the French and Germans, Aug. 20-25, 1914. It ended in a French defeat, their armies being compelled to fall back on Nancy.

MORISCOS. Name given to the Moors in Spain after their conquest in 1492. After various measures of persecution and restriction of rights, they were finally expelled from Spain under Philip III in 1609-10, with the exception of those who had become Christians, and of the children under four, who were retained and baptized. See Moors.

MORLAND, GEORGE (1763-1804). British painter. Born in London, June 26, 1763, he exhibited many pictures at the R.A. from 1773 to 1804, and at the Society of Artists, 1777-82, almost wholly subjects of a domestic nature and country scenes with animals. He painted with great facility, but his loose mode of life involved him in constant financial difficulties, and he died in a sponging-house in London, Oct. 27, 1804. His masterpiece, The Inside of a Stable, painted in 1791, is in the National Gallery, London.



George Morland,
British painter

MORLEY. Borough and market town of Yorkshire (W.R.). It is 4 m. from Leeds, on the L.M.S. and L.N.E. Rlys. The industries include the manufacture of woollen goods. The earl of Oxford and Asquith was born here. Market day, Sat. Pop. 23,935.

MORLEY, CHRISTOPHER DARLINGTON (b. 1890). American author. Born at Haverford, Pennsylvania, May 5, 1890, he took up journalism in New York. As a novelist he began with The Eighth Sin, 1912, but his most popular book is probably Thunder on the Left 1915, which made his name known in Great Britain. In 1919 he published The Haunted Book Shop, and in 1924 One Act Plays. In 1928, Thunder on the Left, dramatised by Richard Pryce, was presented in London.

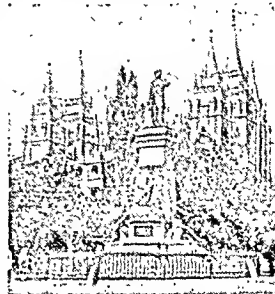
MORLEY, JOHN MORLEY, 1ST VISCOUNT (1838-1923). British statesman and man of letters. Born Dec. 28, 1838. Morley was called

to the bar but never practised. From 1867 to 1883 he was editor of The Fortnightly Review; from 1868-70 he edited The Morning Star, and from 1880-83. The Pall Mall Gazette, then a Liberal organ. Morley entered politics as M.P. for Newcastle-upon-Tyne in 1883. Three years later he was a member of the cabinet as chief secretary for Ireland, and he continued until 1914 to hold cabinet rank whenever the Liberals were in power, being again Irish secretary, 1892-95, secretary of state for India, 1905-10, and lord president of the council, 1910-14. From 1896-1908, when he was created Viscount Morley of Blackburn, he represented Montrose Burghs in Parliament.

Morley's first book, a study of Burke, had been published in 1867. In the 'seventies appeared volumes on several great literary Frenchmen, such as Voltaire, 1872, Rousseau, 1873, and Diderot, 1878. His essay, On Compromise, 1874, won for him a place among English philosophers. In 1881 he produced a Life of Cobden, and from 1895 he was engaged on the Life of Gladstone, published in 1903. In 1902 Andrew Carnegie presented to him the valuable library he had bought from Lord Acton's executors, and this Morley handed over to Cambridge, Acton's own university. He was one of the original holders of the Order of Merit. In 1917 he published a volume of Recollections. He died Sept. 23, 1923, when the title became extinct.

MORMONS. Usual designation of a religious sect founded in the United States under the title of The Church of Jesus Christ of Latter Day Saints. The origins of the Mormon religion are to be found in the life of Joseph Smith, upon whose alleged revelation their tenets are based. Having produced the Book of Mormon and communicated his revelations to his friends, in 1830 he formally organized the Church of which he was the presiding elder.

All this while missionaries had been busy in Europe, especially in England, and the stream of immigrants steadily increased. In the midst of this prosperity, however, Joseph



Mormon Temple at Salt Lake City;
in front, statue of Brigham Young



Lord Morley,
British statesman
Haines

Smith received his revelation on polygamy, 1843, which he declared was lawful for the saints. The indignation of the Gentiles, as the Mormons called their neighbours, was intense, and they resolved to drive the Mormons out by force. In the commotion which ensued Joseph Smith and his brother Hyrum, who were in gaol on a charge of treason, were dragged out and shot in 1844. Brigham Young was elected president.

In 1846, under Young's guidance, the whole Church began the migration westward, and in July, 1847, the first party reached the Great Salt Lake, Utah, near which they decided to build their city. Crops were planted, houses were built, another temple erected, and over all Brigham Young ruled with a rod of iron.

THE REORGANIZED MORMONS. After the death of Joseph Smith in 1844 a number of the Mormons established the Reorganized Church of Jesus Christ of Latter

Day Saints, 1851-52. Repudiating the later doctrines of polygamy and baptism for the dead, they held to the original tenets. Joseph Smith's eldest son, Joseph Smith, joined them and became their president. On his death in 1914 his son, Frederick M. Smith, succeeded. The headquarters are in Independence, Missouri, U.S.A.

MORNING GLORY (*Ipomoea purpurea*). Major convolvulus of the seedsmen. A twining, climbing herb of the order Convolvulaceae, it is a native of tropical America. The leaves are heart-shaped, alternate, the flowers large and funnel-shaped. See Convolvulus.

MORNINGTON. Village of co. Meath, Irish Free State. It stands on the Boyne, 2 m. from Drogheda. From it the family of Wesley, or Wellesley, to which the duke of Wellington belongs, took the title of earl.

Mornington is the name of the largest of the Wellesley Islands, Queensland. It is situated at the S. end of the gulf of Carpentaria. Another Mornington is a watering place of Victoria. A third is a suburb of Dunedin.

MOROCCO. Country of Africa. It lies W. of Algeria, with a coastline along the Mediterranean Sea and the Atlantic Ocean. It is divided into three parts, a French zone, a Spanish zone, and, round Tangier, an international zone. It is ruled by a sultan under the protection of France. The area of the whole country is 218,500 sq. m. Pop. 5,300,000.

The sultan's capitals are Fez, Marrakesh (q.v.), sometimes known as Morocco City, and Rabat. Rabat is the chief seat of government and contains the main residence of the resident-general. Tetuan is the capital of the Spanish zone.

Railways connect Marrakesh with Casablanca, Rabat, Meknes, Fez, and Ujda (Oudjda), beyond which a short extension of 9 m. makes a junction with the rly. system of Algeria. A line also connects Ceuta with Tetuan. Roads connect the large towns.

In the 19th century French penetration of the country led to the conference of Madrid in 1880, when the powers drew up a code defining the status and rights of foreigners. Spanish fears were pacified by the establishment of the Spanish zone, but Germany intervened in 1905 and prevented the acceptance by the sultan of the reforms proposed by France; this led to the Algeiras Conference, 1906, where the way for French control of Morocco was opened. In 1911 the German warship Panther appeared at Agadir and precipitated a crisis, as a consequence of which France purchased the right to protect Morocco by concessions of territory elsewhere.

The sultanate of Morocco was then an independent state. In 1912, however, the sultan accepted the protectorate of France, and by the Franco-Spanish treaty of the same year the country was divided into three areas with different administrations. Tangier and dist., about 140 sq. m. in area with 60,000 inhabitants, was made a special zone; the northern coast area, about 11,000 sq. m. in extent, became a Spanish zone, controlled by a Spanish high commissioner. The remainder was left to the sultan controlled by a French resident-general.

For some years there was a good deal of fighting in the Spanish zone, but in 1925 the French and Spaniards took concerted action to pacify the country. In 1926 the rebel leader Abdel Krim surrendered, and the war came to an end. In Nov., 1927, the sultan died and was succeeded by his son.

MORONI, GIAMBATTISTA (c. 1520-78). Italian painter. Born at Bondono, near Bergamo, he studied under Il Moretto at Brescia and was influenced by Lorenzo Lotto. He died at Bergamo, Feb. 5, 1578. His portraits attained a very high level and had some influence on Van Dyck. The most notable are the Portrait of a Tailor and the Portrait of a Lawyer, both in the National Gallery, London, which possess other examples of his work.

MORPETH. Borough and market town of Northumberland. It stands on the Wansbeck, 17 m. from Newcastle, and has a station on the L.N.E. Rly. The church of S. Mary dates from the 14th century, and the grammar school from the 16th. Of the castle only the gateway survives. There is a town hall, a gaol, and, in the main street, a clock tower. The industries include brewing, malting, and tanning, and the making of bricks and tiles, while in the neighbourhood are extensive collieries. It is a rly. junction. An important cattle fair is held. Market day, Wed. Pop. 7,580.

MORPHIA or **MORPHINE.** Alkaloid contained in opium, of which it is the active principle. It is used in medicine, and is also given to relieve pain or to induce sleep. The habit of taking morphia to relieve insomnia is a dangerous one, and excessive doses produce poisoning and death. Emetics, movement, and artificial respiration are serviceable antidotes to morphia poisoning. Under the Dangerous Drugs Act, 1920, the import and export of morphia were prohibited except under licence of the home office. See Opium.

MORPHOLOGY (Gr. *morphē*, form). Science of the form and structure of animals and plants. It is the corollary of physiology, which deals with habit and function. The term was first used by Goethe, in 1817. See Anatomy; Biology; Zoology.

MORPHY, PAUL CHARLES (1837-84). American chess player. Born in New Orleans, June 22, 1837, he became a lawyer, but before this he had made a reputation as a chess player. In 1857 he won the first prize at the American chess congress, and for the next two or three years he was in Europe. In 1864 he returned to the U.S.A., but his brain gave way, and he died July 10, 1884.

MORRIS, THOMAS (1821-1908). Scottish golfer. Born at St. Andrews, June 16, 1821, he began to play golf at six years of age. In 1851 he took over the links at Prestwick and superintended the laying out of this course. He won the Open Championship in 1861, 1862, 1864, and 1867. In 1863 he was made custodian of the Royal and Ancient Golf Club at St. Andrews. On the occasion of his 75th birthday a subscription was raised to buy him an annuity, which resulted in £1,250 being subscribed. He retired in Sept., 1903, and died May 24, 1908.

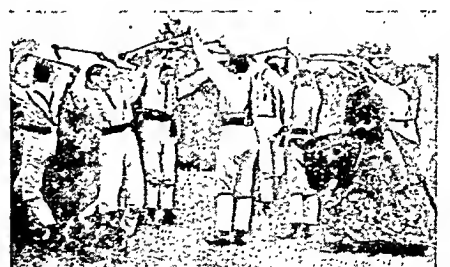
His son, Thomas Morris, junior, born at Prestwick 1851, won the open championship

belt outright by winning it thrice in succession, 1868-70, and won the open championship again in 1872. He died Dec. 25, 1875.

MORRIS, WILLIAM (1834-96). British poet. He was born March 24, 1834, at Walthamstow, and was educated at Marlborough College, from where he went to Exeter College, Oxford. Becoming possessed of an income of £900 a year on coming of age, Morris chose art as his career instead of the Church. After his literary venture, *The Oxford and Cambridge Magazine*, he came up to London and articulated himself to an architect. In April, 1859, Morris married Jane Burden, built a house at Bexley Heath and founded the firm of Morris & Co. for the provision of artistic furnishings for the home. There he remained until 1865, when he returned to London.

Morris was now able to devote his time to poetry, and composed his epic, *The Life and Death of Jason*, 1867, *The Earthly Paradise*, a series of tales from Greek and medieval sources, 1868-70, and *Love is Enough*, 1872, and was soon in the front rank of the great poets of his generation. In 1871 Morris, with Rossetti, took the old house called Kelmscott Manor House. In 1878 he went to live at Hammersmith Mall, and there he set up the Kelmscott Press. He died Oct. 3, 1896. Of Morris's prose romances, the best-known are *The Dream of John Ball*, 1888, and *News from Nowhere*, 1891.

MORRIS, SIR WILLIAM RICHARD (b. 1878). British manufacturer. Born and educated at Cowley, near Oxford, he started business in that city as a cycle repairer about 1900. Later, when motor cycles appeared, he turned his attention to them and opened a garage. In 1913 he designed his first motor car, and after the Great War began to make cars at Cowley. He soon built up an enormous business. He also controlled a number of associated concerns, and in 1926 turned his business, which employs about 15,000 workers, into a public company. In 1927 Morris bought the business of Wolseley Motors, Ltd., and in 1929 he was made a baronet. In 1929 he gave large sums of money to the hospital at Oxford.



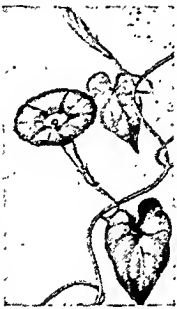
Morris Dance. Boy riding a hobby horse and a revival of the ancient sword dance

MORRIS DANCE (Span. *morisco*, Moorish). Popular dance. In Tudor times it was established in England as a festival dance, especially on May day. Stock characters figuring in the dance around the maypole were Maid Marian, frequently impersonated by a man, her paramour, her jester, Friar Tuck, a gentleman, clown, Bavarian or fool, hobby-horse, and foreigners, perhaps Moriscos or Moors. The music used for Morris dancing differs in various parts of England, and there seems to be a good deal of freedom in using old popular song tunes.

MORRISON, GEORGE ERNEST (1862-1920). British journalist. Born at Geelong, Victoria, he was educated at Melbourne University. In 1882 he shipped as an ordinary seaman to the South Sea Islands to investigate the traffic in



William Morris
British poet
Emery Walker



Morning Glory. Spray of foliage and flower

natives, writing a series of articles on this evil to *The Melbourne Age*. Then he journeyed to New Guinea. In 1897 Morrison proceeded to Peking as resident correspondent for *The Times*, and in 1900 took an active part in the defence of the legations during the Boxer rising. In 1907 and 1910 he made long journeys across China. In 1912 he became political adviser to the first president of the Chinese republic. He died at Sidmouth, May 30, 1920.

MORRISON, HENRI STANLEY (b. 1888). British politician. Born Jan. 3, 1888, he became a shop assistant, then a telephone operator, and later worked in a newspaper office. He soon became a prominent member of the Labour Party, and was elected to the London County Council for E. Woolwich. He became leader of the Labour Party there and secretary of the London Labour Party. In 1923-24 he was chosen M.P. for S. Hackney. In 1929, having lost his seat in 1924, Morrison was again elected M.P. for S. Hackney and was made minister of transport in the Labour Government. As such he was responsible for the important Road Act of 1930. In 1920-21 he was mayor of Hackney, and in 1928-29 chairman of the National Labour Party.

MORRISTON. River of Ross-shire and Inverness-shire, Scotland. It rises near Loch Cluny and falls into Loch Ness at Invermorriston in Inverness-shire. Its length is 19 m. Morriston is also the name of an industrial suburb of Swansea (q.v.). It has a station on the G.W. Rly.

MORROW, GEORGE (b. 1869). Irish artist and illustrator. Born in Belfast, he studied in that city, London, and Paris. He was principally known as a contributor to *Punch*, in which journal some of his most humorous skits on contemporary life appeared. He also worked for many other magazines in various veins of sentiment, and illustrated books of many types. In 1928 he published *Some More*.

MORSE, SAMUEL FINLEY BREESE (1791-1872). American inventor. Born April 27, 1791, he studied art in England, exhibiting at the R.A. in 1813. Two years later he returned to New York and settled down as a portrait painter.



S. F. B. Morse,
American inventor

Interested also in science, Morse experimented in the phenomena of electricity, and conceived the possibility of using it as a means of communication, with the result that in 1835 he produced a telegraph at New York university, half a mile in length. In 1843 Congress voted money for a line from Washington to Baltimore, and the following year the first telegraph message, reading: "What hath God wrought?" was dispatched from the capital, May 24, 1844. He died at New York, April 2, 1872.

MORSE CODE. System of signals for the telegraphic transmission of alphabetic letters, numerals, punctuation marks, and conventional phrases. The original code, devised in 1837 in collaboration with Alfred Vail, was introduced by S. F. B. Morse for use with his self-recording telegraph. A

revised code, issued in 1844, and now distinguished as the American Morse, is still in local use within the U.S.A. and Canada.

MORTAR. Ordinary mortar for brick building consists of freshly burnt lime and clean sharp sand or grit, without earthy matter, and mixed with clean water, in the proportions of one part of lime to three parts of sand or grit. For fine-jointed, ashlar masonry, mason's putty, formed of slaked lime and water, is often used. Cement mortar consists of one part Portland cement to two parts sand, or equal parts of cement and sand.

MORTAR. Smooth-bored and muzzle-loading cannon, designed to throw shot or shell short distances at high angles of elevation. The older mortars were made of thick metal, had very short barrels, and were mounted on strong frames called mortar beds. The range was altered by varying the charge. The term mortar came into use again in 1914, when the Germans used a 21 cm. piece (8.27 in.). They had also a 28 cm. (11.2 in.) piece which was called a mortar, though the correct designation of both weapons is howitzer (q.v.). The British used the Stokes gun, a type of trench mortar.

MORTGAGE. In English law, the creation in England of an interest which is to cease when a certain sum of money is paid on a certain date. When the owner of land wishes to borrow money on the security of his land, he usually does so by way of mortgage. The borrower (mortgagor) may either execute a deed charging his estate by way of legal mortgage, or may grant to the lender (mortgagee) a lease for a long term of years, with a provision that the lease shall cease when the money lent is repaid with interest. At common law, if he did not repay on the given date the mortgagee became the absolute owner of the property. But the court of equity interfered, and would, even after six months had elapsed, allow the borrower to repay the principal, interest, and costs, and compel the mortgagee to reconvey the property.

A mortgagee who wants his money must give three months' notice. If the money is not repaid, the mortgagee can either (1) sell the property and repay himself, handing over the balance to the mortgagor; or (2) foreclose, that is obtain an order from the court that unless the mortgagor pays up within a fixed time he shall lose all rights to redeem, so that the land, etc., becomes the absolute property of the mortgagee. See *Building Society*.

MORTLAKE. District of Surrey. It stands on the Thames, 1½ m. E. by N. of Richmond, with a station on the Southern Rly. The chief building is S. Mary's Church. A noted boating resort and the finishing point of the Oxford and Cambridge boat-race, Mortlake was at one time celebrated for its tapestries, a factory, said to be the first in England, having been set up here in 1616.

An enamelled delft and stoneware was manufactured at Mortlake between 1764 and 1820.

MORTMAIN (Fr. mort, dead; main, hand). Term used for land that cannot be alienated owing to the fact that it is in a dead hand.

paid the dues, the medieval equivalent of the modern death duties. Consequently, in 1279, a law called the statute of mortmain prohibited "any person whatsoever, religious or other, to buy or sell, or under colour of any gift, term, or other title, to receive from anyone any lands or tenements in such a way that such lands and tenements should come into mortmain." Under the Mortmain and Charitable Uses Act, 1888, no land or interest in land may be acquired by a corporation except under specific licence from the crown or by virtue of some statute.

MORTUARY. In the modern meaning of the word a place for the reception of dead bodies pending burial. In Great Britain and Ireland, under various Public Health Acts, local authorities can be required by the local government board to provide mortuaries where dead bodies can be received for purposes of identification, inquest, or post-mortem examination.

MOSAIC. Term applied (1) to the tessellated work in ancient Roman pavements, and (2) to classical and medieval decorations executed with inlaid cubes of various stones, metals, and glass. Mosaic was derived from Hellenistic art. Its principal use in Roman times was to imitate coloured woollen carpets spread on pavements. In the Constantinian period inlaid marbles of various sizes and fragments of marble and hard stone, put together so as to form a geometrical design, were largely employed for mural decoration. As the technique was enriched by the addition of glass and enamel, the art took the place of pictorial fresco decoration.

Fine interior mosaics of the 4th and 5th centuries are preserved in S. Maria Maggiore and the baptistry of S. John Lateran at Rome and in the churches of Ravenna. Those of S. Mark's, Venice, are notable. The remains of fine medieval mosaics are to be seen on the shrine of the Confessor, Westminster Abbey. In all Byzantine architecture (q.v.) mosaic is the recognized decoration for walls, ceilings, or pavements. The modern practice of it is somewhat restricted, though there are fine examples in the dome of S. Paul's Cathedral, and in the chapels of Westminster Cathedral.

MOSCHELES, FELIX STONE (1833-1917). British painter. Born in London, Feb. 8, 1833, he studied in Leipzig, Paris, and Antwerp, and then settled in London, where he enjoyed a wide reputation as a portrait painter. Among his subject-pictures were *Grief*, 1878; *Spanish Song*, 1879; *Little Mozart's own Choir*, 1882; and *The Isle's Enchantress*. Moscheles was well-known as an advocate of international arbitration. He died Dec. 20, 1917. He wrote two autobiographical works, *In Bohemia with Du Maurier*, and edited Mendelssohn's letters to his parents.

His father, Ignaz Moscheles, (1794-1870), born at Prague of Jewish parents, became famous as a piano teacher and pianist in London. In 1846 he settled in Leipzig as professor at the new conservatoire.

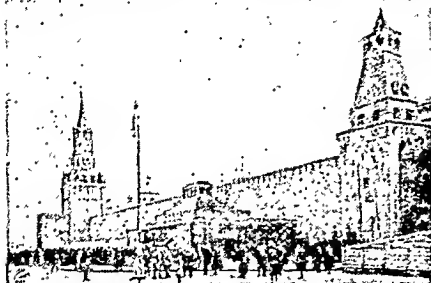
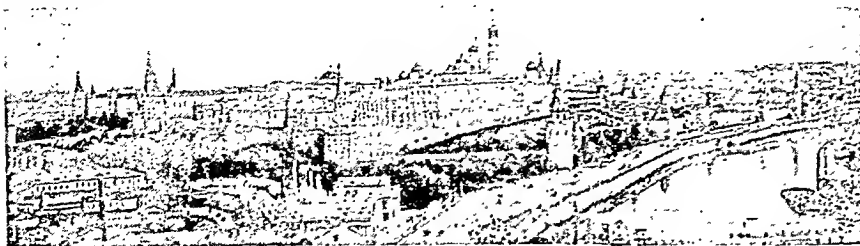
MOSCOW (Russ. Moskva). Ancient capital of Russia and crowning place of the tsars, now capital of the Russian Socialist Federated Soviet Republic. It lies on seven hills, 500-850 ft. in alt., on the river Moskva, 400 m. S.E. of Leningrad.

The city is irregularly built, and with its numerous domes and cupolas has a picturesque appearance. The Kremlin, or citadel, in the centre of the city, is the dominating feature. This ancient residence of the tsars—now the headquarters of the Soviet Government—with its five gates and 18 towers, built originally of wood, was one of the few places which escaped the great fire of 1812. The walls were erected by Ivan III. In the cathedral of the Assumption, or Uspenski cathedral, originally

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C	— — —	P	— — —	= (Break sign)
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Morse Code. Alphabet, numerals, and punctuation symbols used in the United Kingdom

In England in early times a great deal of land was given by the kings to religious corporations, the result being that the land in question never



Moscow. 1. The Kremlin from the south-west; in the centre is the great palace, with the walls of the Kremlin behind. 2. Lenin's tomb in Red Square

the burial place of the patriarchs, the tsars were crowned and proclaimed by the ringing of the great bell, Ivan Veliky, or Big John. The bellry was begun by Feodor Ivanovitch and completed by Boris Gudunov in 1600. The famous Tsar Kolokol, or king of bells, cast in 1735 and cracked in the foundry, stands on a pedestal opposite Ivan Veliky.

Moscow, which has been called the Holy City and Little Mother, is a city of churches, many of which are richly coloured and have gilded domes. The cathedral of the Archangel Michael was completed in 1508. The cathedral of the Annunciation has nine domes, each surmounted by a golden cross. The cathedral of S. Basil was begun by Ivan the Terrible in 1554 to commemorate the conquest of Kazan. It has 12 multicoloured domes.

After the revolution, 1917, many plants and factories closed down, but gradually industry and trade rallied. An important centre of rly. and water traffic, Moscow is the financial centre of Soviet Russia.

The city was built on the site of the Kremlin. It did not attain importance until 1325, when the metropolitan Peter made it the religious capital. It became the capital of the empire in the reign of Ivan III, 1462-1505, and so remained until 1703. In 1918 the Soviet government transferred the seat of government from Leningrad to Moscow. Pop. 2,025,947. See Kremlin.

MOSELLE or **MOSEL**. River of France and Germany. It rises in the S. Vosges, and flows in a N.W. direction into Lorraine. At Toul it turns N. and passes into Germany, following a winding course until it reaches the Rhine at Coblenz. Its length is 320 m. On its banks are Épinal, Metz, Pont-à-Mousson, Thionville, and Trèves.

Moselle, a delicate aromatic wine, is so called because it is made from grapes grown in the lower valley of the Moselle.

MOSES. Hebrew law-giver and leader of the Israelites from Egypt. Son of Amram, a Levite, and Jochebed, and younger brother of Miriam and Aaron, he was adopted by Pharaoh's daughter. According to the Biblical narrative (Exodus—Deut.), after slaying an Egyptian taskmaster who had ill-treated an Israelite, he fled to Midian. At Mt. Horeb he received a Divine command to return to Egypt, from which he later led the Israelites to the confines of Canaan, receiving the Decalogue from Jahveh, at Mt. Sinai. After glimpsing the Promised Land from Pisgah, he died at the age of 120 years, leaving two

sons, Gershom and Eliezer. By a late Jewish tradition, Moses was thought to be sole author of the Pentateuch, a work now usually regarded as the product of several compilers from older documents. See Aaron; Pentateuch.

MOSLEY, SIR OSWALD ERNALD (b. 1896). British politician. Born Nov. 16, 1896, he was a son of Sir Oswald Mosley, Bart. Educated at Winchester and Sandhurst, Mosley entered the 16th Lancers and served in France during the Great War. In 1918 he was elected Unionist M.P. for the Harrow division, and he retained the seat until 1924, when he joined the Labour party. In 1926 and 1929 he was chosen M.P. for Smethwick, and in 1928 he succeeded to the family baronetcy. In 1920 Mosley married a daughter of the Marquess Curzon, Lady Cynthia, who in 1929 was elected Labour M.P. for Stoke. In 1929 he was made chancellor of the duchy, but he resigned in May, 1930, because he disagreed with the Government's unemployment policy.

MOSQUE (Arabic, masjid). Mahomedan place of worship. Noteworthy examples are at Cairo, Mecca, Medina, Jerusalem, Damascus, and in various cities of India. In England there is a mosque at Woking, Surrey. Mosques generally have a central dome, minarets, and a court provided with a tank for ceremonial ablutions. Within is a pulpit, a lectern, a niche indicating the direction of Mecca, and carpets, but no seats. See Cairo; Damascus; Delhi; Ispahan; etc.

MOSQUITO (Span. little fly). Fly of the family Culicidae. Found in all hot and temperate climates, mosquitoes are one of the

position to be conveyed into the blood of a person attacked. Other species of mosquito are the vehicles of yellow fever and filariasis. Hence the battle with these diseases involves the destruction of the mosquito, best effected by destroying its breeding places. See Gnat; Insect; Malaria; Yellow Fever.

MOSQUITO COAST or **LA MOSQUITIA**. Maritime region of Central America. It embraces the E. corner of Honduras and the E. coast of Nicaragua, though the term is usually restricted to that part of the seaboard of Nicaragua between the rivers Wawa and Rama. The region, long a matter of diplomatic controversy, was incorporated in Nicaragua in 1894.

MOSS (Muscineae). One of the two classes of Bryophyta, the other class being the Hepaticae or liverworts. Like the Thallophytes (algae, fungi, diatoms, etc.), their structure is entirely cellular, there being neither vessels nor woody tissue, though they have conducting cells which to some extent serve the purpose of vessels. The stems are clothed with apparent leaves, though these are not homologous with the leaves of flowering plants. Mosses are reproduced by spores, contained in an urn-like capsule produced by a sexual process. We have thus an alternation of generations as in the ferns, but with the difference that the asexual generation (spore capsule) grows on the sexual. The sexual elements are contained in what are popularly styled the "flowers" of the moss—technically the perichaete. This is formed at the apex of the stem, and consists of more crowded whorls of "leaves" enclosing either the male or the female elements, or both in the same flower.

Mosses are ubiquitous, growing almost anywhere, even on the bare rock and the brick wall, preparing the way for higher vegetation by forming a humus of their dead bodies and the minute particles of organic matter which every tuft of moss collects from the air. See Bog Moss; Botany.

MOSSEL BAY. Seaport of Cape Province, South Africa. It lies 318 m. by rly. E. of Cape Town, almost midway between that city and Port Elizabeth. It is a port of call, has a large general and forwarding trade, and is a popular summer resort. White pop. 2,649.

MOSSLEY. Borough and market town of Lancashire. It stands on the Tame, 10 m. N.E. of Manchester, on the L.M.S. Rly. It is also served by the Huddersfield canal. The industries include cotton and woollen mills, also engineering works. Near are British remains known as Bucton Castle. Market day, Thurs. Pop. 12,705. Mossley Hill is a suburb of Liverpool, with a station on the L.M.S. Rly.

MOSUL. City of Iraq, capital of a vilayet of the same name. It stands on the Tigris, about 220 m. N. of Bagdad. Opposite it, on the E. side of the river, are the vast mounds which are the remains of Nineveh. It was once famous for its muslin, the name being derived from that of the town. Before and during the Great War Mosul was the headquarters of a Turkish army corps, and after the armistice was occupied by the British. Pop. 60,000.

The claim of Turkey to the vilayet of Mosul was the subject of a conference held at Constantinople in May-June, 1924, between Great Britain and Turkey. This conference proved abortive, and the question was referred to the League of Nations, which decided that Mosul should be part of Iraq, and in 1926 the boundary was fixed accordingly. A neutral zone was established for 50 miles on each side. See Mesopotamia.

MOTH. Popular name for an insect of the second division (Heterocera) of the order Lepidoptera; the first division (Rhopalocera)



Mosquito. Stages in development. 1. Egg-rafts and half-grown mosquito larvae diving. 2. Full-grown larva breathing at surface of water. 3. Pupa emerging from water. 4. Mosquito fully emerged and in readiness for flight.

voist pests of the tropics. Great Britain possesses about 20 species, usually called gnats, some of which attack man as vigorously as their tropical relatives. The larval stage is passed in the water. All the family are provided with horny boring apparatus, but it is only the female that sucks blood. One genus, Anopheles, is the vehicle of malaria. The malarial parasite is conveyed to the female gnat when she sucks the blood of an infected person. After undergoing various stages of development the parasite finds its way to the salivary glands of the insect and is then in a

consisting of the butterflies. There is no real distinction between the two divisions, and the separation of the two groups is more convenient for purposes of classification than scientifically correct. Structurally, moths agree with butterflies, and the development of the individual exhibits the same four well-marked stages of egg, caterpillar (see illus. p. 373), chrysalis (see illus. p. 409), and winged adult. All butterflies are active in sunshine, and most moths fly either at twilight (crepuscular) or during the hours of darkness (nocturnal); but there is no strict uniformity.

There are two features in which moths differ from butterflies; in the latter the antennae have knobbed tips; but in most moths the antennae are either thread-like or feathered. A butterfly's wings all work independently, but in the majority of moths the fore and hind wings are united in flight by a bristle on the hind wing fitting into a catch on the fore wing. In the matter of size there is great diversity, for the atlas moth of India may be only a fraction less than a foot across the outspread wings, whilst large numbers are smaller than the tiny clothes moth. See Butterfly, Clearwing Moth; Eggar Moth; Emperor Moth; Goat Moth; Ghost Moth; Hawk Moth; Insect.

MOTHER-OF-PEARL. Inner coating of shells of many bivalve molluscs, including pearl oysters. It possesses some resemblance to pearls, and has much the same composition. Mother-of-pearl is largely used in thin sheets to decorate articles of ornament and for the toilet, knife handles, and jewelry. See Pearl.

MOTHER OF THOUSANDS. Popular name applied equally to *Saxifraga sarmientosa* and *Linaria cymbalaria*. The first named, also known as creeping sailor and wandering Jew, is a native of China and Japan, with roundish, lobed leaves. *Linaria cymbalaria* is a much smaller plant, native of Europe, rooting in the crevices of rocks and old walls.

MOTHERWELL. Burgh, with Wishaw, of Lanarkshire, Scotland. The two burghs were amalgamated in 1920. Motherwell lies near the river Clyde, 13 m. from Glasgow on the L.M.S. Rly. It owes its growth to its situation on the great coalfield; in addition to the collieries there are engineering works. Pop. 66,213.

MOTHERWORT (*Leonurus cardiaca*). Perennial herb of the order Labiatae. A native of Europe and N and W Asia, it has a stout root-stock and erect, four-angled, leafy stems. The opposite leaves are deeply cut into five or seven lobes, and the rosy-pink flowers are arranged in a series of whorls.

MOTION (Lat. *motio*). In mechanics, change of position of a body. It is governed by three laws first enunciated by Newton. They define the effect of external force on

the motions of bodies, and may be stated as follows: (1) Every body continues in its state of rest or of uniform motion in a straight line unless it is compelled by an impressed force to change that state. (2) Change of motion is proportional to the impressed force and takes place in the direction of the straight line in which the force acts. (3) To every action there is always an equal and opposite reaction. See Dynamics; Energy; Relativity.

MOTLEY, JOHN LOTHROP (1814-77). American historian. Born at Dorchester, Mass., April 15, 1814, he began his literary career with a novel, *Morton's Hope*, followed by articles in *The North American Review*, and by another novel, *Merry Mount*, 1849. In 1856 his *Rise of the Dutch Republic* appeared in London in three volumes, and at once made him famous. It was followed by the *History of the United Netherlands, 1860-68*. In 1861 he went to Vienna as ambassador, and from 1869-70 he was ambassador in London. He was in England when he died, May 29, 1877.

MOTOR. In machinery, a motor is a prime mover, e.g. a steam engine, electric motor, etc. In anatomy and physiology, the word is used as designating or pertaining to particular nerve fibres.

The modern electric motor is an inverted dynamo. Electric motors are of two main classes, those using direct, and those using alternating current; while they are also distinguished as shunt wound, series wound, and compound wound; single-phase, two-phase, and three-phase; open, partly closed, and enclosed. A third type, the motor generator or rotary transformer, is employed where it is necessary to change the current as originally generated by the dynamo, e.g. alternating into continuous, or to change one voltage into a different strength. See Dynamo.

MOTOR BOAT. Small vessel propelled by internal combustion engines or electric motors, as distinct from steam driven vessels. Small open pleasure boats of all kinds and lifeboats generally prefer four-stroke petrol engines, as these are ready for action at a moment's notice. Powers range from four h.p. for motor dinghies up to several hundred h.p. for racing craft. Light craft are propelled by an outboard petrol motor fixed at the stern. For decked-in boats, engines burning paraffin or heavy fuel oils are more used. Heavy fuel marine motors are being widely adopted for coasting vessels. The motor boat speed record is 98.76 m.p.h., achieved by Sir H. Segrave on June 13, 1930, when his boat capsize, Segrave receiving fatal injuries.

The name motor ship is given to a larger vessel equipped with internal combustion engines. In June, 1930, the White Star liner *Britannic*, one of the largest, sailed on her maiden voyage to New York. See Ship.

MOTOR CAR. The first self-propelled road vehicle was probably a primitive three-wheeled steam car built by Nicholas Cugnot in 1768-70. Richard Trevithick's steam vehicle travelled from Camborne to Plymouth in 1802, attaining 9 m. per hour on the level, and by 1836 the steam road carriage had become important enough to rouse the opposition of railway and stage coach companies.

With the invention of the petrol gas motor by Daimler in 1884 a new trend was given to the design of self-propelled road vehicles. In 1894 the editor of *Le Petit Journal* organized a motor race from Paris to Rouen, and although a steam car came in first, the chief prize went to a petrol-driven car. In a race held the following year the steam cars were hopelessly beaten. To-day the petrol engine is used by the majority of motor vehicles, though the steam engine is employed for many heavy wagons and lorries. A type of engine using heavy oil is being developed for motor cars, the ratio of weight to h.p., hitherto the chief drawback, having been reduced to a great extent.

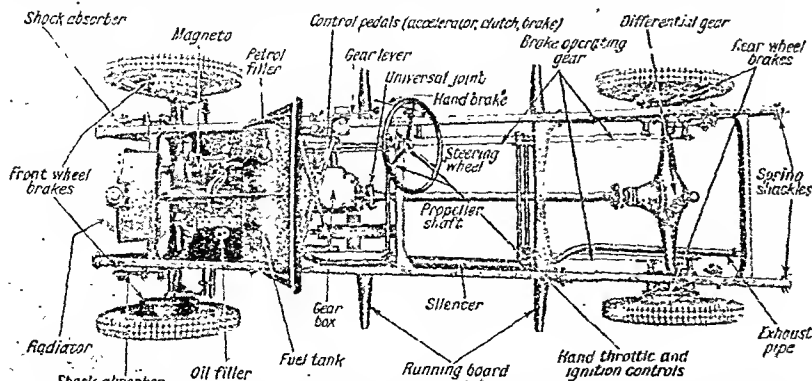
SPEED RECORDS. In 1907 S. F. Edge travelled 1,581 m. 1,310 yds. in 24 hrs. at Brooklands. Later, Mulford, at New York, increased the distance to 1,819 m. On March 11, 1929, at Daytona, Sir Henry Segrave covered a mile in 15.55 seconds, his speed being 231.36 m.p.h. On the same occasion he did the kilometre in 9.665 seconds, representing a speed of 231.44 m.p.h.

MECHANISM. The petrol car is made up of chassis and body. The chassis is a metal framework which supports the body, engine with its controls, wheels, axles, brakes, transmission gear, etc. The body varies according to the passenger accommodation and the requirements of the purchaser. The engine is attached to the front part of the frame, or to a sub-frame and is connected to the transmission gear by a friction clutch, operated by a pedal. A change speed gear box permits the gearing down of the engine to be varied, and enables the motion to be reversed. A self-acting gear box, fitted to many cars, enables the driver to pre-select the desired gear by moving a small lever on the steering wheel. When thereafter, a pedal is depressed the gear is shifted automatically. Automatic gear boxes are operated by the engine mechanically, or by a vacuum. The drive from gear box to road wheels is by chain in many commercial vehicles. In other vehicles the direct axle drive is more usual, the gear box shaft being connected with a long propeller shaft, which turns through a differential gear, the two live axles to which the driving wheels are keyed. The differential gear allows the wheels to revolve at different speeds when the car is on a curve.

The steering wheel is mounted on a column having at its lower end a worm which engages with a toothed quadrant. The latter turns a short shaft connected by levers with the front wheels. Two independent sets of brakes are fitted, generally a hand brake, controlled by a hand lever, and pedal-operated internal expanding brakes pressing on drums attached to the driving wheels. Four-wheel brakes are common, acting on all wheels simultaneously, generally through a servo-mechanism brought into operation by depressing a pedal.

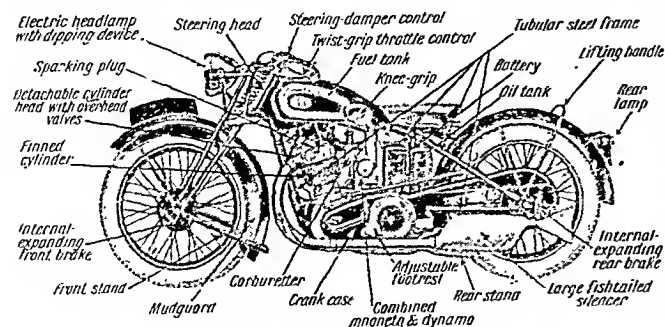
The petrol engine is dealt with in the article on the internal combustion engine. Electric cars are driven by motors connected to the road wheels through a propeller shaft and differential gear, or by motors mounted on the axles. Current for electric cars is supplied by storage batteries.

MOTOR CYCLE. Broadly defined as any power-driven two or three wheeled vehicle. The definition includes certain types of three-wheeled cars, but the motor cycle proper is a



Motor Car. Overhead view of typical modern light car chassis with the principal parts designated. Courtesy of "The Autocar"

two-wheeled power-driven vehicle, which may or may not have attached to it a sidecar for the carrying of passengers, etc. Nearly all such machines are driven by one, two, three or four cylinder internal combustion engines, the power being transmitted by means of a belt or chain, or the machine is shaft driven. In 1928 the number of motor cycles registered in Great Britain was 691,000.



Motor Cycle. Modern single cylinder machine with principal parts designated
Courtesy of "The Motor Cycle"

MOTOR LICENCE. Every motor vehicle must be provided with registration letters and numbers and carry a licence card. In motor cycles the card must be fixed in a prominent position on the near side of the machine or sidecar. In cars it may be placed on or within 2 inches of the windscreen, facing to the front, or else on the near side of the car facing to that side.

In the case of motor cycles the registration letters and numbers must be shown on plates displayed at front and rear of the machine, both plates being illuminated. By an order of the Ministry of Transport made in 1930, larger rear number plates became necessary. The letters and figures must be $2\frac{1}{2}$ inches high, occupy a space of $1\frac{1}{2}$ inches, and be distant $\frac{1}{8}$ inch from each other. On identification plates for motor cars the letters must be $3\frac{1}{2}$ inches high, and every part of every letter or figure must be $\frac{1}{8}$ inch broad. Only the rear plate of a car need be illuminated. The licence for motor cycles not exceeding 200 lb. in weight is £1 10s., and exceeding 200 lb., £3, with an extra fee of £1 for a sidecar or trailer. Motor drivers must have a driving licence, which costs 5s. The minimum age is 17, except for motor cyclists, when it is 16.

All private motor cars are taxed at a flat rate of £1 for every horse power, per annum with a minimum of £6, and electric cars at a fixed sum of £6. Commercial vehicles are taxed according to type. Motor coaches, motor omnibuses, and similar vehicles pay according to the seating accommodation. Vehicles used for carrying goods are charged according to their weight when unladen.

An important Act passed in 1930 made certain changes in the law about motor vehicles. Among these were the abolition of the speed limit, the infliction of severe penalties for dangerous and negligent driving, and compulsory insurance against third party risks.

MOTTRAM, RALPH HALE (b. 1883). British novelist. Born at Norwich, Oct. 30, 1883, he entered a bank there. In 1914 he joined the army and served on the western front until 1919. In 1924 he made his name known as the author of a novel dealing with the war called *The Spanish Farm*. This appeared in three parts, the second and third being *Sixty-four*, *Ninety-four*; and *The Crime at Vandelynden's*. Other novels followed: in 1927 *Our Mr Dorrner*; in 1928 *The English Miss*; in 1929 *The Boroughmonger*; and in 1930 *Europa's Beast*. In 1930 he wrote *A History of Financial Speculation*.

MOUFFLON OR **MOUFLOX** Species of European wild sheep, *Ovis Musimon*, found

only in Corsica and Sardinia. It is about 28 ins. high at the withers, and the wool of the upper parts is reddish brown, with white on the underparts. The curved horns in the male sometimes reach 3 ft. in length. The animals are found in flocks on the highest peaks of the hills, and are very difficult to approach.

MOULD (*Hyphomycetaceae*). Division of fungi consisting of small, mostly gregarious and superficial plants, either saprophytes or parasites. They form velvety patches on decaying animal or vegetable substances. The plants consist of delicate threads, a single row of cells placed end to end and ending in minute spores, which are always free and not enclosed in capsules. Many forms previously ranked as distinct species are now found to be developmental stages of higher fungi.

MOULDING. In architecture and joinery, the surface formed on any piece of stone, timber, or other material by casting or cutting according to a continuous pattern: by extension, the piece of material so moulded. The mouldings in Greek architecture have been elaborately classified as the ovolo, ogce, cyma recta, torus, scotia or trochilus, cavetto, astragal, and fillet or annulet. Roman and Renaissance forms of moulding were based on the Greek, and certain classic mouldings were adopted by the Gothic architects, who used mouldings of every description lavishly. Early English mouldings, which include the roll, fillet, and dog tooth, are generally of finer workmanship than those of later date. Perpendicular work is flatter and harder. See *Architecture*; *Beading*.

MOULIN ROUGE, LE (Fr. the red mill). Parisian place of amusement. Situated in the Boulevard de Clichy, it was opened Oct. 5, 1889, and destroyed by fire Feb. 28, 1915. It owes its name to the windmill above the entrance, the sails of which were illuminated by red lights. It was rebuilt after the Great War, and in 1929 it was converted into a cinema.

MOULMEIN OR **MAULMAIN.** Seaport of Burma. It is situated near the mouth of the Salween, sheltered by Bilu Island from the gulf of Martaban, but is rainy during the monsoon. It has connexion by rly. with Pegu and Rangoon, and exports large quantities of teak and rice. Pop. 61,301.

MOULTON, JOHN FLETCHER MOULTON, 1ST BARON (1844-1921). British lawyer and scientist. Born at Madeley, Nov. 18, 1844, the son of the Rev. J. F. Moulton, a Wesleyan minister, he went to Cambridge, where he was senior wrangler in 1868. Called to the bar in 1874, Moulton soon became known as an authority on patent law, and was made a Q.C. in 1885. He was Liberal M.P. for Clap-

ham in 1885-86, and from 1898-1906 for the Launceston division, retiring on being made a judge of the court of appeal in 1912. He was given a life peerage and made a lord of appeal. During the Great War he was chairman of the committee on high explosives. In 1919 he became chairman of the British Dye-stuffs Corporation. He died March 9, 1921. His life was written by his son, Hugh Fletcher Moulton (b. 1876). M.P. for Salisbury, 1923-24.



Mouflon. Ewe and lamb of the Corsican wild sheep

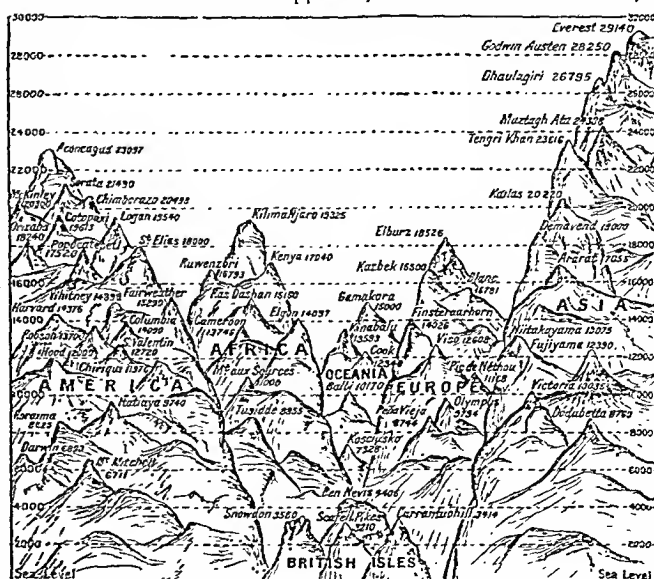
MOUND BIRD. Popular name for the megapodes. This is a family of game birds that deposit their eggs in mounds of decaying vegetable matter, where they are hatched by the combined heat of the sun and of the decomposition of their surroundings. There are about 15 species, found mainly in Australasia and the Pacific islands, of which the Brush turkey is a well-known example.

MOUNET-SULLY, JEAN (1841-1916) French actor. Born at Bergerac, Feb. 27, 1841, he made his first appearance as King Lear at the Odéon in 1868. Having served during the Franco-Prussian War, he reappeared in 1872 as Oreste in Racine's *Andromaque*, at the Comédie Française, where he remained the principal actor. He was regarded as one of the greatest tragedians of the 19th century. He died March 1, 1916.

His younger brother, Paul Mounet (d. 1922) was also an actor.

MOUNTAIN. Term used somewhat loosely to describe an elevated portion of the earth's crust. Altitude alone does not justify the application of the term to high ground, for an isolated elevation of less than 1,000 ft. frequently receives the designation, although it is usual to describe a ridge of this moderate elevation by the term hills. See *Alps*; *Andes*; *Himalaya*, etc.

MOUNTAIN, THE (Fr. La Montagne). Name given to one of the political parties that arose in France during the Revolution. They first appeared, an offshoot of the Jacobins, in



Mountain. Diagram illustrating relative heights of the world's chief mountains

the national convention, 1792, the name being due to the fact that, about 100 strong, they sat on benches raised above those occupied by other groups. Its members included Marat, Danton, and Robespierre. Their chief opponents were the Girondins, who were overthrown in 1793. The Mountain was responsible for the Reign of Terror. See French Revolution.

Mountain Ash. Alternative name for the small tree usually known as the rowan (q.v.).

MOUNTAIN ASH. Urban dist. of Glamorganshire. It is 18 m. from Cardiff, and stands on the Cynon, a tributary of the Taff. It is served by the G.W. Rly. The urban district includes several mining villages, among them Mountain Ash itself, Abercynon, and Cwmpennar, that became populous with the development of the coal mines in the 19th century. Pop. 43,292.

MOUNTAINEERING. Sport of climbing mountains. Early mountaineering expeditions were for the most part sporadic outbursts of individual enterprise, of which perhaps the most notable is a considerable ascent in the Moote Rosa region, because connected with the name of Leonardo da Vinci.

During the first fifty years of the 19th century several notable peaks had been conquered, and the ascent of Mt. Blanc became finally popularised by Albert Smith's ascent in 1851 and its advertisement. Then, with the climbing of the Wetterhorn by Alfred Wills, in 1854, came the birth of modern mountaineering, mountain climbing for the love of the sport. This was at first confined to the Alps, the Alpine Club being founded in 1857. From about 1870 mountaineering enterprise, aided by the spread of civilization and the increased facility of travel, has extended to the most remote of the world's high lands. Some of the most notable of these exploits have been: in Europe, the opening of a new playground in Norway, and several ascents in the Caucasus; in Asia, the exploration of the Karakoram range, and other Himalayan expeditions, notably the assaults on Mt. Everest in 1922 and 1924 and visits to the distant Altai: in America there have been numerous ascents in the Rockies from end to end, and also in the northern and southern Andes; in Africa, Kenya, Kilimanjaro, and Ruwenzori have been conquered, and excellent work has been accomplished in New Zealand and Japan. See Everest; Karakoram; etc.



Mountain laurel in full foliage

MOUNTAIN LAUREL (*Umbellularia californica*). Californian sassafras, or spice bush. A tall evergreen tree of the order Laurinaeae, and a native of California, its alternate, lance-shaped leaves emit a strong odour like camphor. The greenish-yellow flowers are clustered in umbels. The name mountain laurel is sometimes applied to *Kalmia latifolia*.

MOUNTBATTEN. Name taken in 1917 by the English members of the family of Battenberg, i.e. the descendants of Prince and Princess Henry of Battenberg, and of Prince Louis of Battenberg, created marquis of Milford Haven (q.v.). See Battenberg.

MOUNT GAMBIER. Town in S. Australia. It is situated near the Victorian border, 305 m. by rly. S.E. of Adelaide. Its volcanic soil makes it a rich grain producer. Pop. 3,952.

Mt. Gambier is an extinct volcano of which much of the original crater cone has collapsed, leaving its S. portion as the present summit. Valley, Blue, Crater, and Leg of Mutton lakes have formed with the hollows; Blue Lake, about 250 ft. deep, is at the foot of vertical cliffs 250 ft. high.

MOUNT GRACE. Ruin about 3½ m. from Northallerton, Yorkshire. It is the remains of a Carthusian priory, regarded as the most perfect of its kind in England. The priory was founded in 1397 and dissolved under Henry VIII.

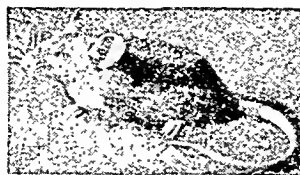
MOUNTJOY, CHARLES BLOUNT, 5TH BARON (1563-1606). English administrator. Son of James, 6th Baron Mountjoy, he was M.P. for Beeralston, Devonshire, in 1586, and took part in the campaigns in the Netherlands and Brittany, 1586-93. He succeeded the earl of Essex as lord deputy in Ireland, in 1599. He suppressed an insurrection in 1601, and after Elizabeth's death received the submisson of Tyrone. In April, 1603, he put down risings in Cork and the S.E. counties, leaving Ireland in the same year. He was then made earl of Devonshire. The circumstances of his marriage, in 1605, with Lady Penelope Rich, who had long been his mistress, caused considerable scandal. Mountjoy died in London, April 3, 1606.

MOUNT-MELLERAY. Trappist monastery in co. Waterford, Irish Free State. It lies on rising ground, 650 ft. above sea level, about 4 m. N. of Cappoquin, and was founded in 1830, the once wild and bleak mt. slopes having been converted into luxuriant woodland, fertile pastures, and vegetable gardens. The buildings include a chapel, a guest house, and schools. See Trappists.

MOUNTMELICK. Town of Leix (Queen's co.), Irish Free State. It stands on a small stream called the Owenass, with a station on the G. S. Rlys, 6 m. from Maryborough and 50 from Dublin. It is also served by the Grand Canal. It has a trade in agricultural produce. The Society of Friends established a school here in 1796. Pop. 2,279.

MOUNT MORGAN. Town in Queensland. It is 24 m. by rly. S.W. of Rockhampton, and is practically maintained by the mine of this name, which has produced a great deal of gold and copper. Pop. 4,500.

MOUNTS BAY. Inlet on the S. coast of Cornwall. It is a pilchard fishing station, and contains St. Michael's Mount. The bay measures 21 m. across, with Penzance on the W. shore. See Cornwall.



Mouse. 1. House mouse, *Mus musculus*. 2. Harvest mice, *Micromys minutus*. 3. Field mouse, *Mus sylvaticus*

MOUNTSOREL. Town of Leicestershire. It stands on the Soar, 4 m. from Loughborough and 7 from Leicester. The station is Sileby, on the L.M.S. Rly. In the vicinity are extensive granite quarries. The chief buildings are two churches. Pop. 2,596.

MOUNT STEPHEN, GEORGE STEPHEN, 1ST BARON (1829-1921). Canadian financier. Born June 5, 1829, son of William Stephen, of Drifftown, Banffshire, he emigrated to Canada in 1850, and became a cloth manufacturer at

Montreal, ultimately controlling other business undertakings, and becoming president of the St. Paul, Minneapolis and Manitoba Rly., and of the Bank of Montreal. About 1880 he began his association with his cousin, Donald Smith, afterwards Lord Strathcona, and the two carried to completion the C.P.R. Stephen was the first president of the line, resigning his post in 1888. In 1886 he was made a baronet, and in 1891 a baron. He died Nov. 30, 1921, when his title became extinct.



1st Baron Mount Stephen, Canadian financier Russell

MOUNT VERNON. Village of Virginia, U.S.A. Standing on the Potomac river, 15 m. S. of Washington, it was the home of George Washington.

The house in which he resided is a wooden two-storey building occupying an elevated position overlooking the river. It is now public property. A little distance away, on the edge of a wooded ravine, is the tomb containing the remains of George Washington.



Mount Vernon, Virginia. House in which George Washington lived

MOURNE. Mt. range of Northern Ireland. In the S. of co. Down, it extends for 40 m. in a S.W. to N.E. direction. Slieve Donard, the culminating summit, attains 2,796 ft.

MOUSA (Norse, moory isle). Uninhabited islet off the S.E. coast of Mainland, Shetland. Upon a rocky promontory facing the sound, 13 m. S. of Lerwick, stands a broch, the most perfectly preserved of the so-called Pictish towers of Scotland, and scheduled under the Ancient Monuments Protection Acts.

MOUSE. Name popularly applied to many small rodents, but correctly only to the smaller species of the genera *mus*, *apodemus*, and *micromys*. Three species occur in Great Britain, the house mouse, the harvest mouse, and the long-tailed field mouse. The first (*Mus musculus*) is brown in colour, with large ears and long tail, measuring altogether from 4 to 5 ins. in length. The harvest mouse (*Micromys minutus*) is confined in Britain to England and the S. and E. of Scotland. One of the smallest of British mammals and the only one with a prehensile tail, it is bright orange brown on the upper parts and white below. It constructs a nest among the stems of standing corn.



The long-tailed field mouse swarms in the fields, and is one of the most prolific of mammals. It resembles the house mouse, but has a longer tail. See Shrew; Vole.

MOUSEHOLD. Heath or open space, near Norwich. Within the city boundaries, it overlooks it on the N.E. Here in 1540 the insurgents, under Robert Ket, encamped. Cromie has immortalised it in several of his paintings, while it figures in Borrow's writings. The heath is public property.

MOUSTERIAN. Closing period of the lower palaeolithic age in Europe. After the Achenian period the climate varied—the bison, musk-ox, steppe horse, reindeer, and Arctic fox are found—and systematic cave life began. The institution of ceremonial burial identifies the race, especially at Châpelle-aux-Saints in Corrèze and Le Moustier in Dordogne, whence the name. Stations existed from Crayford in the Thames valley eastward to Asia Minor and the Nile valley. See p. 98.

MOVILLE. Town of co. Donegal, Irish Free State. It stands on the W. side of Lough Foyle, 19 m. from Londonderry. It is a port of call and is a pleasure resort. Pop. 941.

Another Moville is in co. Down, Northern Ireland, near Newtownards. Here are remains of the abbey founded by S. Finian.

MOWBRAY, BARON. English title dating from 1283. John, the 4th baron Mowbray, married a wealthy heiress, and their younger son, Thomas, who became the 6th baron, was made earl of Nottingham and duke of Norfolk in 1397. The male line of the Mowbrays died out in 1476, and the estates were divided between the Howards and the Berkeleys. The barony was then in abeyance until 1877, when it was revived for Albert John Stourton, baron Stourton. See Norfolk.

MOYNIHAN, BERKLEY GEORGE ANDREW MOYNIHAN, 1ST BARON (b. 1865). British surgeon. Born at Malta, Oct. 2, 1865, a son of Capt. Andrew Moynihan, V.C., he was educated at the Royal Naval School, and took his medical degrees at London University, studying medicine also at Leeds and Berlin. He practised in Leeds, where he was appointed professor of clinical surgery in the university. Knighted in 1912, he served throughout the Great War with the R.A.M.C., reaching the rank of major general. He has written books on surgery. In 1929 he was made a baron.



Lord Moynihan,
British surgeon
Russell

MOZAMBIQUE. Portuguese colony in East Africa, also known as Portuguese East Africa. It is bounded N by Tanganyika Territory, W. by Lake Nyasa, the Nyasaland Protectorate, Rhodesia and the Transvaal, S. by Natal, and E. by the Indian Ocean. The colony stretches along the coast from Cape Delgado to Delagoa Bay. In 1919 the so-called Kionga Triangle, S. of the Rovuma river, formerly part of German East Africa, was added to Mozambique. From the coastal swamps the land rises gradually to forested hills and the African plateau. Its area is 293,436 sq. m. Pop. 3,800,000.

The colony is divided into two sections—the prov. of Mozambique, administered by the State, and the territory of Manica and Sofala, under the control of the Mozambique Company.

The whole country is extremely rich in tropical products and mineral wealth, and is capable of great economic development. The products include sugar, cotton, copra, rubber, vegetable oils, wax, and ivory. Gold, copper, and silver are among the minerals found. Railway construction is being systematically developed. Among important lines are those from Lourenço Marques to the Transvaal, and from Beira to Rhodesia and the north. Commercial centres include Mozambique, Quilimane, Beira, the chief port and capital of the Mozambique Company's territory, Sofala, Inhambane, and Lourenço Marques.

MOZART, WOLFGANG AMADEUS (CHRYSOSTOM (1756-91). Austrian composer. Born at Salzburg, Jan. 27, 1756, Mozart early displayed musical powers of a remarkable character, and was taken by his father, Leopold Mozart, on several concert tours in Europe.

After his return to Salzburg in 1766 Mozart devoted himself largely to composition, his works including instrumental music, church music, and operas; he also made several short tours in Italy, where some of his operas were produced. For a time he was in the service of the archbishop of Salzburg, but in 1781 he settled in Vienna, where he married. Mozart's operas had already achieved considerable success, but the production of *Idomeneo* at Munich in 1781 definitely placed him in the front rank of opera composers. Then followed his greatest operas, *Le Nozze di Figaro*, 1786; *Don Giovanni*, 1787; and *Die Zauberflöte*, 1791. His last composition was the unfinished Requiem. He died in Vienna, Dec. 5, 1791.

Mozart's musical compositions number 624, and are distinguished by spontaneous and beautiful melodies.



W. A. C. Mozart,
Austrian composer
After J. Lange

MUCILAGE. Aqueous solution of gum. The word properly describes the sticky, viscous liquid rather than that which is clear and transparent. Tragacanth exuded from *Astragalus gummifer*, imported from Smyrna, is the thickest kind, absorbing 50 times its own weight in water when melting, but it is a weak adhesive, and is used chiefly in thickening colours for calico printing, for making pills and ointment, etc. Mucilage is a constituent of many trees and plants. It is also obtained from gluc, gelatin, and dextrin. See Gum.

MUCKROSS ABBEY (Irish, Mucros, peninsula of the pigs). Ruins of a monastery for conventional Franciscans founded in 1440 in co. Kerry, Irish Free State. On the site of an earlier building, and known also as Irrelagh, the abbey was occupied until 1589. It was several times restored, but finally destroyed in 1652. The ruins, with the adjacent house and park, were purchased in 1899 by Lord Ardilaun. See Killarney.

MUCOUS MEMBRANE. Membrane composed of epithelium on a basement layer. It contains mucous glands, and lines the cavities and canals of the body which communicate with the external surface, such as the alimentary canal and bladder. The secretions of mucous membranes are known as mucus.

MUDAR (*Calotropis gigantea*). Evergreen shrub of the order Asclepiadaceae, native of India. The large, opposite leaves are broad



Mudar. Leaves and flowers
of the evergreen shrub

and wedge-shaped. The handsome rose and purple flowers are clustered in umbels. A smaller species (*C. procera*), native of Persia, has white flowers, with a purple spot on each petal. Both plants yield an acrid, milky juice, used, as is the bark of the roots, as a remedy for skin diseases; the inner bark of the younger branches provides a valuable fibre.

MUD FISH. Popular name applied to several species of fish constituting the families ceratodontidae and lepidosirenidae. The name is also given to the sub-class dipneusti or d'pnoi. See Bowfin; Lepidosiren.

MUDIE, CHARLES EDWARD (1818-90). English bookseller. Born in Chelsea, Oct. 18, 1818, in 1840 he started in business as a bookseller in Southampton Row, Bloomsbury,

London, and did also a little publishing, but a development came when he began to lend books on business lines. The idea caught on, and in 1852 he moved Mudie's select library, as he called it, into New Oxford Street. He died Oct. 28, 1890. The business, soon known in every part of the land, became a limited company in 1864. In 1930 the headquarters were moved to Kingsway, London, W.C.

MUDROS. Town and bay on the coast of the Greek island of Lemnos, in the Aegean Sea. During the Great War its port became the chief naval base for the Dardanelles operations, and was used as a military base for the campaign in Gallipoli. The armistice between the Allies and Turkey was signed here, Oct. 30, 1918.

MUEZZIN (Arab. mu'adhhdin, one who calls to prayer). Official in a mosque who proclaims the times of prayer. In the Mahomedan day there are five times for prayer—dawn, noon, 4 p.m., sunset, and midnight. The call is sounded from the minaret. Appointed by the imam of the mosque, the muezzin is, by virtue of his office entitled to a place in Paradise.

MUGWORT (*Artemisia vulgaris*). Perennial herb of the order Compositae, native of Europe, Asia, and N. Africa. It has erect, reddish, grooved, and branching stems. The alternate broad leaves are deeply cut into long-pointed segments, and the lower surface is white and silky. The small reddish-yellow flower-buds form slender sprays.

MUGWUMP. Political nickname. Derived from an American Indian word meaning great chief, it is applied in the U.S.A. to independent voters who do not support the programme of any party.

MUIRKIRK. Parish of Ayrshire, Scotland. It stands on the river Ayr, 26 m. from Ayr, and is served by the L.N.S. Rly. The chief industries are coal and ironstone mining and iron works, to the development of which the place owes its growth. Pop. 4,726.

MUKDEN or **MOUKDEN**. City of China, capital of Manchuria and of Liau-tung (Sheng King) province. Mukden is the cradle of the Manchu dynasty, which reigned over China for 268 years. The circuit of the town walls is 10 m., with an inner wall of 3 m. containing the palace and government buildings. The town was opened to foreign trade by agreement with the U.S.A. in 1903. It is served by the Peking-Mukden Rly., and by the South Manchuria Rly. Pop. 250,000.

BATTLE OF MUKDEN. This took place between the Russians and the Japanese, Feb. 20-March 10, 1905. Strengthened by the army that had just captured Port Arthur, Oyama proceeded to execute his plan for breaking the Russian front, which stretched for 60 m. and was defended by 300,000 men.

On Feb. 27 Oyama began to develop his full plan. The Russians fought well, and the Japanese losses during some days of constant fighting were terribly high, but the danger to the Russian communications made a retreat inevitable. This took the form of a series of rearguard actions, and soon the Russians became demoralised. Mukden was evacuated by March 10, and battle and pursuit were soon over. The Russians lost 26,500 killed and 40,000 prisoners; the Japanese lost 41,000 killed and wounded.

MULATTO (Sp. mulato, young mule). Half-breed, especially the offspring—and their descendants—of parents whereof one is of white, the other of a negro race. The hair is usually negroid, the colour intermediate. The offspring of a mulatto and a white is a quadroon (one-fourth black); of a quadroon and a white an octoroon (one-eighth black). See Negro.

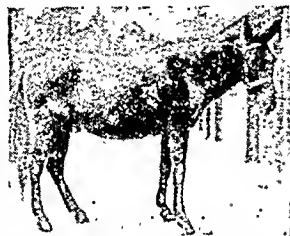
MULBERRY (*Morus*) Trees and shrubs of the order Moraceae, natives of the N. temperate regions. There are ten species, all



Mulberry, the fruit

having heart-shaped leaves with toothed edges and inconspicuous greenish-white unisexual flowers, produced in spikes and wind-fertilised. The compound fruit, somewhat similar in form to that of the raspberry, is due to the coalescence of all the fruits from a spike of female flowers. The black or common mulberry (*M. nigra*), a native of the Orient, was introduced to Britain in 1548, and the white mulberry (*M. alba*), a native of China, in 1596. Both are grown for the leaves, which are used for silkworm culture.

MULE. Name strictly applying to a hybrid between a male ass and a mare. All the various members of the horse family, including asses, zebras, and quaggas, will interbreed, and in its broad sense the term mule is applied to all the resulting offspring. Almost all these hybrids are sterile, but a few cases of fertility among them have been recorded. In order to secure size, mules are usually bred from the Poitou and Spanish jack-asses, which are of exceptional height and are kept almost exclusively for this purpose. Mules are useful animals for draught and pack work, especially in mountainous and difficult country, being much harder than horses. The name is also given to a machine used for spinning. It was invented by Samuel Crompton and improved by Richard Roberts.



Mule. Specimen bred from a Catalonian jack-ass and an English mare. W. S. Derridge, F.Z.S.

MULHOUSE (Ger. *Mülhausen*). Town of France, in Alsace. It stands on the Ill, 56 m. S.W. of Strasbourg, and is a centre of the cotton manufacture. There is also a trade in wine and timber, which are sent along the Ill to the Rhine. The town has a medieval town hall, but few other memorials of its long history. Made a free city in 1198, it was long a little republic leagued with Switzerland, but in 1797 it was united with France. From 1871 to 1918 it was German. The French entered it during the Great War, but were soon driven out. Just outside Mulhouse is a town for working men built by J. H. Dollfus. Pop. 99,892.

MULL. Island of the Inner Hebrides, in Argyllshire. It is 7 m. W. of Oban and separated from the mainland by the firth of Lorne and the Sound of Mull. It has a mountainous surface (Ben More, 3,169 ft.) and a rugged coast, fringed on the W. with smaller islands. Tobermory is the chief town. The area is about 367 sq. m. Pop. 3,389.

MULLAH or **MOLLAH**. Mahomedan term for a teacher or scholar, particularly one learned in civil and ecclesiastical law. It is also applied to a mosque officer, and in India is the usual term for a Mahomedan school-master. The influence and fanaticism of the so-called mad Mullahs have caused serious disturbances in India and Somaliland. The raids by the leader of the rebel dervishes in the latter country caused punitive expeditions to be undertaken by the British, 1901-5. See Somaliland.

MULLEIN (*Verbascum thapsus*). Biennial herb of the order Scrophulariaceae, native of Europe and N. and W. Asia. The first year it forms a cluster of large, oval, lance-shaped, very woolly leaves from 1 ft. to 18 ins. long. The second year a stout, woolly, leafy stem 3 ft. high is sent up, ending in a long spike of yellow flowers. Formerly the wool from leaves and stem was utilised for lamp wicks. The common mullein is sometimes called Aaron's rod (q.v.).

MULLET. Name applied generally to the numerous species comprised in two unrelated genera of marine food fishes. The red mullets (*Mullus*), of which there are about 40 species, are represented in Great Britain by the common red mullet of the markets. Grey mullets (*Mugil*) include about 70 species, of which three occur in the British seas. They are found largely in the brackish water of river estuaries, and are important food fishes.



Mullet. Specimen of Red Mullet, *mullus barbatus*

MULLINGAR. County town of co. Westmeath, Irish Free State. It stands on the Brosna river and the Royal Canal, 50 m. from Dublin. It has a station on the Gt. Southern Rlys., on which system it is a junction. The buildings include the Roman Catholic cathedral for the diocese of Meath and those erected for county business. There is a trade in agricultural produce and a few manufactures, while important horse and cattle fairs are held. Pop. 5,293.

MULLION. In architecture, the vertical division between the lights of a window. It originated with the reduction in width of the solid pier or piers between coupled lancet windows, and is mainly a development of late Gothic building. The traditional mullion of the 15th century is a splayed or moulded shaft, but with the spreading of Renaissance influences this gave place to a rectangular shaft scrolled with a floriated or arabesque design, as seen in the Tudor mullion. In pure Renaissance work the mullion disappears. See illus. under Gothic Architecture.

MULLION. Village of Cornwall. It stands on Mount's Bay, 5 m. from Lizard Head and 7 m. from Helston. It has an old church, S. Melan's, in which are some interesting carved bench ends. Mullion Cove, or Porthmullion, is a fine cove, which can be reached by road from Helston. Pop. 951.

MULREADY, **WILLIAM** (1786-1863). British painter. Born at Ennis, April 1, 1786, he came to London in 1792, and entered the R.A. schools in 1800. He painted mainly genre pictures in the style of the Dutch masters, but later developed a more personal manner. He died July 7, 1863. Mulready designed the first penny postage envelope, issued in 1840, and illustrated books for children.

MUMBLES. District of Glamorganshire, Wales. The name is applied to the watering place of Oystermouth and the surrounding district, on the W. shore of Swansea Bay. Mumbles Head juts into the western end of the bay. It includes two small islands, on one of which is a lighthouse.

MUMBO JUMBO. Name of a spirit worshipped by the Mandingos of W. Africa. In a wider sense the term is applied to any object of irrational superstition.

MUMMY (*mumiya*, Arab. *bitumen*). Dead body embalmed with preservative substances in preparation for burial. The earliest attempt at mummification yet found came from a Hind-dynasty tomb at Sakkara; the earliest mummy enswathed in bandages smeared with resinous paste from a Vth-dynasty tomb at Medum. In the course of

centuries other substances were employed, including bitumen, caustic soda, balsams, spices, honey, and drugs. By the XXist dynasty, after 1100 B.C., the process involved incision of the left flank with a flint knife for removing the viscera, extraction of the brain, usually through the nostrils with bronze hooks, and stuffing of the cavities with packing materials. Each limb and digit was separately swathed in mummy-cloth, consisting of linen bandages sometimes fringed, and often inscribed. An outer sheet 8 ft. by 4 ft. lay over all. Mummification was applied also to sacred animals. In 1881 and 1898 there were recovered at Thebes hoards of royal mummies.

MUMPS or **EPIDEMIC PAROTITIS**. Acute infectious disease. The micro-organism responsible has not yet been isolated. It is most frequent in childhood and adolescence. The incubation period is from two to three weeks.

The onset is marked by fever, pain is felt below the ear, and within 48 hours there is marked swelling of the neck and cheek. After a week or ten days the swelling subsides and recovery is rapid, but risk remains of conveying the disease to others for several weeks longer. Treatment consists in keeping the patient in bed with light diet and attention to the bowels. Pain may be relieved by applying compresses.

MUNCHAUSEN or **MÜNCHHAUSEN**, **KARL FRIEDRICH HIERONYMUS, BARON VON** (1720-97). German adventurer. Born at Bodenwerder, in Hanover, May 11, 1720, he was engaged as a cavalry officer in Russian campaigns against the Turks, and died Feb. 22, 1797. A collection of the stories attributed to him was first published in English under the title of Baron Munchausen's Narrative of his Marvellous Travels and Campaigns in Russia, 1785. Later editions contain matter stolen from Lucian's True History and stories designed to ridicule Montgolfier's balloon ascents, Bruce's African explorations, and other events.

Mundesley. Watering place of Norfolk. It is 7 m. from Cromer, with a station on the L.M.S. and L.N.E. joint rly. Pop. 1,161.

Mungo (c. 518-603). Scottish saint, also known as S. Kentigern (q.v.). It comes from two Gaelic words meaning dear one.

MUNICH (Ger. *München*, from Lat. *Forum monachorum*, monks' market). City of Bavaria, capital of the republic. It stands on an elevated plain on the Isar, 25 m. N. of the Bavarian Alps. Brewing is the chief industry. There are iron foundries and machine shops, and manufactures of agricultural implements, leather ware, rubber goods, chemicals, and dyes and colours. Other industries are mainly in the applied arts.



Mummy. Embalmed bodies of adult and child, about 3,000 years old, from an Egyptian rock tomb

Among the numerous open spaces are the English Garden, the Königsplatz, and the Maximiliansplatz. The church of S. Peter dates from the 12th century. The cathedral, built 1468-88, is a Gothic building of brick with a lofty vaulted roof and twin towers

crowned by wooden cupolas, 318 ft. high. It contains a monument, erected in 1622, to the emperor Louis the Bavarian. Other notable churches are S. Michael's, 1583-97, and the basilica of S. Boniface, 1850.

The old town hall of the 14th century contains a fine hall; near is the new town hall, a large Gothic pile. Other important buildings are the courts of justice; the university, removed from Landshut in 1826; the national library, containing over 1,100,000 volumes and a rich collection of MSS.; and the national theatre. There is a technical high school.

Its rich art collections are the glory

of Munich. The Glyptothek or sculpture gallery contains the restored pediment groups from the temple of Aegina, the Apollo of Tenea, the Barberini Faun, and much Egyptian, Greek, Roman, and modern sculpture. The old

picture gallery is rich in Dutch and Flemish masters, especially Rubens. The new picture gallery and the Schack gallery contain collections of modern paintings. The Bavarian national museum is a storehouse of the arts of Germany from prehistoric to modern times. Pop. 680,704. See Bavaria; Eisner, Kurt; also illus. p. 23.

MUNITIONS, MINISTRY OF. British government department. It was established June 9, 1915, to expedite and control the production of munitions of war. It continued in existence until Mar. 31, 1921. The minister—the first appointed being D. Lloyd George—ranked as a secretary of state, was a member of the cabinet, and received a salary of £5,000.

MUNKACSY, MICHAEL (1844-1900). Hungarian painter. Born at Munkacsvo, his real name was Lieb, and his youth was spent in extreme poverty. He studied at the Art Society in Pest and later made his way to Vienna, Munich, and Düsseldorf, where he painted *The Last Days of a Condemned Prisoner*, which was greatly admired. In 1872 he settled in Paris, where his picture *Milton dictating Paradise Lost* won a medal in 1878. After a brilliant career he became insane and died at Emdenich, Germany, May 1, 1900. He is best known for his immense religious pictures, *Christ before Pilate*, and the *Crucifixion*, sold for more than £30,000 each, and by his *Eccc Homo*. Pron. Moonkachy.

MUNNINGS, ALFRED JOHN (b. 1878). British painter. Born in Suffolk, Oct. 8, 1878, he was educated at Framlingham College and then studied art at the Art School, Norwich, and in Paris. In 1898 he first exhibited at the Academy, and soon made a reputation as a painter of horses. Of his pictures *Epsom Downs: City and Suburban Day*, is in the Tate Gallery. Changing Horses received the gold medal of the Paris Salon. During the Great War Munnings was attached to the Canadian cavalry. He was elected A.R.A. in 1919 and R.A. in 1925.

MUNRO, NEIL (b. 1864). Scottish novelist. Born at Inveraray, June 3, 1864, he engaged in journalism, and attracted wide attention by his stories, *The Lost Pibroch*, 1896. Among his other tales and novels, which deal for the most part with Scottish life, especially in the West Highlands, are *John Splendid*, 1898; *Gilian, the Dreamer*, 1899; *Doom Castle*, 1901;

The Daft Days, 1907; *Fancy Farm*, 1910; and *The New Road*, 1914, a tale of General Wade's men after the '45. He became editor of *The Glasgow Evening News* in 1918.



Munich. Bavarian National Museum. Above, the Town Hall, built in Gothic style

dependent kings existed until the 12th century.

The Royal Munster Fusiliers, numbered the 101st and 104th of the line, was a regiment of the British army until disbanded in 1922. It originated in India, as a force in the service of the E. India Co.

MÜNSTER. Town of Westphalia, Prussia. It is 78 m. N.N.E. of Cologne on the Aa and the Dortmund-Ems canal. The 13th century cathedral, the 14th century Gothic churches of S. Lambert and Our Lady, and the 12th to 14th century church of S. Ludger are among the chief ecclesiastical buildings. The peace of Westphalia was signed in 1648 in the Friedenssaal (peace chamber) in the 14th century Gothic town hall. The castle was formerly the residence of the prince bishop. The town has some quaint gabled houses. The university was reorganized in 1902. Pop. 106,418.

MURANO. Island and town in the Venetian lagoon, Italy. It is 1½ m. N.E. of Venice, forming a suburb of that city. The island, 5 m. in circuit, once thickly populated, is now largely occupied by vineyards. It has a cathedral with richly inlaid pavement, and other churches with valuable pictures. The museum is rich in examples of glass work, for which Murano has been celebrated from the 13th century. Pop. 6,000.

MURAT, JOACHIM (1767-1815). French soldier. Born March 25, 1767, son of an innkeeper, he became a soldier in 1787. In 1795 he attracted the attention of Napoleon. Accompanying Napoleon to Italy and then to Egypt, he distinguished himself at the battle of the Pyramids, 1798, and was given command of the cavalry in the Syrian campaign, being largely responsible for the victory of Abukir. Returning to France, he was active in promoting the consulate, and in 1800 married Caroline Bonaparte, the consul's youngest sister.

During the next few years he saw much active service under Napoleon. In 1808 Murat was sent to Spain, but after two months was made king of Naples. He was given command of the cavalry in the campaign of 1812, where he took part in every action of importance. On Napoleon's escape from Elba he offered his service to his old master, and declared war on Austria. Marching N., he was severely defeated, and he fled to Naples, and thence to Cannes, where he organized an expedition against the Bourbons. With 200 men he landed in Calabria, at Pizzo, where he himself was taken prisoner. He was tried by court martial, and on Oct. 13, 1815, was shot.

MURCHISON. River of Western Australia. It rises in the Carnarvon Range and flows S.W.

to Cantheaume Bay. It gives its name to a goldfield and to a county.

MURCHISON, SIR RODERICK IMPEY (1792-1871). British geologist. Born at Tarradale, Ross-shire, Feb. 19, 1792, he entered the army and served in the Peninsular War. In 1826 he was elected F.R.S., and he carried out a number of geological tours. He re-classified the Palaeozoic rocks, and in 1835 suggested the name Silurian. In 1838 he published his famous work *The Silurian System*. In 1855 he was appointed director-general of geological survey, and was president of the Geographical Society for many years. He was knighted in 1846, made a K.C.B. in 1863, and a baronet in 1866. He died Oct. 22, 1871.

MURCIA (Arab. Medinat Mursiya). City of Spain, capital of the prov. of Murcia. It stands on the Segura river, 25 m. W. of the Mediterranean and 50 m. by rly. N.N.W. of Cartagena. In the centre of the beautiful Huerta (garden) of Murcia, the older parts are crowded, but the new are well built, with fine streets, avenues and squares. The cathedral dates from 1388. The bishop's palace is notable. Murcia is the seat of a university. Pop. 154,705. For a short time (1223-43) there was a Moorish kingdom of Murcia.

MURDER. In English law, the unlawful killing of any human being, with malice aforethought, either express or implied. Unlawful killing means killing without legal justification, as, for example, is possessed by a person who slays someone who is trying to kill him: by the public executioner: by a constable who slays a rioter.

Further, there is what is sometimes popularly called constructive murder, which happens when a man who has no intention to kill does kill when he is in process of doing another felonious act. Death must take place within a year and a day of the wounding for a murder charge to be brought in England. By English law the judge who tries an alleged murderer must, if there is a conviction, pronounce the legal sentence of death. See Homicide; Manslaughter.

MURGER, HENRI (1822-61). French novelist. Born in Paris, March 24, 1822, he was of German origin. In his youth he passed from one occupation to another, including journalism, until he became famous in 1848 with his *Scènes de la Vie de Bohème*. In this he describes with rich humour and poignant pathos the literary and artistic underworld of Paris, in which much of his own life was spent. He contributed to the *Revue des deux Mondes* and wrote other novels, including *Les Buveurs d'Eau* and *Le Sabot Rouge*, also poems and plays. His *Vie de Bohème* was dramatised with success. He died Jan. 28 1861.

MURILLO, BARTOLOMÉ ESTEBAN (1617-82). Spanish painter. Born at Seville, Dec. 31, 1617, he was related to the painter Juan del Castillo, to whose care and instruction he was committed. On Castillo's removal to Cadiz, Murillo was compelled to join the numerous street artists who hawked their wares at the weekly fair in Seville. Having obtained a little money, he went to Madrid, where he was kindly received by Velasquez. Having returned to Seville, he was commissioned by the friars of the Franciscan convent to paint a series of 11 pictures for their cloister, and began this work in 1646. A series of paintings esteemed among his most celebrated works was begun in 1671 for the church of the Hospital of La Caridad; and three years later he began a famous series



Joachim Murat, French soldier. After Gérard



B. E. Murillo, Spanish painter. Self-portrait in Earl Spencer's collection

for the Franciscan convent outside Seville. He died at Seville, April 3, 1682.

Murillo excelled in genre, and his realistic scenes from low life are preferred by many to his religious pictures, which are sometimes spoilt by false sentiment and lack of dignity. There are examples in the National Gallery, the Dulwich Gallery, and the Wallace Collection. See illus. p. 84.

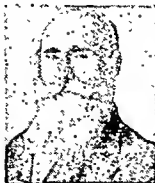
MURMAN. Name of the N. coast of the Kola Peninsula. It stretches from the Kola Inlet, on the N.W., to the W. side of the mouth of the White Sea, Arctic Ocean, on the S.E., and is about 200 m. in length. The town of Murmansk, at the head of the Kola Inlet, came into existence in 1915 as the Arctic terminus of the Murman Rly., which reaches the Leningrad-Vologda Rly. about 75 m. E. of Leningrad. See Kola.

During the Great War the Allies and America determined in the spring of 1918 to protect and occupy part of the Murman Rly. Accordingly in Feb.-March, 1918, the British effected a naval landing at Murmansk, and at Pechenga, about 100 m. farther W. But it was not till June that British, French, and American troops, in considerable numbers, occupied the port of Murmansk and the adjacent country, including Alexandrovsk. During 1919 the Bolsheviks were repeatedly defeated. Having achieved its object, the British force was withdrawn from the Murman area towards the end of that year. See Archangel.

MURRAY. River of Australia. It rises in the Australian Alps and forms the boundary between New South Wales and Victoria for 1,200 of its total length of 1,250 m. It flows into S. Australia, debouching through the shallow Lake Alexandrina. The river Murray irrigation scheme supplies an area of about 400,000 acres. A weir at Torrumbarry raises the summer level of the river by 16 feet. The Hume reservoir, under construction at the junction of the Murray and Mitta rivers, will provide a total storage capacity of 2,000,000 acre-feet.

MURRAY, GEORGE GILBERT AIMÉ (b. 1806). British scholar. Born at Sydney, N.S.W., Jan. 2, 1806, in 1838 he became fellow of New College, Oxford. He was professor of Greek at Glasgow 1889-99, and in 1908 became regius professor of Greek at Oxford. Author of a History of Ancient Greek Literature, 1897; and Four Stages in Greek Religion, 1912, he is best known by his verse translations of Greek plays, produced for the most part at the Court Theatre, London, 1902-7. He is also a keen liberal and an advocate of the League of Nations. He wrote Liberalism and the Empire, 1900.

MURRAY, SIR JAMES AUGUSTUS HENRY (1837-1915). British lexicographer. Born at Denholm, Roxburghshire, he was a master at Mill Hill School 1870-85. Murray undertook the preparation of a dictionary on historical principles, founded mainly on the materials collected by the Philological Society, as stated on the title-page of the first volume, published in 1888. The work was begun at Mill Hill, but was continued at Oxford, where the Clarendon Press undertook its publication. He was knighted in 1908, and died at Oxford, July 26, 1915. In 1928 the completion of the Dictionary was celebrated. Consult Memoir, H. Bradley, 1919.



Sir J. A. H. Murray,
British lexicographer
Elliott & Fry

MURRAY, JOHN. Name of a firm of British publishers. It was established at 32, Fleet Street, London, in 1768, by John Mac-Murray (1745-93), who dropped his prefix. His son, John Murray II (1778-1843), was London agent for Constable, started The Quarterly

Review in 1809, transferred the business in 1812 to 50 and 50a, Albemarle Street, and published for Byron, Borrow, Crabbe, Jane Austen, and many others. John Murray III (1803-92) carried on the business, and on his death, April 2, 1892, was succeeded by John Murray IV (1851-1928), who was knighted in July, 1926. In 1917 the firm took over the business of Smith, Elder & Co. and The Cornhill Magazine.

MURRAY, SIR JOHN (1841-1914). British biologist and geographer. He was born at Coburg, Ontario, March 3, 1841, was chief naturalist to the Challenger Expedition, 1872-76, and editor of its scientific reports, and also took part in other expeditions. He was the author of a number of books and memoirs on marine biology, oceanography, and limnology. He died March 16, 1914.

MÜRREN. Pleasure resort of Switzerland, in the Bernese Oberland. It is perched on a mountain terrace below the Jungfrau, the Breithorn, the Bühlis Alp, and the Schiltborn, 3 m. S. of Lauterbrunnen.

MURRUMBIDGEE. River of New South Wales. It rises in the Australian Alps, flows N. through the Federal Territory to the artificial lake caused by the Burrinjuck dam, thence almost due W. to its junction with the Lachlan, and, later, S.W. to the Murray. It is 1,350 m. long. The Murrumbidgee irrigation system consists of the Burrinjuck dam, a movable diversion weir at Berrembed, about 240 m. below, together with canals, weirs, and distributing channels.

MUSCARINE. Poisonous alkaloid found in fly agaric (*Agaricus muscarius*) and the fungus *Amanita pantherina*. It has been prepared artificially by the oxidation of chlorine with nitric acid. The name is also applied to blue aniline dye.

MUSCAT, MOSKAT, or MASKAT. Capital and port of Oman, S.E. Arabia, on the S. shore of the Gulf of Oman. It is the residence of a British political agent and consul. It was occupied by the Portuguese from 1508 to the middle of the 17th century, becoming the capital of an independent state again under a native sultan in 1741. Pop., with the neighbouring town of Matrah, about 20,000.

MUSCATEL or MUSCADEL (Ital. moscato). Generic term for wine derived from the parent

vine of the same name. A highly alcoholised, sweet, rich wine, either white or red, it is distinguished by a strong musk flavour. Muscatel wine is made in France, Spain, Italy, Sicily, and elsewhere.

MUSCLE. Tissue possessing power of contraction, by which, in the higher animals, movements are performed. Muscles are divided into voluntary and involuntary muscles, according to whether they are controlled by the will or not. Voluntary muscles are attached to the

bones and are sometimes called skeletal. They consist of masses of fibres, each fibre being about 1 in. in length and 1/500th in. in diameter. Each fibre is surrounded by a sheath, called the sarcolemma, inside which is soft tissue possessing the power of contraction. When a muscle is stimulated by a nerve and contracts, the fibres become shorter and thicker. "Plain" muscle is composed of elongated cells about 1/600th of an in. long, each with an oval nucleus and covered with a delicate sheath.



Muscovy Duck. Tree-nesting duck, found naturally in Central and South America

Muscovite. In mineralogy, name given to a mineral of the mica group. It is one of the commonest varieties of mica (q.v.).

MUSCOVY. Old name for Russia. Derived from Moscow, and meaning the district around that city, it was generally used for Russia until well into the 18th century. See Russia.

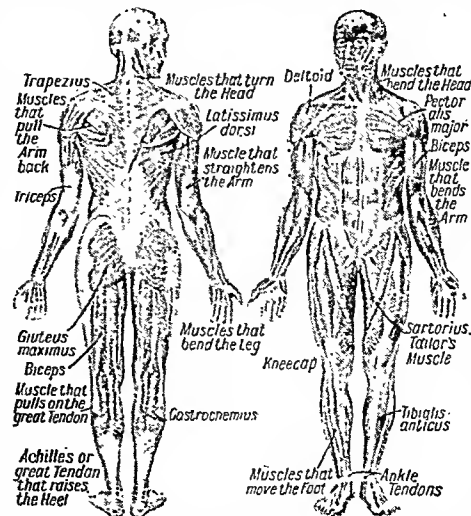
MUSCOVY DUCK (*Cairina moschata*). Species of duck native to Central and S. America, but largely introduced elsewhere as an ornamental bird for lakes and parks. They live in the forest swamps, where they nest in the trees, and their food is almost entirely vegetable. The male is larger than the female.

MUSE or MUSAE. In Greek mythology, a divinity who presided over a liberal art. They were supposed to be daughters of Zeus and companions of Apollo. The muses were at first three in number, and nine in later legend.

Their names are: Clio, the muse of history, represented sitting with an open scroll; Euterpe, of lyric poetry, with a flute; Thalia, of comedy and pastoral poetry; Melpomene, of tragedy; Terpsichore, of dancing; Erato, of love songs; Polyhymnia, of sacred song; Urania, of astronomy; and Calliope, of epic poetry, represented with tablet and stylus.

MUSEUM (Gr. mouseion, the seat of the muses). Repository for the preservation and exhibition of objects of natural history, antiquity, science, and art, also applied to the collection itself. Museums are comparatively modern institutions, few going back to the 18th century. The oldest surviving museum established on a sound basis is the Ashmolean Museum at Oxford. Apart from this, the first great and typical museum was the British Museum, founded in 1753.

Museums can be classified in several ways. A very broad difference lies in the bodies maintaining them, as national museums, which are maintained by the state; provincial or municipal museums, maintained out of the rates; museums of a semi-public nature, maintained by universities, societies, and schools; private museums, sometimes open to the public, as the Wellcome Historical Medical Museum, 54, Wigmore St., London, W. Museums may also be classified according to the contents and the ideas underlying their arrangement. They are generally



Muscle. Diagrams showing the distribution of the principal muscles of the body and their mode of action

differentiated into art and science museums, and thence into many varieties. A distinct type of museum is that which illustrates and commemorates the life and work of a person, the museum building being usually the house of the person commemorated, as the Shakespeare museum at Stratford. See Alloway; Asbmole, E.; British Museum.

MUSHROOM (*Psalliota campestris*). Black-spored fungus of the order Agaricaceae. A native of Britain and the temperate portions of Europe, it occurs profusely in pastures where horses have grazed. What is known as the mushroom is only the spore-bearing organ or fruit of the fungus. The cap is white and silky, at first hemispheric, then flat, from 3 to 5 ins. across. The plates or gills, which are at first salmon-pink, become dark umber in colour as the spores ripen.



Mushroom. *Agaricus campestris*, or the common edible mushroom

It appears in nature from May to Dec., but, cultivated in specially prepared beds, it may be obtained at all seasons. The bed is impregnated by pressing in pieces of an old mushroom bed or of the so-called mushroom-spawn sold by nurserymen. These bricks are permeated by the mycelium in a dry and therefore resting condition. Poisoning from mushrooms is due either to these being in a decaying condition, or to the appearance of poisonous species in the bed whose spores were introduced with the manure. See *Agaric*; *Blewits*; *Fungus*.

MUSIC. Sounds in rhythmical, melodic, and harmonic form so combined as to affect the aesthetic emotions. The art of music was slowly evolved from the imitation upon instruments of rhythmic noises allied to vocal inflexions. In all instruments there are three essentials: (1) a force to cause, (2) the vibration of an elastic body, and (3) a resonator by means of which the vibrations are amplified and carried to the ear. In reed instruments, for instance, these are the player's breath, the reed, and the tube; in bowed instruments, the friction of the bow, the string, and the body of the instrument.

Vocal music was a development of speech inflexion with a more sustained tone. The problem of harmony was met by the introduction of polyphony, that is, voices used independently but in agreement—and from the 13th to the 16th centuries musicians were employed in finding effective ways of combining voices. This led to the era of the madrigal (16th to 17th centuries) and the zenith of the fugue form in the early 18th century. Meantime, instruments had been developing rapidly. Viols were perfect by 1550, wind instruments rather less so. The lyre, dulcimer, and harp classes came under mechanical control in the clavichord, spinet, and harpsichord types, with enormously enhanced possibilities. Broken chords, scale passages, and ornaments of all kinds were added to the plainer vocal outlines. Wind instruments gradually found their distinctive uses, the violin family supplanted the gentle viols, and so the orchestra was evolved, a process which can be traced through the scores of Lulli, Purcell, Handel, Bach, Haydn, Mozart, and Beethoven.

A new language for instrumental music was found in the 17th century in the forms of the dances which, combined in sets or suites, gave rise to the sonata form in its various manifestations. This has been the basis of nearly all serious instrumental music until recently. A great factor in this development was the invention of the pianoforte.

For two centuries (1670-1870) European music was dominated by two nationalities—Italian in opera and German in instrumental forms. To-day each country can educate

its own students, and the result is seen in the groups of young composers. The revival of folk-song has been a contributory cause. See *Counterpoint*; *Harmony*.

The Musicians' Company is one of the London livery companies. It originated from a society of minstrels, was first incorporated in 1473, and reconstituted in 1604. It has no hall; the offices are at 33, Walbrook, E.C.4.

MUSICAL BOX. Instrument producing music by mechanical means. Clockwork driven by a spring moves a cylinder from which pins project at proper positions, and strike the ends of steel vibrators tuned to the notes of the scale, the vibrators and the continuous steel plate from which they are cut, and which gives them resonance, forming a sort of graduated comb. Mechanical musical toys were made as early as the 15th century.

MUSIC HALL. Place of amusement licensed for the performance of music, dancing, and varied public entertainment. It is thus distinct from a theatre, primarily intended for the exhibition of stage plays. The first music hall of the modern type was the Canterbury in Westminster Bridge Road, opened 1849. Other famous London music halls were the Empire, Leicester Square, and the Oxford, Oxford Street. The former was opened as a cinema in 1928, after being rebuilt; the latter was pulled down and a restaurant built on the site.

MUSK (*Mimulus moschatus*). Perennial herb of the order Scrophulariaceae. A native of N. America, its juicy underground stems creep extensively in moist soil. The above-ground branches and the thin, opposite, oblong leaves are densely coated with soft clammy hairs which exhale the musky odour to which the name is due. Musk is a favourite pot plant. It requires frequent, copious waterings. Harrison's musk is a larger, cultivated form.

MUSK. Dried secretion from certain glands of the male musk deer. It is used both as a medicine and a perfume. As imported it forms soft, greasy lumps of a red-brown tint, giving out the characteristic strong, peculiar odour. In its natural condition it is probably the most enduring of all odours—so long as the substance remains, the odour suffers no diminution. When newly extracted from the deer, however, it is more repulsive than attractive.

MUSK DEER (*Moschus moschiferus*). Small species of deer found among the mountains of Central Asia. Usually found in pairs, never congregating in herds, it is about 20 ins high. Neither the male nor the female has antlers. The upper canine teeth of the male project as conspicuous tusks. It is much hunted for the valuable musk, secreted by an abdominal gland, and used as an ingredient in many perfumes.



Musk. Leaves and flowers of *Mimulus moschatus*

MUSKET. General term for any form of smoothbore firearm used by a foot soldier. Muskets may be muzzle-loaders or breech-loaders, fired by the percussion system or by a flint, or by the application of a match to powder in the pan. The official manual on shooting is still called musketry regulations.

In Great Britain a school of musketry was established at Hythe, Kent, in 1854. It is now a branch of the Small Arms School at Netheravon, and theoretic instruction is given in the use of the rifle, revolver, and bayonet.

MUSKOKA. Region of great natural beauty in the Lakes Peninsula, Ontario. It contains a river and lake of the same name. From 800 to 1,000 lakes are connected by hundreds of streams, all available for passage by canoe. The river rises in the S.W. corner of Algonquin National Park, and flows S. to Lake Simcoe, through the E. end of Lake Muskoka. The lake is 20 m. long. The region is a summer camping ground.

MUSK OX (*Ovibos moschatus*). Large ruminant mammal. Found in the Arctic regions, it is

placed by zoologists between the sheep and ox. Its flesh is tainted with a musky flavour. It is covered with long, thick, brownish hair, and the horns of the male are wide and flattened on the forehead. Its range is now confined to the extreme N. of America.



Musk Ox. *Ovibos moschatus*, the large North American ruminant
W. S. Berridge, F.Z.S.

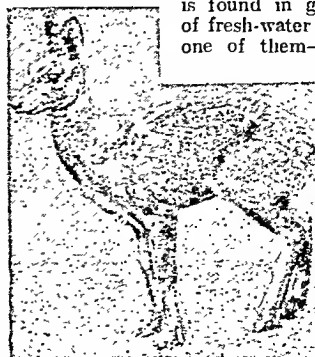
MUSQUASH (*Fiber zibethicus*). North American rodent allied to the voles and beaver, found in Alaska and Canada. The head and body together measure about a foot. It affects the margins of lakes and large ponds, where in autumn it amasses great heaps of edible roots, reeds, and sedges, often plastered with mud on the exterior. Its burrows communicate with this store, which is gradually consumed from the centre during the winter. It possesses scent-glands with a strong musky odour. The musquash is trapped extensively for its fur.



Mussel. Duck mussel, *Anadonta anatina*

MUSSEL. Name popularly applied to many bivalve molluscs, both marine and fresh water, but more correctly to the common mussel, *Mytilus edulis*, of the markets. Abundant on the rocks around the British coasts, it is found in great clusters. Seven species of fresh-water mussels occur in Great Britain, one of them—the swan mussel—sometimes attaining a width of over 7 ins. One species is the pearl mussel, which occurs in the mountain streams of the N. and W. Its pearls, however, usually lack the lustre and beauty of the product of the pearl oyster. See *Mollusc*.

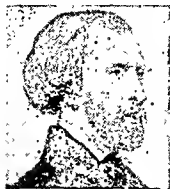
MUSSELBURGH. Burgh of Midlothian, Scotland. It stands on the firth of Forth, where the river Esk enters it. It is distant some 6 miles from Edinburgh, of which city it is now practically a suburb,



Musk Deer. Young female of the Central Asian species
W. S. Berridge, F.Z.S.

and is served by the L.N.E.R. Across the Esk is Fishermere, where there is a harbour for the fishing boats. The town has fine golf links. An annual race meeting is held. Pop 17,100. See Loretto School; Pinkie.

MUSSET, ALFRED DE (1810-57). French poet, novelist, and dramatist. Born in Paris, Dec. 11, 1810, he was admitted to the circle of romantics of whom Victor Hugo was the chief. Early in 1830 he published *Contes d'Espagne et d'Italie*, which met with a cordial reception; and the same year his first comedy was produced at the Odéon Theatre, but was not successful. With two short plays published in 1832 his importance as a dramatist was immediately recognized. Two tragi-comedies, *André del Sarto* and *Les Caprices de Marianne*, followed, in 1833, and towards the close of that year he set out with George Sand for Venice. After a few months together they separated, but for Musset this episode was followed by a period of literary activity, marked by the production of some of his finest work. In 1838 de Musset was appointed librarian at the home office in Paris. In 1845 he published his delightful proverb play, and in 1847 had a notable stage success with *Un Caprice*. He died May 2, 1857. See Sand, George.



Alfred de Musset,
French writer

MUSSOLINI, BENITO (b. 1883). Italian statesman. Born July 29, 1883, of humble parents, he became a teacher. In 1902 he went to Switzerland, where his activities as a socialist led to his expulsion in 1904. He then took to journalism, and in 1912 became editor of *Avanti!*, a socialist paper in Milan. In 1914 he urged Italy's participation in the Great War, and when this came about in 1915 he himself went on active service. In 1917 he was wounded.



Benito Mussolini,
Italian statesman
Henri Manuel

On the conclusion of the struggle Mussolini became very active. National conditions were bad and revolutionary ideas were gaining ground, tendencies which he sought to combat by founding, chiefly from among those who had served in the war, the movement called Fascism. This quickly became very strong, and in 1922 declared for a radical change in the methods of government. The result was that on Nov. 1, 1922, Mussolini was appointed prime minister. He took charge also of several departments and became practically dictator of the country. Attempts to overthrow him, even to kill him, failed, and in 1930 his hold on Italy seemed firmer than ever. He carried out a strong foreign policy, and spared no pains to foster home industries, but the price was the abolition of government by ordinary constitutional methods. In 1928 Mussolini published his *Autobiography*, an English translation by R. W. Child appearing.

MUSTANG (Span. *mestrenco*, a strayer). Name applied to the wild horse found on the prairies of Mexico and California. They are believed to be the descendants of horses introduced from Europe by the Spaniards in the 16th century.

MUSTARD (Brassicæ). Annual herbs of the order Cruciferae, natives of Europe, Asia, and N. Africa. There are three British species known as mustards—black mustard (*B. nigra*),

wild mustard or charlock (*B. arvensis*), and white mustard (*B. alba*). These are by some authors separated to constitute the genus *Sinapis*. They are bristly, branching plants from 1 ft. to 3 ft. in height, with variously lobed leaves and yellow flowers, and long, rounded seed pods. The mustard of commerce is a mixture of the seeds of black mustard and white mustard, ground and mixed with wheat flour and coloured with turmeric. In medicine mustard is prescribed as an emetic in cases of poisoning.

MUSWELL BROOK. Town of New South Wales, Australia. A road and rly. junction on the Hunter river, 75 m. by rly. from Newcastle, it is a centre for a rich vine-growing and wine-making district in the valley of the Hunter. Pop. 2,400.

MUSWELL HILL. District of London, in the county of Middlesex. It lies to the N. of Highgate and to the E. of Finchley. It has a station on the L.N.E.R., and in the district is the Alexandra Palace. See Alexandra Palace.

MUT. Egyptian goddess. Forming with her consort Amen-Ra and her son Khonsu the Theban triad, her chief temple lay S. of Karnak. Mistress of the sky, she appears in human form wearing a vulture head-dress and the double crown of Egypt.

MUTSU-HITO (1852-1912). Emperor of Japan. Born at Kyoto, Nov. 3, 1852, he succeeded his father, Osa-hito, in 1867. The country had just been opened up to foreigners, and among the conservative element there was considerable discontent. Mutsu-hito, however, favoured Western ideas. He abolished the shogunate, and in 1869 moved his capital from Kyoto to Yeddo, which he renamed Tokyo. Railways were introduced in 1872, the European calendar came into force, and the study of English became general. The victorious wars with China, 1894, and Russia, 1904-5, strengthened his power, which was consolidated in 1910 by his alliance with Great Britain. He died July 29, 1912. See Japan.



Mutsu-hito,
Emperor of Japan

MUTTON (late Lat. *munto*, sheep). Flesh of sheep. It contains less protein and more fat than beef. The breeds of sheep for mutton production include Lincoln, Leicester, Border Leicester, Scotch blackface, Shropshire, South Devon, and Welsh. Immense quantities of frozen and chilled mutton are imported into Great Britain, especially from New Zealand and Australia.

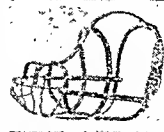
MUTTRA OR MATHURA. Dist. and town of India in the Agra division, United Provinces. The dist. grows wheat, barley, millet, and gram. The town is an ancient sacred city on the Jumna. The Mosque of Aurangzeb dates from 1660. Area, dist., 1,450 sq. m. Pop. dist., 619,138; town, 52,840.



Mustard. Foliage, flowers, and seed-pods of charlock

order to prevent them, when it becomes necessary, from eating or biting.

The muzzling order is a measure adopted by public authority in various countries to stamp out rabies (q.v.). Dogs are the principal victims, and experience has shown that the best means of extinguishing it is compulsory muzzling within large districts, and the quarantining of all imported dogs, or absolute exclusion.



Muzzle for dogs.
Pattern approved
by Ministry of
Agriculture

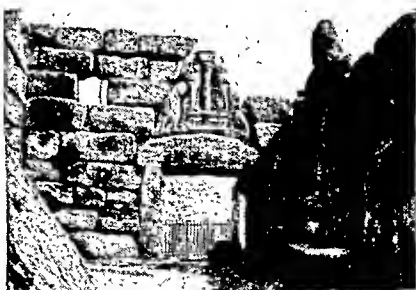
MWERU. Lake of Central Africa, W. of Lake Tanganyika. It is 68 m. long and has an average breadth of 24 m. The lake was discovered by Livingstone in 1867.

MYALL. An Australian tree. There are two kinds, one of which resembles the weeping willow. Its wood is much used for making tobacco pipes and handles for whips.

MYCENAE (Gr. *Mykenai*). Ancient Greek city of Argolis in Peloponnesus. It was the centre of the so-called Mycenaean civilization, and the residence and burial place of Agamemnon. In 468 B.C. it was destroyed.

In 1822 the remains of the Cyclopean ring-walls, with the famous Lion Gate, and of a domed building of beehive shape (the so-called Treasury House of Atreus, in reality a tomb), were investigated by French archaeologists. On the acropolis (citadel) Schliemann discovered rock-hewn graves containing gold and silver ornaments, arms, vases, and various utensils. They appear to have been the graves of members of the royal house. Later research brought to light the remains of a royal palace on the acropolis height. Remains of private houses yielded objects of pottery belonging to the late Mycenaean period—the period of the palace, Lion Gate, and domed tombs. See Aegean Civilization.

MYDDELTON, SIR HUGH (c. 1560-1631). English capitalist. Born at Gales Hill, Denbighshire, he came to London as a youth and became a goldsmith and banker in Basinghall Street. In 1609 he contracted with the corporation of London for making a river to supply the city with water from Ware. The New River, as it was called, was opened in 1613, and Myddelton was made a baronet. He died Dec. 10, 1631.



Mycenae. Famous Lion Gate as it is to-day. Over the lintel two heraldic lions guard a sacred pillar

MYELITIS (Gr. *myelos*, marrow). Inflammation of the spinal cord. Acute myelitis may be due to exposure to cold and wet, fracture or injury of the spine, or may be a complication of infectious diseases, such as typhus and smallpox. Paralysis rapidly develops, first in the legs, and in the arms if the upper part of the cord becomes involved. The muscles waste rapidly, and delirium and high fever terminate in death.

MYERS, FREDERIC WILLIAM HENRY (1843-1901). British man of letters. He was born Feb. 6, 1843, at Keswick, and after a brief

period as classical lecturer at Cambridge he became an inspector of schools. Of his poems *The Renewal of Youth*, 1882, is probably his finest effort. In later life he became interested in spiritualistic phenomena, and was an original member of the Society for Psychical Research. The results of his psychic studies are embodied in several publications, notably *Human Personality and its Survival of Bodily Death*, 1903. Myers died Jan. 17, 1901. Before his death he agreed to make every effort to communicate from beyond the grave, and it is claimed that several messages have been received. See *Psychical Research*.



F. W. H. Myers,
British man of letters
Elliott & Fry

MYNN, ALFRED (1807-61). English cricketer. Born at Goudhurst, Kent, Jan. 19, 1807, he joined the Harrietsham, Kent, cricket club in 1825. He played at Lord's in 1832, and became one of the chief cricketers in the country. As a fast round-arm bowler Mynn had no equal. He died Nov. 1, 1861.

MYNYDDISLWYN. Urban dist. of Monmouthshire. It is 8 m. S.W. of Pontypool, and stands on the coalfield, its industries including iron, tinplate, and chemical works. There are quarries in the neighbourhood. Pop. 14,898.

MYOPIA (Gr. *myops*, short-sighted). Short sight. It is an error of refraction most commonly due to abnormal elongation of the eyeball, with the result that parallel rays are brought to a focus in front of the retina, and vision is accordingly indistinct. See *Eye*.

MYRIAPODA. Sub-class of the arthropoda, which includes the centipedes and millipedes. They have long, segmented, cylindrical, or flattened bodies, and each segment is provided with paired limbs. There are a great number of species, distributed over the tropical and temperate regions. Great Britain has several species.



Myriapoda. Common millipede. It has two legs on each body segment
W. S. Berridge, F.Z.S.

MYRMIDONS. In Greek legend, the Thessalian tribe of which Achilles was king. Achilles brought them to Troy, and withdrew them from the fighting when he quarrelled with Agamemnon. Their unqualified devotion to Achilles has caused the term to be used for followers of unquestioning obedience.

MYROBALAN. Name given to the plum-like fruit of certain Indian trees of the genus *Terminalia* and order *Combretaceae*. The fruits are astringent, with bitter kernels. Gathered unripe, they are used in tanning, dyeing, and ink manufacture. Emblic myrobalans are the acid, fleshy fruits of *Phyllanthus emblica*, a tree of the order *Euphorbiaceae*. They are eaten raw, or as a sweetmeat.

MYROBALAN PLUM or **CHERRY PLUM** (*Prunus cerasifera*). Shrub of the natural order *Rosaceae*. Its native country is probably the Caucasus. The branches are not spiny; the leaves are elliptical, the flowers white, and the fruit round and red, with yellow flesh. It is much used for making hedges.

MYRON (5th century B.C.). Greek sculptor. Born at Eleutherae in Boeotia, he was a pupil of Ageladas of Argos. Specially known as a worker in bronze, he chose for his subjects athletes and animals. His chief characteristics

were truthfulness to nature, and active rather than passive representation. His most famous works were the *Discobolus*, *Ladas the Runner*, a *Satyr* (probably *Marsyas*), and a bronze cow. See *Discobolus*; *Greek Art*.

MYRRH. Gum resin obtained from the stem of *Balsamodendron* or *Commiphora myrrha*. Growing in Arabia and Abyssinia, it is used occasionally in medicine to excite the appetite and stimulate the flow of gastric juice. Tincture of myrrh is also used. Myrrh may be a useful constituent of mouth washes and gargles for a relaxed throat. The tree is small, with grey bark, from which the myrrh escapes in yellow oily drops.

Myrrh was used in the East as a perfume, and also for embalming. It was one of the gifts made by the magi to the child Jesus Christ.

MYRTLE (*Myrtus communis*). Evergreen shrub of the order *Myrtaceae*, native of W. Asia, but long naturalised in S. Europe, whence it was introduced to Britain in 1597. It grows to a height of 10 ft., has shining oval opposite leaves, and fragrant white flowers largely used in perfumery. The purple berries also are fragrant; they are sweet and have a strong aromatic flavour.



Myrtle. Foliage and flower spray of the evergreen shrub

Myrtle wreaths were used among the ancients to crown the victors in athletic games. See *Bog Myrtle*.

MYSORE. State of S. India. It is on the Deccan plateau, on the average 2,000 ft. high, with Bombay on the N.W., Coorg on the S.W., and the Madras Presidency elsewhere. High hills, called droogs, rise in isolation from the plain; a ridge across the middle of the state separates the drainage of the Kistna from that of the Cauvery. Much land is irrigated from the Cauvery. Crops include millet, pulse, and rice. Gold is mined, and also manganese. Bangalore is the largest town.

The British took over the administration in 1831, and set up a Hindu maharaja. The ruler has a salute of 21 guns. The area is 29,607 sq. m. Pop. 5,978,892.

Mysore city is situated near the Cauvery, 100 m. S.W. of Bangalore, with which it is connected by rly. It was the capital from early times until 1610. It was then superseded by Seringapatam until 1799, when the court again moved to Mysore. Pop. 83,951.

MYSTERY (Gr. *initiation*). Secret rite. The Greek word *mysteria* denoted rites performed in the presence of persons prepared by gradual initiation, under a bond of secrecy. Their chief centre was at Eleusis (q.v.). A second group spread from Thrace to Lemnos and Boeotian Thebes. These mysteries were concerned with the deified shades called *Cabiri*, and included the ritual slaying of an animal victim. A third group was concerned with Orpheus, and with his veneration Greece associated the refinements of melody and poetry. In these Orphic mysteries the idea of recurrent death and resurrection was symbolised. At the beginning of our era these mysteries were practised throughout the Greco-Roman world by the private members of secret societies, side by side with those of the Persian *Mithras*.

Religious mysteries are a special development of a social institution of widespread occurrence, and arose out of the emotional life of settled agricultural peoples. The main elements—purification, offering, procession, song, dance, drama, secret formula, and

mechanical accessories—are universal. They sometimes occur as modes of admission into general society.

Mystery play was the term given to a type of religious drama in medieval Europe. It was so called either as representing mysteries of the faith, or as being a ministry or craft. The medieval drama was evolved from religious ritual. By the 12th century the clergy and choirs performed dramas in French churches. Thence the dramas were transferred to the churchyards and to open spaces in towns, and when in 1210 the clergy were forbidden to act except in churches, the performances were given by laymen. See *Acting*; *Drama*; *Miracle Play*; *Oberammergau*.

MYSTICISM (Gr. *myein*, to close the eyes). Term used originally in connexion with the Greek mysteries; a mystic was one who had been initiated into the esoteric knowledge of divine things which the mysteries imparted to their converts. In its modern sense a mystic is one who claims the power of immediate approach to God.

The golden age of Christian mysticism falls within the period A.D. 1250-1500. It originated in a Pantheistic society which flourished in the 13th and 14th centuries known as "The Brethren of the Free Spirit." Out of this society came Meister Eckhart, 1260-1329, one of the most remarkable of the German mystics. Gradually, however, mysticism separated itself from Pantheism owing largely to the influence of John Ruysbroek, 1293-1381. But the most influential of the mystics was John Tauler (1290-1361), who brought mysticism into line with orthodox Christianity.

In the 16th century there was a powerful resurgence of mysticism in Roman Catholicism, particularly in Spain. In France mysticism found expression in the writings of Fénelon, Bossuet, Madame Guyon, and in Jansenism. Jacob Boehme was the first great Protestant mystic, and it was from his writings that William Law first introduced mysticism into the English church.

MYTENS, DANIEL (c. 1590-1642). Dutch painter. Born at The Hague, he came to London in 1618, and was made painter to Charles I, 1625. After Van Dyck's arrival he returned to Holland in 1630, and died in 1642. His best works include *Hudson, the Dwarf*, with a dog, in St. James's Palace, Charles Howard, Earl of Nottingham, at Hampton Court, Charles I and Henrietta Maria in Buckingham Palace, London.

MYTHOLOGY. Science which investigates the myths or sacred stories of the various peoples of the world. Of these stories some relate to the Creation, and to divine or superhuman beings, their genealogies, activities, and adventures, whether they are believed to have originated the world, or mankind, or a particular tribe, rank, or family, or to superintend or take part in its government, to be concerned in its well-being, to be hostile to it, or to lead a life of their own more or less apart from mortals. Other stories relate to saints or heroes who have championed mankind or conferred benefits, who have undergone sufferings, made discoveries or inventions, or moulded the earth or its inhabitants into their present form. Many stories are connected with the worship of the gods.

Myths take their rise very low down in culture. As culture advances, one incident after another becomes incredible to the growing intelligence, or repugnant to the more refined manners and morality of the community. Again, the myths deemed derogatory to the divinities are denounced as lies; or they are interpreted as parables. All these methods were tried in Greece.

The modern theory that myths are a disease of language, that seeks their explanation in questionable etymologies and blunders of

meaning, was put forward by German philologists in the 19th century and in England by Max Müller, who laid down "that the best solvent of the old riddles of mythology is to be found in an etymological analysis of the names of gods and goddesses, heroes and heroines." Accordingly, he set himself to investigate and interpret the names.

The time came when people could no longer accept the dogmatism of the philologists. Andrew Lang declared war in a number of essays, culminating in *Myth, Ritual and Religion*, 1887, and the anthropological method, which explains mythology by the universal characteristics of the mental condition of the lower culture, has been accepted by all serious students. Consult *Contributions to the Science of Mythology*, 2 vols., 1897.

N. Fourteenth letter of the English and Latin alphabets, one of the nasal consonants. In the combination ng it has a marked nasal sound in words like king, sing, to some extent comparable with the sound heard in the French *mon*, non. Otherwise it is pronounced as in can, neck. It is mute at the end of words after m, as in column, hymn, solemn. See Alphabet: Phonetics.

NAAS. Urban dist. of co. Kildare, Irish Free State. It stands on the Gt. Southern Rlys. and the Grand Canal, and near the Liffey, 20 m. from Dublin. It was represented in the Irish Parliament. Near is Punchestown (q.v.). Pop. 3,442. Pron. Nace.

NABOB. Title given to the great moguls, viceroys, and generally to native rulers and persons of rank in India. In the 18th century nabob was used in England of one who ostentatiously spent a fortune made in the East. It is a corruption of the Hindustani *nawab*.

NABOTH. Jezreelite who owned a vineyard adjoining the palace of Ahab (q.v.). When he refused to part with it, Jezebel secured it by causing Naboth and his sons to be executed on a false charge of blasphemy (1 Kings 21).

NAEVUS (Lat. birthmark) or **MOLE**. Lesion of the skin present at birth. The term is applied by pathologists to several abnormal conditions of the skin. *Naevus vascularis* is due to overgrowth of the blood vessels of the skin, and forms the condition known popularly as port-wine mark and strawberry mark. Small naevi are of very common occurrence. Naevi should be left alone unless they are increasing or cause disfigurement. Treatment by liquid air, solid carbon dioxide, or radium has been found effective.

Naevus pigmentosus is the pigmented mole. These moles may be single or scattered over the whole body, and may be as small as a pin's head or cover large areas. Sometimes they are covered with long hair.

NAGASAKI. Seaport of Japan. It stands on a fine natural harbour on the west side of Kyushu island, 3 m. from the open sea. It held the monopoly of European trade from the 16th century until 1859, when Japan was opened to foreign trade and towns more centrally situated superseded Nagasaki. The port has connexion by rly. and ocean liner with other Japanese ports. Pop. 189,000.

NAGOYA. City of Japan, in Honshu. It is in the S. of the fertile plain of Mino and Owari, and owes its importance to the Shogun stronghold built in 1610. S. of the city is Nagoya harbour, on the bay of Ise. Silk and cotton are important manufactures, and the city was a pioneer in the clock industry. Atsuta Jingu is the second greatest Shinto shrine in Japan. Almost half-way between Tokyo and Osaka, the city has rly. connexion with these centres. Pop. 768,558. See Japan.

NAGPUR. Capital of the Central Provinces, India. It occupies a central position between the Wardha and Wainganga rivers, in close relation to the great cotton growing area of the Deccan. The importance of the town increased when the direct line from Bombay to Calcutta was made through it. It has several important educational institutions, including a university and an agricultural college. Pop. 145,193.

NAGYVARAD. Town of Rumania, formerly in Hungary. At an earlier date known by the German name Grosswardein, it is also called Oradea. It is almost due E. of Budapest, 160 m. distant by rly., on the main line to Transylvania. Near by are warm springs which were known to the Romans. Pop. 68,081.

NAHUA. Collective name for American Indian tribes which dominated Anahuac, the Mexican tableland, at the time of the Spanish conquest. Their language was called Nahuatl. They dwelt in scattered pueblos, whose rivalry led to the formation of confederacies, whereof the Aztec finally secured the hegemony. See Aztec.

NAHUM. One of the minor prophets. A native of Elkiah, probably in Galilee, he flourished about the 7th cent. B.C. His book consists of predictions of the fall of Nineveh which took place 606 B.C. The reference to the capture of No-Amon (Thebes) by Ashurbanipal, king of Assyria, further shows that it must have been written after 666 B.C.

Naiad or **NALADE.** In Greek mythology, nymphs of rivers, brooks, springs, and fresh water generally. See Nymph.

NAIN. Ancient town in Galilee, 6 m. S.E. of Nazareth, situated on the summit of Little Hermon, or the hill of Moreh. It was the home of a youth whom Christ raised from the dead (Luke 7).

NAIRN. Burgh and watering place of Nairnshire, Scotland; also the county town. It stands where the Nairn falls into the Moray Firth, 15 m. from Inverness, and is served by the L.M.S. Rly. The attractions include good bathing and golf links. It has a good harbour, and the chief industry is fishing. Nairn, known then as Invernairn, was made a royal burgh in the 12th century. Pop. 4,474.

NAIRNE, CAROLINA, BARONESS (1766-1845). Scottish halland writer. Daughter of Laurence Oliphant, she was born at Gask, Perthshire, Aug. 16, 1766, and in 1806 married her second cousin, William, afterwards Baron Nairne (1757-1830). Her beauty and charm won for her the name of The Flower of Strathearn. She wrote nearly 100 songs, some of them adaptations of old favourites, as The Land o' the Leal, Call'er Herrin', and The Laird o' Cockpen. She died at Gask, Oct. 26, 1845.

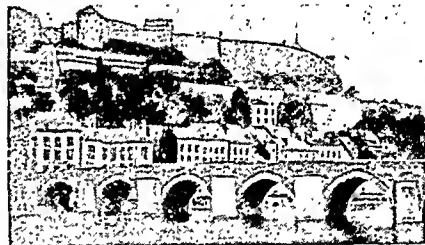
NAIRNSHIRE. County of Scotland. It has about 10 m. of coastline on the Moray Firth, and the surface rises therefrom towards the S., attaining an alt. of 2,162 ft. in Carn Glas. Its area is 162 sq. m. The chief rivers are the Findhorn and the Nairn. The county is an agricultural area, but much of the land is only suitable for sheep. It is served by the L.M.S. Rly. Nairn is the county town, and in the shire are Cawdor and Kilravock, with their castles, and Auldearn. In 1891

detached portions of Nairnshire were absorbed in the counties of Ross, Inverness, and Moray. In early times Nairn was part of the district called Moray, and it has always had a close association with the shire of that name. It joins with Moray to send a member to Parliament. Pop. 8,790.

NAIROBI. Administrative capital of Kenya, E. Africa. Situated on an elevated plateau, alt. 5,450 ft., it is within easy reach of the Kikuyu highlands. Nairobi is on the Uganda Rly., 327 m. from Mombasa and 257 m. from Kisumu on Lake Victoria. There is a motor road from here across Uganda to Mongalla in the Sudan. In 1899 it was only a rly. settlement, but is now a flourishing centre. Pop. 32,864.

NAMAQUALAND. Country of S.W. Africa, usually called Great Namaqualand. Extending from the Orange River to Damara-land, it is mainly a sterile desert region, and was occupied by the Germans in 1885. In 1927-28 extensive finds of diamonds were made in the district.

Little Namaqualand is a district in the Cape Province. It lies S. of the Orange River, by which it is separated from Great Namaqualand. The Namas or Namaquas, who give their name to this district, are a branch of the Hottentots.



Namur, Belgium. Citadel and bridge over the Meuse, which connects the town with the suburb of Jambes

NAMUR (Flemish, Naemen). City of Belgium, capital of the prov. of Namur. It lies 35 m. by rly. S.E. of Brussels, at the confluence of the Sambre and Meuse, which is crossed by a fine bridge. The disused citadel stands between the two rivers. It is a railway junction. The 18th century cathedral of S. Aubain, in Renaissance style, on the site of an earlier building, contains the heart of Don John of Austria. The church of S. Loup is a good example of the Baroque style. The heltry was rebuilt in the 16th century. There are museums, and above the citadel is a fine park. Pop. 30,570.

In the 19th century Namur was fortified on modern lines by Brialmont, the city being encircled by a ring of detached forts.

These, however, were unable to resist the Germans when Belgium was invaded. Their attack began on Aug. 19th, 1914, and by the 25th the last of the forts had been captured. As the result of heavy fighting the German loss was about 12,000 men.

NANAIMO. Port of British Columbia, Canada, on Vancouver Island. Situated 73 m. from Victoria, it is a station on a branch of the C.P.R. with a good harbour, whence steamers go to Vancouver, Victoria, and elsewhere. Fishing and fish curing are carried on. The town was a post of the Hudson Bay Co. Pop. 9,088.



Nairnshire. Map of the Highland county south of Moray Firth

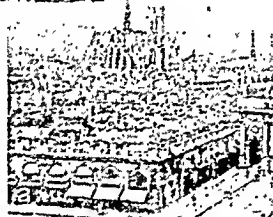
NANA SAHIB (fl. 1857). Leader in the Indian Mutiny, 1857-58. Born about 1821, he was the adopted son of the last peshwa Baji Rao. Incensed at the British refusal to continue the pension after his father's death, 1853, he fomented discontent in the disaffected parts of India. On the outbreak of the Mutiny he ordered the massacre at Cawnpore (q.v.), and, on its suppression, he fled to the Terai jungles of Nepal, where he is reported to have died.

NANCHANG. Capital of Kiangsi prov., China. It is situated on the Kan river, and was formerly on the Poyang Lake, which has since receded some 30 m. Nanchang is connected by railway with Kiukiang on the Yangtze. Pop. 300,000.

NANCY. City of France. The capital of the dept. of Meurthe-et-Moselle, it stands on the river Meurthe, 220 m. E. of Paris. It is divided into two parts, an old town and a new town. The new town was planned by Charles III, duke of Lorraine, about 1608, when Nancy was the capital of that duchy. The buildings include



the cathedral, dating from the 18th century, the palace of the dukes, used later for state purposes, and the town hall. The churches of S. Epvre, Notre Dame and the Cordeliers are



Nancy. 1. The cathedral. 2. Church of S. Epvre, and part of Place Stanislas in the foreground

notable. The Porte de la Craffe is a picturesque feature, and there is a citadel and some fine old houses. The Place Stanislas is the chief square; on it is an arch built in honour of Louis XIV. There is a university founded in 1572 and a school of forestry. The city is an important railway centre. Pop. 114,500.

There was some fierce fighting around Nancy in Aug. and Sept., 1914. The Germans attacked on Aug. 24th, but after an initial success they were beaten back, and by the 28th the first phase of the battle was over. The second phase began on Sept. 4. Again the Germans gained ground, but in the end this was recovered by the French. On the 12th the German retreat began.

NANKING. Capital of the republic of China. It is situated on the Yangtze, though the walled city lies away from the river, nearly 200 m. from the mouth. Its port is accessible to large steamers all the year round. The circuit of the walls is over 20 m.

The establishments include an arsenal, powder works, and a mint. There are a university, a naval college, and an agricultural experimental station, with a school of forestry. The town is connected by rly. with Shanghai, and Pukow, the port on the opposite bank of the Yangtze, is the terminus of the Tientsin-Pukow Rly. The town gave its name to Nankcen cloth.

Dating from the 5th or 6th cent. B.C., Nanking, the name of which means southern capital, was the capital of China for several periods between A.D. 222 and 501, and again from the accession of the Ming dynasty in 1368, until their removal to Peking in 1403. In 1928 the victorious Nationalists ordered

the capital to be removed from Peking to Nanking. Est. pop. 1,000,000.

NANSEN, FRIDTJOF (1861-1930). Norwegian explorer. Born near Christiania, Oct. 10, 1861. He went to Greenland in 1882 to obtain zoological specimens, and on his return was appointed curator of the natural history museum at Bergen. In 1888-89 he crossed Greenland from E. to W., publishing *The First Crossing of Greenland*, 1890. In 1893 he embarked on the *Fram* (q.v.) on a polar expedition, placed his vessel in the pack ice off the New Siberia Islands, and in 1895 made a dash for the pole, reaching 86° 14' N., the farthest point then reached. In 1895 he wrote *Farthest North* and was made professor of zoology at Christiania (Oslo). There he devoted his time to the study of oceanography, except for two years (1906-08) when he was Norwegian minister in London. After the Great War, during which he went on a mission to the United States, Nansen was in charge of the work of repatriating prisoners of war, and later he did a similar work for refugees in Europe and Asia Minor. In 1921 he undertook relief work in Russia. He died May 13, 1930.



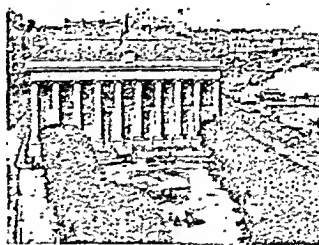
Fridtjof Nansen, Norwegian explorer

NANSHAN. Mt. range of Asia. It comprises parallel ridges between the Gobi desert and the Tsaidam swamp on the N.E. boundary of Tibet. The range alt. 14,000-16,000 ft., has a general direction N.W. and S.E.

There is another range of the same name S. of the Yangtze, running parallel with the coast from Kwangsi to Chekiang prov. Its greatest alt. is 9,500 ft.

BATTLE OF NANSHAN. This was fought between the Russians and the Japanese, May 26, 1904. It was a decided Japanese victory, for they had captured many guns, and were in a position to begin the investment of Port Arthur. See Port Arthur.

NANTES. City of France. The capital of the dept. of Loire-Inférieure, 248 m. S.W. of Paris, it is built on several islands of the Loire, which is joined in the centre of the city by the Erdre. Though 35 m. from the sea, it is a great seaport, a shipbuilding centre, and a naval arsenal. Large steamers come up by the ship canal from St. Nazaire. There are over 11 bridges across the rivers, and the quays extend for 2 m., making handsome promenades. The city is almost entirely modern, the only old street being the Ruc de la Juiverie. The cathedral of S. Pierre (1434) has a fine nave. The castle of the dukes of Brittany, built in the 14th century, has massive towers and a moat. Pop. 184,509.



Nantes. The Exchange, containing the tribunal and chamber of commerce



Nanking, China. Avenue of giant statues, leading to the royal tombs of the Ming dynasty

EDICT OF NANTES. Law issued in 1598 by Henry IV of France, giving liberty of worship to the Huguenots. The edict was revoked by Louis XIV in Oct., 1685, after the Huguenots had been steadily losing their rights under it for some years.

NANTGARW. Village of Glamorgan-shire. In the valley of the Taff, it is 5 m. from Cardiff and gives its name to a variety of china. In 1811 Billingsley, the flower painter, opened a factory here. His Nantgarw pottery is unique, the fine body of even texture being more like glass than china. Pieces are comparatively rare. He decorated some with flowers, but most of his china was decorated by other potters.

NANTWICH. Urban dist. and market town of Cheshire. It stands on the Weaver, 161 m. from London and 4 m. from Crewe, and is served by the G.W. and L.M.S. Rlys. The chief building is the church of S. Mary and S. Nicholas. The town has some old houses. Nantwich is a hunting centre and has a spa. For long it was the centre of the salt industry. Market days Thur. and Sat. Pop. 7,286

NANTYGLO. District of Monmouthshire, England. It is 7 m. W.S.W. of Aber-gavenny, on the G.W.R., and has collieries and ironworks. It forms part of the urban dist. of Nantyglo and Blaenau. Pop. 16,453.

NAOMI. Character in the O.T. book of Ruth. Wife of Elimelech, of Bethlehem-Judah, she lost her husband and two sons in the land of Moab, whither the family had fled through famine. Returning to her native land, her sufferings caused her to say, Call me not Naomi (pleasant): call me Mara (hitter).

NAP OR NAPOLEON. Card game. It is played with a full pack, the cards bearing the same value as in whist. The dealer deals five cards to each player, usually three to five in number, the one on his left having first call. There are calls of two, misère (in which the caller undertakes to lose every trick), three, four, and five, the latter being known as "nap." The player calling the highest leads, and endeavours to make his tricks; he chooses his own trumps, the first card he plays indicating of which suit. If he makes all his tricks he receives a payment according to the number of his call; or, failing, has to pay each player in the same proportion. It is usual for the caller of "nap" when successful, to be paid double stakes.

NAPHTALI. Name of one of the ten northern tribes of Israel, and of its traditional ancestor, the sixth son of Jacob. He was Bilhah's second son. Gen. 30, 7, 8. The tribe was settled in fertile territory W. and N.W. of the Sea of Galilee, and was among the first to be led into captivity (2 Kings, 15; Isaiah, 9).

NAPHTHA. Strictly, liquid bitumen. Properly the term should be confined to, first, the pure and limpid oil yielded by certain wells of the Caspian, the specific gravity of which ranges between 0.700 and 0.850; and, secondly, to one of the products yielded in the distillation of crude petroleum. This latter naphtha, having a specific gravity of about 0.700, is much used for cleaning purposes, including the cleansing of oil wells themselves, for making oil-cloths, and illuminating gas. Naphtha is largely used as a solvent, and is burnt in flare lamps. Introduced into soap, naphtha undoubtedly assists its cleansing properties owing to its affinity for grease. See Petroleum.

NAPHTHALENE. White solid hydrocarbon, with a characteristic smell, one of the products of the dry distillation of coal. Naphthalene is employed for making products needed in the dyeing industry. It is used also for enriching water gas to make it luminous, and for increasing the luminosity of coal gas. Naphthalene is a powerful antiseptic, and preserves woollen goods and furs from moths.

NAPHTHOL, ALPHA AND BETA. Solid hydrocarbons, closely related to the phenols in their chemical properties. Both are powerful antiseptics, and are used as the starting-point in the manufacture of important aniline dyes. Their chemical formula is $C_{10}H_8O$.

NAPIER. Town and port of North Island, New Zealand. The capital of Hawke's Bay district, it has both rly. and steamer communication with Wellington (200 m.) and Auckland (372 m.). Pop. 19,060

NAPIER, BARON. Scottish title. The first holder was Sir Archibald Napier (1576-1645), 9th baron Merchiston, who gained celebrity in Scotland for his agricultural experiments. In 1623 he became a lord of session, and in 1627 was created baron Napier of Merchiston. His son, Archibald, the 3rd baron, died unmarried in 1683, when his nephew, Thomas Nicolson, succeeded to the title. The next holder was the 3rd lord's sister, Margaret, from whom it descended to her grandson Francis Scott, who took the name of Napier. The title is still held by his descendant, Baron Napier and Ettrick

NAPIER OF MAGDALA, ROBERT CORNELIUS NAPIER, 1ST BARON (1810-90). British soldier. Born at Colombo, Ceylon. Dec. 6, 1810, he



Baron Napier of Magdala, British soldier

entered the Bengal Engineers in 1826, and became chief engineer of the Punjab in 1849. His most notable military service was his conduct of the campaign in Abyssinia, 1868, which brought him a peerage. From 1870-76 Napier was commander-in-chief in India. He died Jan. 14, 1890.

NAPIER, JOHN (1550-1617). Scottish mathematician. Born at Merchiston Castle, near Edinburgh, his first mathematical work, *De Arte Logistica*, suggested that he had discovered a method of solving equations of the second and higher degrees. About 1594 he began to lay the foundations of logarithms, upon which he worked for the next twenty years. In connexion with them he suggested the present notation for decimals. His tables of logarithms were published in 1614. He died April 4, 1617.

NAPIER, SIR WILLIAM FRANCIS PATRICK (1785-1860). British soldier and historian. A son of George Napier, he was born Dec. 17, 1785. He entered the army in 1800, and in the 43rd regiment served at the siege of Copenhagen, 1807, before proceeding to Spain, where he was present at Corunna. In 1813-14 he was in command of his regiment, which formed part of the Light Brigade. Knighted in 1848, he was promoted general in 1859, and died Feb. 10, 1860. His *History of the Peninsular War* was begun in 1823, and the six volumes appeared between 1828 and 1840.

Napier's brother, Sir Charles James Napier (1782-1853), was also a soldier. He was at Corunna, and from 1841 to 1851 was in India, where he conquered Sind. He was then made governor of Sind, and from 1848-51 was commander-in-chief. He died Aug. 29, 1853.

NAPLES. City and port of Italy. Stretching along the N. side of the Bay of Naples, it is one of the most beautifully situated cities in Europe. The Museo Nazionale,



Naples. The city, with Vesuvius across the famous bay, viewed from the Castle of S. Elmo

formerly the seat of the university, houses the Farnese and other collections, including relics from the excavations at Pompeii, Herculaneum and elsewhere. The cathedral dates from 1272. There are interesting catacombs of the 1st century behind S. Gennaro.

Naples is an important manufacturing centre, making ships, motor cars, locomotives, glass, cotton, wool, gloves, perfumes, linen, and silk. The exports include wine, brandy, fruits, paper, hemp, and olive oil. The harbour is well protected and has good dock and warehouse accommodation. Pop. 966,423

THE KINGDOM OF NAPLES. Naples was also the capital of a kingdom which existed 1138-1860. It was conquered by Roger, king of Sicily, in 1130 and the two were henceforward united.

The Norman kingdom of Naples and Sicily, which included all S. Italy, passed through Constance, the Norman heiress, to the Hohenstaufen line and then to the Angevins. Alfonso V, king of Aragon and Sicily, seized the kingdom in 1435, and was acknowledged king of the Two Sicilies, as the kingdom was called, in 1443. Following a period of French rule, after the battle of the Garigliano, 1503, Naples became a Spanish province.

By the war of the Spanish Succession Naples passed to the Austrian Emperor, Charles VI, in 1713. But during the war of the Polish Succession, Don Carlos, second son of the Bourbon Philip of Spain, invaded the Two Sicilies, and in 1738 was recognized as king Charles III. Under the Spanish Bourbons, Naples remained in a state of medieval barbarism. Napoleon turned out the Bourbons in 1806, and made first his brother Joseph, and then his general, Joachim Murat, king of the Two Sicilies, 1808, but Murat was forced to flee, May, 1815, and the Bourbons were restored.

At length the emancipation of Italy put an end to Bourbon misgovernment, and the people of Naples and Sicily voted themselves a part of the Sardinian kingdom, Oct. 21, 1860.

NAPOLEON. French gold coin. It was first issued by the great emperor, hence its name. Its value was 20 francs, nominally 15s. 10d., and its weight 6.45 grammes. It is now obsolete.

NAPOLEON I. Emperor of the French. Born at Ajaccio, Aug. 15, 1769, the second surviving son of Charles and Letizia Bonaparte, Napoleon came of an Italian stock. Sent to school at Brienne, in 1785 he became lieutenant in an artillery regiment. Eponing the French republican cause, he came to the fore at the siege of royalist Toulon in Dec., 1793, and in Sept., 1795, helped to crush a royalist rising in Paris. Soon after he married Josephine de Beauharnais. His brilliant conduct of the Italian campaign (1796-97) caused France to acknowledge him as her greatest warrior.

The Directory at Paris urged him either to invade England or conquer the East. He chose the latter, and set sail for Egypt in May, 1798, with a large fleet. His scheme of a French Oriental empire was frustrated by Nelson at the battle of the Nile, Aug. 1, 1798, but Napoleon succeeded in evading the British cruisers and landed in the south of France on Oct. 9, 1799. Having overthrown the Directory, he and his friends constructed a strongly personal system in which he, as first consul, held all the executive and much legislative power. He healed the schism in the Church by what was known as the concordat of April 18, 1802, and restored the prestige of French arms by his brilliant passage of the Alps and the victory of Marengo. Britain came to terms in the treaty of Amiens, March 25, 1802.

An attempted royalist plot against his life, early in 1804, was cleverly countermanded by him and his police. In Aug., 1802, he had secured the consulate for life, with power to name his successor. On May 18, 1804, he became emperor of the French and was crowned in Notre Dame on Dec. 2. The last traces of the republican constitution soon vanished. These changes were due to his military triumphs in the war which broke out, first with England, in May, 1803, and with Austria and Russia in the summer of 1805. The struggle with Britain in 1803-5 was entirely naval, ending at Trafalgar.

The years between 1805 and 1815 were passed mainly in warfare. Having received the surrender of Mack and 70,000 Austrians at Ulm, Napoleon occupied Vienna, and gained his greatest victory at Austerlitz. He then bestowed the title of king on some of his German allies, declared the Holy Roman Empire at an end, and formed the confederation of the Rhine. Prussia rushed to arms in Sept., 1806, only to be utterly overthrown at Jena and Auerstädt, Oct. 14, 1806.

Master of Central and Western Europe, Napoleon now imposed his brother, Joseph, on the throne of Spain: Britain espoused the cause of the Portuguese and Spanish

patriots, and, in the campaigns of 1808-13, Wellington struggled bravely against the armies hurled at him by Napoleon. In 1812 Napoleon met with his great disaster in Russia. In succession Prussia and Austria rose up against him, and the campaign of 1813 resulted in his expulsion from Germany. Wellington made swift progress in the S., while in the E. the masses of the Allies closed in on Paris. They occupied Paris, and his own marshals and generals finally compelled him to abdicate in favour of his son, Napoleon II, who never reigned. The fallen emperor retired to Elba, whence he escaped in Feb., 1815, landed at Antibes, and in a few days entered Paris in triumph.



Napoleon I, Emperor of the French After the painting by H. Delaroche, 1837

But France was resolved to accept Napoleon only as a constitutional monarch, and the powers declared him an outlaw for disturbing the peace of Europe. After his defeat at Waterloo by the Allies, June 18, 1815, the emperor abdicated, and he was banished to St. Helena, where he died May 5, 1821. His remains now rest in the Invalides in Paris. His only son, known as the duke of Reichstadt, was the child of Napoleon's second wife, Marie Louise of Austria, whom he married in 1810 after he had divorced Josephine. See Austerlitz; Elba; Invalides; Jena; etc.

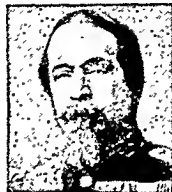
NAPOLÉON III (1808-73). Emperor of the French. Charles Louis Napoleon Bonaparte, born in Paris, April 20, 1808, was the third son of Louis Bonaparte. The death of the duke of Reichstadt in 1832 made him head of the Bonapartes. In 1838 he moved to London, and in 1840 risked a landing at Boulogne, but was arrested and sent to the fortress of Ham. Escaping from Ham in 1846, Louis Napoleon went to London, where he remained until the revolution of 1848. Elected a member of the republican assembly in June, he was elected president on Dec. 10, and in 1852 he made himself emperor of the French.

The following year Napoleon married Eugénie de Montijo. He joined England in the Crimean War, 1854-56: assisted Piedmont to turn the Austrians out of N. Italy in 1859, and gratified French ambition by obtaining Savoy and Nice. But between 1860 and 1870 he steadily lost ground, partly due to his failure to establish a Latin empire in Mexico. In July, 1870, he embarked on war with Prussia, but five weeks later came Sedan, his surrender to the Prussians, Sept. 2, and the end of the empire. Napoleon was taken to Wilhelmshöhe, where he remained until the end of the war, when he joined the empress and their son at Chislehurst. He died Jan. 9, 1873. See Farnborough.

His only son, Eugène Louis Jean Joseph Napoleon (1856-79), was known as the Prince Imperial. After his father's death in 1873 he was recognized leader of the Bonapartists. He joined the British expedition to Zululand, and was killed near Ulundi, June 1, 1879.

NARCISSUS. In Greek mythology, a beautiful youth, beloved of the nymph Echo, whose passion he could not return. Echo died of grief, and as a punishment the gods caused Narcissus to fall in love with his own reflection in a spring. This fruitless love made him pine away, until he was changed into the flower.

NARCISSUS. Small genus of bulbous herbs of the order Amaryllidaceae, natives of Europe, N. Africa, N. and W. Asia. One species only, the daffodil, is indigenous in Britain. The leaves spring directly from the bulb, and the flowers are borne on tall scapes, either singly, as in the daffodil, or forming an umbel, as in the polyanthus narcissus (*N. tazetta*). As all the species have been widely cultivated, there are a large number of garden variations.



Napoleon III, French emperor



Napoleon, Prince Imperial



Narcissus. Pheasant's-eye, N. poeticus

NARDOO (*Marsilea drummondii*). Aquatic flowerless herb of the order Marsileaceae, a native of Australia. One of the water-fern group, it has a creeping root-stock, and its fronds take the form of a long, erect stalk, with four leaflets at the summit, arranged crosswise and sensitive to light. The spore capsules are contained at first in hard shells known as sporocarps, which the aborigines pound into a kind of flour.

NARES, SIR GEORGE STRONG (1831-1915) British navigator. Entering the navy in 1845, he served in the *Resolute* during the search for Sir John Franklin, 1852-54. He commanded the *Challenger* during part of her famous cruise, but was recalled to take command of the Arctic expedition, 1875-76, for which service he was made a K.C.B. He was made rear-admiral in 1887, vice-admiral, 1892, and died Jan. 15, 1915. He was the author of several works on seamanship.



Sir George Nares, British navigator

NARES, OWEN RAMSAY (b. 1888) British actor. Born at Maiden Erlegh, Berkshire, Aug. 11, 1888, he made his first professional appearance at the Haymarket Theatre, London, in 1908. His progress was rapid, and among the plays in which he gained distinction as a clever actor were *Lady Windermere's Fan*, 1911, *Milestones*, 1912, *David Copperfield*, 1914, and *Peter Ibbetson*, 1915. He wrote *Myself and Some Others*, 1925.

NARSES (c. 474-568). General and administrator under the Roman emperor Justinian. A Persianian eunuch, he rose to high position at court, and for some time shared the command in Italy with Belisarius. His own military triumphs included a series of victories over the Goths, Alamanni, and Franks, as a result of which Italy was recovered as a province of the empire, governed by Narses himself from Ravenna.

NARTHEX. In early Christian architecture, the vestibule or porch of a basilica. It is within the main entrance at the opposite end to the altar and sanctuary. It was originally used to accommodate Christian converts who had not passed the stage of initiation. See Basilica; Cathedral.

NARWHAL (*Monodon monoceros*). Cetacean belonging to the porpoise group. It inhabits the Arctic Ocean, and is distinguished by the spirally grooved, tapering tusk of the male, often over 7 ft. long, the animal itself being from 12 ft. to 15 ft. in length. In other respects the narwhal has the general form of a small whale, and is found in small schools. Its oil and the fine ivory obtained from the tusk are valuable. See Whale.

NASEBY, BATTLE OF. Fought June 14, 1645, during the English Civil War. The king's army of 7,500 men was being followed by 13,000 parliamentarians under Fairfax and Cromwell from Daventry towards Leicester. At Broadmoor, just before entering Leicestershire, Charles decided to fight. He took up a position at Naseby, a village 7 m. from Market Harborough, and the battle began. While the royalist infantry pushed the enemy back, the day was turned by Cromwell's troopers, who, after routing the horse opposed to them, fell upon the flank of the infantry. These were thrown into confusion, and the king, followed by Rupert, was forced to retreat to

Leicester. The royalists lost about 1,000 killed and 5,000 prisoners. See Charles I; Civil War; Cromwell; Rupert.

NASH, PAUL (h. 1889). British artist. Born in Kensington, May 11, 1889, he became a pupil at the Slade school of art. At first a figure artist, he turned later to landscape. In the Great War he served in the Artists' Rifles, in the Hampshire Regiment, and as an official artist in France. In this capacity he became known by his vivid paintings and drawings of the front areas. His brother, John Nash, won recognition for his painting, woodcuts, etc.

NASH, RICHARD (1674-1762). English dandy known as Beau Nash. Born at Swansea, Oct. 18, 1674, he was for a brief time in the army, and then entered the Inner Temple, 1693. He, however, took to gambling and living by his wits. In 1705 he went to Bath, then beginning to be a fashionable resort, and soon set about organizing its social attractions. He died Feb. 3, 1762.



Richard Nash, 18th century dandy

NASHE OR NASH, THOMAS (1567-1601). English satirist and critic. Born at Lowestoft, he became a prominent figure in literary London. He took the anti-Puritan side in the Martin Marprelate controversy, engaged in a paper war with Gabriel Harvey, completed Marlowe's *Tragedy of Dido*, 1594, and was imprisoned in the Fleet on account of his suppressed comedy, *The Isle of Dogs*, 1597. His works have been edited by R. B. McKerrow, 4 vols., 1904-10.

NASHVILLE. City of Tennessee, U.S.A., the state capital. It stands on the Cumberland river, 185 m. S. by W. of Louisville, and is served by the Louisville and other rlys., and by steamers. An important educational centre, it is the seat of the Vanderbilt and Fisk universities, etc. Nashville is a flourishing industrial city, flour milling being especially important. In 1864 it was the scene of a fierce battle between the Tennessee army and the Federal forces, ending in a victory for the latter. Pop. 136,220.

NASMYTH, ALEXANDER (1758-1840). Scottish painter. Born at Edinburgh, Sept. 9, 1758, he studied in London and in Italy. Settling at Edinburgh, he tried portrait painting, but abandoned it for landscape. He was a member of the Society of Scottish Artists, an associate of the Royal Institution, and exhibited at the R.A., London. He died April 10, 1840. See Burns, Robert.

His son, Patrick, or Peter (1787-1831), also a painter, settled in London, exhibited from 1809 at the R.A., and was an original member of the Society of British Artists. He was acclaimed as the English Hobbema.

NASMYTH, JAMES (1808-90). British engineer. Born at Edinburgh, Aug. 19, 1808, he became an adept in making models of steam and other engines. In 1834 he opened a foundry in Manchester, and, in partnership with H. Gaskell, worked up a prosperous business. In 1842 he patented the steam hammer by which his name is best known. He invented mechanical appliances, and constructed a telescope to assist his astronomical studies. He died May 7, 1890.



James Nasmyth, British engineer



Narwhal. Male specimen with long, tapering tusk

NASSAU. District of Germany, now part of the Prussian prov. of Hesse-Nassau. From it the family of Orange-Nassau took the title of count and duke. It was an independent state until 1866. Nassau takes its name from the little town of Nassau on the Lahn, where the ruling family built their castle, but Wiesbaden was the capital. In 1866 the duke joined Austria in fighting against Prussia, and consequently lost his duchy. In 1890 the head of this family became grand duke of Luxembourg. See Netherlands; Orange.

NASSAU. City, seaport, and chief town of New Providence, and capital of the Bahama Islands, B.W.I. It stands on a declivity of the N.E. coast, has a sheltered harbour, and exports sponges, sisal hemp, fruits, and salt. Founded by the English in 1629, it was almost destroyed by the Spaniards and French in 1703, but rebuilt in 1718, and fortified in 1740. In the American Civil War it was the headquarters of the blockade runners. It is in regular steam communication with New York, and has a wireless station. Pop. 12,975

NASTURTUM OR RADICULA. Genus of cruciferous plants including the water cress. The nasturtium of our gardens is the tropaeolum, or Indian cress (q.v.).

NATAL. Province of the Union of South Africa. Bounded S.W. and W. by the Cape Province and Basutoland, N. by the Transvaal and Mozambique, N.W. by the Orange Free State, and E. by the Indian Ocean, it includes Zululand, annexed in 1897, together with the districts of Vryheid, Utrecht, and part of Wakkerstroom, transferred from the Transvaal in 1903. Pietermaritzburg is the capital, and Durban the largest town. The area is 35,284 sq. m. Pop. 1,429,398, of whom 136,838 are whites.

The country was discovered by Vasco da Gama on Christmas Day, 1497, and was therefore named Natal or Terra Natalis. In 1843 it became a British colony. In 1844 it was added to the Cape of Good Hope, but in 1856 was made a separate colony. In 1893 it was granted responsible government, and in 1910 it joined the Union of South Africa. See S. Africa; Zululand.

NATAL. British armoured cruiser. She was destroyed by an internal explosion in Cromarty Firth, Dec. 30, 1915. Originally planned to be of the Duke of Edinburgh (q.v.) class, she was altered during construction, 1904-5, and was of the same class as the Achilles, Cochrane, and Warrior, displacing 13,560 tons, with 16,000 h.p., giving a speed of 23 knots. She carried six 9-2 guns.

NATALIE (b. 1859). Queen of Serbia. Born at Florence, May 14, 1859, daughter of a Russian colonel, Kechko, and of Princess Pulcheria Sturdza, a Rumanian lady, she married on Oct. 17, 1875, King Milan of Serbia. Separated from her husband in 1888, she retired to Wiesbaden with her son, Alexander. Milan secured the abduction of the boy, and obtained a decree of divorce. After the murder of Alexander and Draga in 1903, Natalie lived in retirement.



Natalie, Queen of Serbia

NATCHEZ. North American Indian tribe of Muskogian stock. In the 17th century they occupied nine villages in Mississippi. Their complex sun-worship, head-flattening, use of mounds as foundations of dwellings and temples, advanced pottery, and skilful weaving of mulberry-bark cloth perpetuated the culture of the mound-builders. Early in the 18th century the Natchez and their allies entered upon a war with the French settlers,

who drove the tribe across the Mississippi into Louisiana and partly destroyed them in Jan., 1731. The few existing Natchez are found chiefly with the Cherokees.

NATHANAE. Disciple of Jesus Christ. Practically nothing is known of him save that he came from Cana of Galilee (John 21, 2), and was brought to the Master by Philip (John 1, 45). Some scholars think he is identical with Bartholomew.

NATIONAL ANTHEM. Musical composition with words, officially adopted for ceremonial use as an expression of patriotism and loyalty to a national cause.

Britain has the earliest and the best in God Save the King, appropriated by Prussia as the melody for Heil dir im Siegerkranz and also by Denmark for her revised version of God Save the King, 1902. In La Marseillaise (q.v.) France has an outstanding example, and Haydn's Hymn to the Emperor, 1796, and Ivor's God Save the Tsar, 1833, gave to the Austrian and Russian empires respectively national anthems worthy of their dignity. The U.S.A. have no accepted national anthem, but during the Great War The Star-Spangled Banner was generally used as an equivalent.

NATIONAL ASSEMBLY. Name given to the governing body of the Church of England. It was set up under the Enabling Act of 1919 to take the place of convocation, but with somewhat wider powers than the older body. The assembly consists of three houses. The house of bishops consists of the two archbishops and all the diocesan bishops; the house of clergy contains representatives of the clergy; the house of laity consists of representatives of the laity of the two provinces, Canterbury and York. The assembly has power to legislate for the Church of England, but provision is made for keeping a certain amount of parliamentary control over its acts. See Archbishop; Church of England; Convocation; Laity.

NATIONAL ASSEMBLY. Name taken by the body responsible for the opening stages of the French Revolution. Having drawn up a new constitution, which Louis accepted, the national assembly was dissolved Sept. 30, 1791.

In 1871, after the capitulation of Paris, a national assembly was chosen to treat with Germany for peace. It was responsible for the constitution at present in force. To-day the name is given to the Chamber of Deputies and the Senate, when they sit together for the election of a president, or some other special purpose.

In 1918, after the abdication of the Kaiser, it was decided to call a German national assembly to decide the future of the country. The members of this were elected by all men and women over twenty years of age, and it met at Weimar early in 1919.

NATIONAL DEBT. Term used for the money owing by a state. It takes various forms, war loans and consols in the United Kingdom and rentes in France, for instance, and is usually divided into permanent and temporary or floating debt. It does not include money borrowed by local authorities except when guaranteed by the state.

At the commencement of the Great War in 1914 the British national debt of a little less than £700,000,000 was £152,000,000 less than its total at the end of the war with Napoleon. This was chiefly in the form of consols. The amount of debt created in five years amounted



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God save our gracious King.
Long live our noble King.
God save the King!
Send him victorious,
Happy and glorious,
Long to reign over us,
God save the King!

Frustate their knavish tricks:
On Thee our hopes we fix:
God save us all!

Thy choicest gifts in store
On him be pleased to pour:
May he defend our laws,
And ever give us cause
To sing with heart and voice—
God save the King!

National Anthem, Music and words of the British National Anthem

In Jan., 1923, the British government accepted the terms for repayment of its debt to U.S.A. The total debt was \$856,000,000, plus interest unpaid for 2½ years, making approximately £900,000,000. The interest is at 3 p.c. for ten years, then 3½ p.c. The total annual payment by Britain is approximately £31,500,000 for 10 years, then £36,000,000 for another 52 years.

The National Debt is divided into the internal debt and the external debt. The internal debt is divided into the funded and the unfunded debt. The external debt consists chiefly of the amount owing to the United States.

Against her vast liabilities may be set the amounts owing to Great Britain by certain of the British Dominions, and by various countries in Europe, and also certain other assets, such as shares in the Suez Canal, valued at over £72,000,000, in the Anglo-Persian Oil Co., etc.

The amounts owing from foreign countries are:

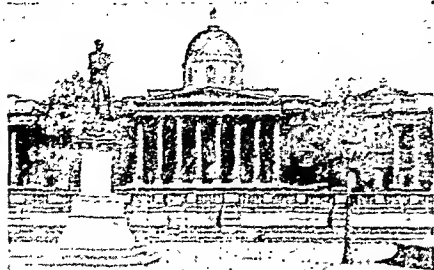
	£
France	722,018,000
Italy	202,500,000
Yugoslavia	32,450,000
Rumania	29,950,000
Portugal	29,300,000
Greece	25,100,000
	<hr/>
	£1,034,318,000

In addition, about £31,000,000 is owing for relief loans and £934,000,000 by Russia.

The amount owing by the various parts of the Empire is £120,538,696, Australia and New Zealand being responsible for £110,000,000. With other assets of varying value this makes a grand total of £2,354,174,205.

To reduce the national debt an unknown donor, in 1928, gave £500,000, and the earl of

Incebae gave the balance of his daughter's (Hon. Elsie Mackay's) estate, amounting to £521,000, for the same purpose



National Gallery, London. Façade from Trafalgar Square; in the foreground, statue to General Gordon

NATIONAL GALLERY. Chief art collection in Great Britain. It is in London, and was begun by the purchase by the British government of the Angerstein collection of pictures in 1824. It was notably extended by the purchase, in 1871, of the Peel Collection, and later purchases and gifts have made it one of the most representative collections in Europe. The pictures are arranged according to schools of painting, and the collection is particularly rich in examples of the Flemish and Dutch schools, the Florentine, Venetian, and Umbrian schools being represented almost equally well. Among the Spaniards Murillo, Velasquez, and Goya, and among the Frenchmen Claude and Poussin are magnificently represented, while the British school is displayed from its beginnings. The existing gallery in Trafalgar Square was completed and opened in 1838, and reopened after enlargement in 1861. It is controlled by trustees and a director.

Another national gallery is the one, chiefly for British art, at Millbank, London, usually called the Tate Gallery. There is a Scottish national gallery in Edinburgh.

NATIONALIST. Name used for an Irish political party. This appeared in an organized form about 1870 under the leadership of Isaac Butt, and was strong in the British House of Commons after the general election of 1874, becoming still more so under the direction of C. S. Parnell. Its main object was to secure home rule for Ireland. With about 80 members, it exercised considerable influence in British politics. Split after Parnell's appearance in the divorce court in 1890, the party was reunited under J. E. Redmond, but it almost disappeared at the election of 1918, its place being taken by Sinn Féin. See Home Rule; Ireland; Parnell, C. S.; Sinn Féin.

NATIONAL MARK. Mark placed on certain articles of food to show that they are produced at home. The mark is applied by consent of the Minister of Agriculture under an act passed in 1928. Among the foodstuffs that can be marked are beef, eggs, flour, tomatoes, cucumbers, broccoli, and apples.

NATIONAL PORTRAIT GALLERY. Building in St. Martin's Place, London, W.C. It contains, paintings, sculptures, and drawings of men and women who have figured with distinction in the history of the United Kingdom. The gallery was founded by Act of Parliament, June 6, 1856, and after three earlier homes the collection was housed in the present building in 1896.

The Scottish National Portrait Gallery, Queen Street, Edinburgh, was opened in 1889. It is built in 14th century Gothic style.

NATIONAL TRUST. British society for preserving places of historic interest or natural beauty. Founded in 1895, it holds in trust for the nation Wicken Fen, Box Hill, Minchinhampton Common, land at Stonehenge, the Golden Valley, Hindhead, and estates in the Lake District and elsewhere. It has also the

care of 8,000 acres of Exmoor. The offices are at 7, Buckingham Palace Gardens, London, S.W.1.

NATIVE CURRANT (*Leptomeria bilardieri*). Shrub of the order Santalaceae, native of Australia. The numerous, slender branches are erect, and without leaves except near their extremities, where they are very small. The currant-like berries are acid and somewhat astringent, but they make a good preserve and a cooling, acid beverage.

NATIVITY. Name of several festivals in the Christian churches. That of Christ's Nativity, usually known as Christmas Day, has been celebrated since the 5th century on Dec. 25. Representations of Christ's Nativity occur often in carvings on early sarcophagi, ivory carvings of the 8th and 9th centuries, in MS. illuminations, stained glass, and wall-paintings. In astrology the word is used as a synonym for horoscope.

NATTERJACK (*Bufo calamita*). Running toad or golden back, a native of Europe, including Britain. It is of slighter build than the common toad. It progresses by walking or short runs, instead of hopping, and is found mostly in sandy situations, drier than those affected by the common toad. The male has an internal vocal sac which distends the throat when the natterjack utters his rattling note, which is somewhat suggestive of the call of the nightjar. See Toad.

NATURAL. Musical sign ♮ used to neutralise the effect of a sharp or flat. It probably derives its name from the key of C, which is known as the natural key, and has no sharps or flats. See Flat; Sharp.

NATURAL GAS. Name given to certain gases occurring in mineral deposits. By boring in search of oil many reservoirs of natural gas have been tapped, particularly in the U.S.A., and there are large supplies in Canada, especially in Ontario. In the U.S.A. it was first used in 1821, and it has been used at Pittsburg for iron smelting. See Fuel.

NATURALIZATION. Term used in law to denote the process whereby an alien becomes a subject. In Great Britain the home secretary may grant a certificate of naturaliza-

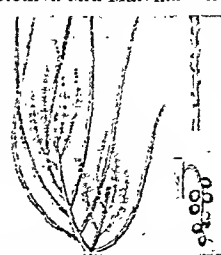
tion to any alien who applies for one, if the applicant satisfies the home secretary (a) that he has resided in British dominions for five years at least, of which the last year before the application must be in the United Kingdom, and four years within the preceding eight years in any part of the British dominions; or has been in the service of the crown for at least five years within the preceding eight years; (b) that he is of good character and has an adequate knowledge of the English language; (c) that he intends to reside in the British dominions or to continue in the service of the crown. The certificate has no effect until the applicant has taken the oath of allegiance. A woman who lost her British nationality by marrying an alien and whose husband is dead, or marriage dissolved, may apply without evidence of residence.

Canada, Australia, New Zealand, South Africa, and Newfoundland have power to issue Imperial certificates of naturalization to persons qualified, with slight modifications, under the above statute. See Alien.

NAUCRATIS. Ancient Greek colony in Lower Egypt. Situated on the Canopic arm of the Nile, it was founded by traders from Miletus in the 7th century. Under Aabmes II, c. 564 B.C., it monopolised Greek trade in Egypt. The site was identified by Flinders Petrie in 1885, and excavated by him and

by D. G. Hogarth in 1899. The chief building found was the Hellenion, a fortified store-house and sanctuary for Greek residents in Egypt.

NAURU. Island of the Pacific. It is 26 m S. of the Equator, midway between the Solomon and Marshall Islands. Its importance



Native Currant. Flower sprays. Inset, above, branch with leaves; below, fruit

is due to its rich deposits of phosphates. The island was annexed by Germany in 1888, but, having been taken by the Australian forces in 1914, is governed by the British under the League of Nations. Australia and New Zealand share with Great Britain in the administration. The first administrator was appointed by Australia, for five years. There is a wireless station. The area is about 8 sq. m. Pop. 2,614, including 134 Europeans.

NAUSICAA. Greek heroine mentioned in the Odyssey, 6. She was the daughter of Alcinous, king of the Phaeacians, and the shipwrecked Odysseus found her playing at ball with her maidens on the shore. Pitying his plight, she conducted him to her father, by whom he was entertained. See Odyssey.

NAUTCH GIRL (Hind. nāch, dance). Indian dancer. These girls are carefully chosen for their beauty when young to be priestesses to the god Rondzu. Apart from their dancing in the temples, they are hired to amuse guests by dancing and singing. The dance consists of posturing and slow steps, each part of the body being made to express emotion.

NAUTILUS. Genus of cephalopod molluscs, related to the cuttles, but having a spiral chambered shell. The nautilus lacks the tentacles of the cuttles, but has fringed lobes round the mouth. It crawls by means of its foot on the bed of the ocean like a snail, and feeds upon other molluscs and small crustaceans. It is also able to swim like the cuttles,



Nautilus. Chambered or Pearly Nautilus, *Nautilus pompilius*

by expelling water from its siphon. It is found in the Pacific Ocean, the living animal being rarely seen. There are probably only three living species, of which the pearly nautilus is the best known. The nautilus occupies the outermost chamber only. The Argonaut (q.v.) is often called the paper nautilus.

NAVAL CADET. Name given to boys training for commissions in the British navy. They are trained under a scheme inaugurated in 1903. Under this scheme the boys are all trained at the R.N. College, Dartmouth. To enter this they must apply to the Admiralty and go before a committee for an interview. The required number are then selected and sit for a qualifying examination. The age limits on entry are between 13½ and 13¾ years. The cadets spend nearly four years at the college, after which they go to sea for eight months. At the end of that period, if they have proved satisfactory, they become midshipmen. A certain number of cadets can enter the navy at a later age. These are chosen after a competitive examination for the executive, paymaster, or engineering branches. They must be between 17½ and 18½ years of age. See Midshipman.

NAVAL DIVISION. ROYAL. Body of volunteers raised by the British admiralty in the Great War. Each battalion was named after a famous admiral, e.g. Anson, Drake.

Hawke, Hood. The headquarters were at the Crystal Palace, London, where the men were trained. Popularly known as the R.N.D., a detachment was sent to Antwerp in Oct., 1914. Part of the force fought in Gallipoli in 1915, and later in France, where the division was ultimately disbanded and distributed among other units. As the R.N.D. it captured Beaucourt, Nov. 13-14, 1916, in the battle of the Ancre.

NAVAL RESERVE, ROYAL. British naval unit. It was established in 1859 to form a reserve from which to draw in the event of war, and consisted entirely of officers and men of the mercantile marine. They had to do at least one year's training aboard a warship, and also to undergo instruction in gunnery and torpedo schools. R.N.R. ratings are now enrolled for a term of five years, and the total period of any man's service in the reserve will not exceed



Naval Reserve,
officer's badge

five terms of five years each, the last term being for shore and harbour service only. The R.N.R. was mobilised on Aug. 3, 1914, and by Aug., 1917, the officers had increased from fewer than 2,000 to close upon 12,000. It served in almost every sea, and took part in mine-sweeping and in patrol duty. See Mercantile Marine; Navy.

NAVAN. Urban dist. of Meath, Irish Free State. Standing where the Blackwater falls into the Boyne, it is a junction on the Great Southern Rlys., 30 m. from Dublin. The town has a trade in agricultural produce and is a fishing centre. It sent two members to the Irish parliament until 1800. Pop. 3,625.

NAVARINO, BATTLE OF. Naval battle fought Oct. 20, 1827, during the Greek War of Liberation. The British, French, and Russian fleets, under the command of Sir Edward Codrington, engaged the Turkish and Egyptian fleets at very close quarters, with the result that the latter were almost completely destroyed and the Turks were obliged to abandon Greece. Navarino, now called Pylos, is a seaport in the Morea, with a fine harbour. See Pylos.

NAVARRÉ. Former kingdom of S.W. Europe. On the western borders of France and Spain, at the angle of the Bay of Biscay, it included the W. part of the Pyrenees, with a small part of Gascony and a considerable but varying area in Spain.

In the 15th century the crowns of Navarre and Aragon were united by the marriage of Blanche of Navarre to John of Aragon; on his death, in 1479, Navarre was claimed by Catherine of Foix, his grand-daughter. Catherine married Jean d'Albret, and retained French Navarre with the royal title, while in 1516 Ferdinand annexed Spanish Navarre, still a prov. of Spain. In 1620 French Navarre ceased to have the status of a kingdom.

NAVE (Lat. navis, a ship). In ecclesiastical architecture, the largest, i.e. the middle, section of a church divided by piers or columns into three parts. As such the nave includes the choir and the height of the clerestory, but when the choir is shut off from the body of the church, it is commonly excluded from the term nave. See Basilica; Cathedral; Choir.

NAVIGATION. Art of directing a ship from one position to another, and of determining its position at sea at any moment. A chart and a mariner's compass are required. Charts have the latitude and longitude and the true or magnetic north marked on them. The present position of a vessel and the one it is desired to reach are plotted on the chart,

which thus gives the course to be made good. To discover from the chart the course to be steered in order to arrive at any desired position, the mariner must know the position of his vessel.

In sight of land this is found by taking compass bearings of prominent objects. The position of these objects is shown on the chart. Three or more objects are selected, so that the compass bearings cut one another at a fairly large angle. Through each object on the chart is then drawn the observed compass bearing, and the point where these lines cut is the position at the time of observation.

When out of sight of land, the approximate position at any time can be found by calculating the number of nautical miles the vessel has travelled along the course from the last known position and then plotting this distance on the chart. Such an approximate position is called dead reckoning (D.R.). The exact position of a vessel when out of sight of land is obtained by observation of the heavenly bodies, such as stars or planets. The altitude of the heavenly body is measured by a sextant and the Greenwich time is noted at the instant the altitude is observed. The D.R. position is calculated at this moment.

NAVIGATION ACTS. Term applied to a number of enactments designed to regulate shipping to the advantage of British ships. Cromwell's Navigation Act of 1651 was the first comprehensive enactment. This act benefited English shipping, but it raised the price of imports and caused a war with the Dutch. The acts were repealed in 1849, and in 1854 the coastwise trade was thrown open.

NAVY (Lat. navis, ship). Term used for the collection of men and ships that form the force a country maintains for fighting at sea. Practically every country which has a sea-board has a navy, although a number of them are of little value as fighting units.

The events of the Great War, especially the disappearance of the German navy, altered materially the world's naval position. The United States claimed parity with Great Britain, and attempts were made at Washington in 1923 and London in 1930 to limit the size of navies.

Britain, the United States, and Japan came to an agreement, embodied in the London Naval Treaty (q.v.), with regard to the number of ships to be retained, built, and scrapped. The particulars are given in the table below.

Types	British Empire	United States	Japan
Battleships and battle cruisers	15 remaining 5 to be scrapped	15 remaining 3 to be scrapped	9 remaining 1 to be scrapped
Aircraft carriers	6 remaining 3 to be built	3 remaining 4 to be built	3 remaining 3 to be built
Cruisers	46 remaining 4 to be built	12 remaining 26 to be built	28 remaining 5 to be built
Destroyers	132 remaining 38 to be scrapped	143 remaining 80 to be scrapped	87 remaining 24 to be scrapped
Submarines	44 remaining 19 to be scrapped	55 remaining 24 to be scrapped	38 remaining 23 to be scrapped

In the above table the phrase to be built includes all ships not 100 per cent. complete in May, 1930. Obsolete ships, such as destroyers over 16 years old and submarines over 13 years old, are not included in ships to be scrapped.

BRITISH NAVY. The history of the British navy may be said to begin with the long ships of King Alfred, which marked a great advance upon their predecessors. The nearest approach to a permanent force was the organization of the Cinque Ports, where the barons kept their vessels at the disposal of the king in

return for the enjoyment of certain privileges. John made some beginning of a fixed organization by appointing a "keeper of the king's ships." The victory of Sluys, in 1340, marked the zenith of English sea power in medieval times. Admirals began to be appointed in Edward I's reign. Guns were mounted in the 14th century. In Tudor times ships were specially built for naval purposes. Henry VIII's great ship was an imposing vessel, carrying two lines of guns on her lower decks, and another on her half deck and fore-castle. Massive structures rose like fortalices at the bow and stern, and the latter had eight decks and five lines of guns.

The great explorations of the 15th and 16th centuries resulted in rapid development in shipbuilding, navigation, and organization. The defeat of the Spanish Armada in the fighting of many days in 1588, all the way up the Channel, was one of the decisive battles of the world. The reign of James I saw the division of the royal fleet into rates and the institution of squadrons, or groups of ships, for the defence of the narrow seas, by means of a summer guard and sometimes a winter guard. In 1637 came the Sovereign of the Seas, the first three-decker in the navy. The government of the navy had rested with the lord high admiral and a board of principal officers, but Buckingham had a council of commissioners, who supervised dockyard affairs and built two ships a year for five years.

The men of the Commonwealth imparted new vigour and earnestness to the navy. It gained rapidly in numbers and strength, becoming a permanently organized force in every department; the officers were trusted, and there was better pay, food, and clothing for the men. At the Restoration, when James, duke of York, became lord high admiral, a great impetus was given to the internal organization of the fleet and the strengthening of its administration. The navy was thenceforth directed by principal officers, who were men of experience actually bred to the sea. Their successors became the navy board, and existed long after the office of lord high admiral had been placed in commission in the board of admiralty. James II did much for the betterment of the naval service, and had an establishment of 173 vessels, including 9 first-rates, 11 second-rates, and 39 third-rates. They went over to William III, in whose reign the long struggle with France began. The navy was for a time supreme, and under its aegis the resources of the empire grew, and English trade spread on every sea.

The Seven Years' War found England not fully prepared. Corruption had not been uprooted, and only by a vigorous use of the press-gang, and the offering of bounties, could men be obtained. Nevertheless, Britain increased her territory at the expense of France. In the American War of Independence, however, she was beaten at sea.

During the wars with France which terminated at Waterloo, ships increased in numbers, and every available ship was made ready for sea. Jervis's great victory off Cape St. Vincent, and Duncan's destruction of the Dutch fleet at the Texel, both in 1797, put

an end to the schemes of invasion. After the peace of Amiens, March 25, 1802, the naval establishments were subjected to examination, with the object of putting an end to the corruption. Its efficiency was proved at Trafalgar. The introduction of steam brought about profound changes in the navy. There began a

long contest between the gun and the armour. The torpedo was invented, and gained year by year in range and destructive power. New classes of ships were introduced—torpedo-boats, destroyers, and submarines. The invention of the steam turbine imparted a fresh impetus to power. The progressive and fearless administration of Lord Fisher gave the navy ships mounting nothing but big guns, with an auxiliary or secondary armament for anti-torpedo purposes. Oil to a very great extent replaced coal as fuel. The practical and scientific training of officers and men progressed. After the Great War came a period such as has followed most wars—naval reductions, the sale or breaking-up of ships, and discussion of war lessons and types of ships.

The official handbook of the British Navy is known as the Navy List. It was issued in 1814, and is published monthly.

NAXOS. Island of the Cyclades group, in the Greek Archipelago. It covers about 175 sq. m. Mountainous, picturesque, and fertile, its culminating point is 3,300 ft. high. It is noted for its wine, and produces cereals, oil,



Nazareth. General view of the town in Galilee

forces in a naval engagement.

NAZARETH. Town in Galilee, on the slope of a hill half-way between the Lake of Galilee and the sea. Now known as En Nasira, it is famed as the early home of Christ. Nazareth was occupied by the British, Sept. 20, 1918. Pop. 7,424. See Palestine.

NAZARITES OR **NAZIRITES.** Word meaning separated, and applied to certain Jews. These devoted themselves to the service of God, abstained from wine, allowed their hair to grow long, and avoided contact with dead bodies. As a rule the vow was only temporary, usually taken for a month, at the termination of which certain sacrifices were offered, and the head was ceremonially shaved.

Naze, THE. Headland on the E. coast of Essex, 5 m. S. of Harwich.

NEAGH. Lough or lake of Northern Ireland. It is bordered by the counties of Antrim, Londonderry, Tyrone, Armagh, and Down, and measures 18 m. in length and 10 m. in breadth. Numerous rivers feed the lake, including the Blackwater and the Upper Bann, while the Lower Bann discharges its surplus waters into the Atlantic. Pron. Nay.

NEALE, EDWARD VANSITTART (1810-92). British cooperator. Born at Bath, April 2, 1810, he was called to the bar in 1837. In 1850 he joined the Society for Promoting Working Men's Associations, and used his wealth in opening the first cooperative store in London. In 1851 he founded the Central Co-operative Agency, precursor of the Co-operative Wholesale Society, which failed after a few months. He organized cooperative societies in other parts of the kingdom, and in 1869



E. V. Neale, British cooperator

promoted the annual cooperative congress, of which he became secretary, 1875-91. He died Sept. 16, 1892. See Cooperation.

NEANDERTHAL MAN. Palaeolithic race inhabiting Europe during the Mousterian period. It was first revealed by the discovery of a human burial in a grotto of the Neanderthal ravine near Düsseldorf in 1856. Its fossil remains have since been found in widely scattered caves and summer-camp stations, including the Ghar Dalam cave, Malta, 1918. See Anthropology; Man; Mousterian.

NEASDEN. District of Middlesex, practically a suburb of London. Neasden and Kingsbury is a station on the Metropolitan Rly., which has carriage works here.

NEATH. Borough, market town, and river port of Glamorganshire, Wales. It stands near the mouth of the river Neath, 8 m. from Swansea, and is served by the Great Western Rly. and by two canals. There is another station at Neath Abbey. The industries include copper smelting, tin-plate works, steel works, chemical factories, foundries, engineering works, etc. In the 12th century an abbey and castle were founded at Neath, and there are remains of both. Market days, Wed. and Sat. Pop. 34,700.

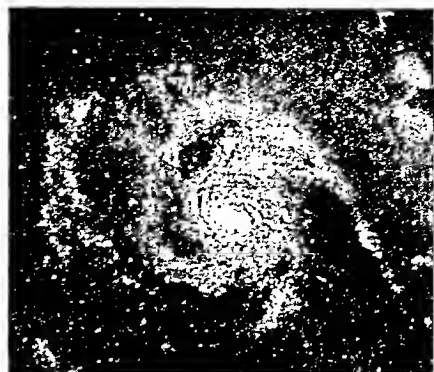
NEBO. God of the ancient Babylonians. The son and interpreter of Merodach, he was regarded as the writer of the first book and instructor of mankind in letters and science. There was a temple to him at Borsippa.

NEBO. Mountain in Moab, near the N. end of the Dead Sea, from which Moses viewed the promised land just before his death (Deut. 34). Its alternative name is Pisgah.

NEBRASKA. Central state of the U.S.A. Its area is 77,510 sq. m. The surface is an elevated plain sloping from an alt. of 5,000 ft. in the W. to about 1,000 ft. in the E. Part of the N. and N.W. is occupied by "bad lands" and sand-hills. The Platte (or Nebraska) and Niobrara rivers flow through the state to the Missouri, the natural boundary on the E. Agriculture has been developed by irrigation, and large crops of maize, wheat, oats, and potatoes are obtained. Higher education is provided by a state university and other institutions, and transport facilities by 6,500 m. of rlys. Lincoln is the capital, but Omaha is the most populous centre. Nebraska City (pop. 6,279), 53 m. S. of Omaha, occupies the site of old Fort Kearney. Pop. 1,408,000.

NEBUCHADREZZAR OR **NEBUCHAD-NEZZAR.** Name of three kings of Babylon. The most famous, Nebuchadrezzar II, son of Nabopolassar, reigned 604-561 B.C., invaded Judah thrice, taking Jerusalem and carrying many Jews into captivity, 586; captured Tyre after a siege of 12 years and invaded Egypt. He restored many temples and rebuilt Babylon, where Koldewey's excavations, 1899-1911, revealed his palace, temples, gates, and canals. See Babylon; Necho.

NEBULA. In astronomy, a celestial object which cannot be resolved by the telescope into a star, or group of stars, as distinct from comets. Nebulae were first catalogued by Messier in 1771. Afterwards the Herschels catalogued 5,000 of them, but since many so-called nebulae were later found to be star clusters it was believed all nebulae were assemblages of very distant stars. Spectroscopy disproved this assumption, when Huggins showed, in 1864, that the Draco nebula was a mass of incandescent gases. Since then, however, the application of the spectroscope, by revealing many differences in their spectra, has evoked the speculation that some nebulae may in fact be groups of stars outside the stellar universe. See Andromeda; Astronomy; Milky Way; Orion; Planet.



Nebula. Spiral nebula in Ursa Major, from a telescopic photograph by G. W. Ritchey

NEBULAR HYPOTHESIS. Theory to account for the origin of the planetary system. First suggested by Kant, in 1755, and placed on a more definite basis by Laplace, it postulates that the matter which now forms the sun, planets, and satellites existed once in the form of a globular gaseous mass extending from the sun's present position as a centre out to, or beyond, the orbit of Neptune. As this mass rotated it gradually flattened, its particles consolidated, and its speed of rotation increased. As a consequence some of the gaseous matter would be detached in the form of a ring. This ring would break up into separate globular masses which would ultimately coalesce in the largest of them and thus form the first, and outermost, planet, and so for other planets.

NECHO OR **NECHOR.** King of Egypt (610-594 B.C.). The Egyptian Nekau, he succeeded his father Psammetichus I, founder of the XXVIth dynasty. He reconquered Syria, defeating and slaying Josiah of Judah at Megiddo, 609 B.C. Nabopolassar, king of Babylon, sent his son Nebuchadrezzar to Syria, with the result that Necho was defeated at Carchemish 605 B.C. and lost the whole of his conquests in Syria and Palestine.

NECK. Part of the body which unites the head with the trunk. The neck supports the head by means of the cervical vertebrae. In front of the bony pillar lies the oesophagus, terminating above in the pharynx, and in front of these are the trachea and larynx. The thyroid gland is situated in the lower part of the neck. The carotid arteries pass up from the thorax to the head at the side of the neck, and the jugular veins pass downwards close to the carotid arteries. The most prominent muscles of the neck are the sterno-mastoids, one on each side, and the trapezii, which pass up from the back and are inserted into the occipital bone at the lower part of the back of the head.

NECKAR. River of S. Germany, a right bank tributary of the Rhine. Rising between the Black Forest and the Swabian Jura, it flows N.E. and N. through Württemberg and Baden, turning W. to join the Rhine at Mannheim (q.v.). Its length is about 250 m.

NECKER, JACQUES (1732-1804). French financier and statesman. Born at Geneva, Sept. 30, 1732, he became a banker in Paris. Director of the treasury, 1776, he was made director-general of finance in 1777. He published his *Compte Rendu*, 1781, and his treatise on French financial administration, 1784. Exiled from Paris, 1787, he was recalled as director-general in 1788, and was responsible for summoning the states-general and doubling the representation of the third estate. He died April 9, 1804.

His wife, Suzanne Curchod Necker (1739-94) had a brilliant salon, frequented by such men as Diderot. Famed also for her charities,

she founded, 1778, and for some years administered, the Hôpital Necker in Paris. She died in May, 1794. Her daughter, Anne Louise Germaine, became Madame de Staël (q.v.).

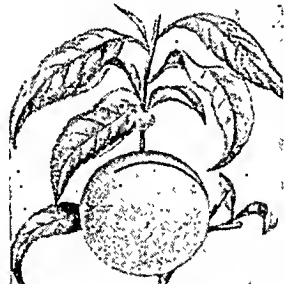
NECROMANCY (Gr. nekros, corpse; manteia, divination). Divination by pretended communication with the dead. The art is usually exercised by professional sorcerers, as in the familiar example of the witch of Endor, in 1 Sam 28, who professed to evoke the spirit of the prophet Samuel at the behest of Saul. Necromancy still prevails widely in primitive culture. In most instances offerings are made to the spirits to secure their goodwill and their aid in attaining the desired result. See Divination; Magic

NECROPOLIS (Gr. nekros, corpse; polis, city) Word meaning a city of the dead. It was anciently applied to an outlying part of Alexandria which was set apart for burial purposes, and is used in connexion with modern cemeteries, such as those at Woking, in Surrey, and at Glasgow.

NECROSIS. In pathology, the death of a limited portion of tissue. The term is often applied specifically to destruction of bone. Generally necrosis is caused by the failure of nutrition of any tissues. See Gangrene.

NECTAR. In Greek mythology, the drink of the gods, their food being ambrosia. It was supposed to confer immortality on those who drank it, and on that account was forbidden to mortals. See Ambrosia.

NECTARINE. Edible fruit, a smooth-skinned variety of the peach (q.v.). The method of cultivation and habit of both nectarine and peach are similar, but the fruit of the nectarine is more tender of skin than the peach, and therefore must not be touched by hand during development, or the ripened fruit will be bruised and spoiled.



Nectarine. Branch with foliage and ripe fruit

Needles, THE. Group of three chalk rocks off the W. end of the Isle of Wight. On the westernmost rock is a lighthouse.

NEEDWOOD. Forest in Staffordshire. A royal hunting ground, it lay between Stafford, Burton, and Lichfield, and was stocked with deer and wild cattle. Its area was greatly reduced in the 17th century, and in 1801 the rest was disafforested. Most of it is now under cultivation, but a little remains forest.

NEGLECTANCE. In law, the want of reasonable care or diligence in the performance of a duty. In order to found an action for damages for negligence, the plaintiff must show that the defendant owed some duty not to be negligent, and that, in consequence of his breach of that duty, actual damage has resulted to the plaintiff or his property.

The duty may be a contractual one, as where a solicitor is negligent in the conduct of an action for a client; or it may be a duty which the defendant owes to all the world, as where an action is brought in respect of personal injuries caused by the negligent driving of the driver of a vehicle. In certain cases, want of skill is negligence. Error of judgement is not negligence; nor is the lack of presence of mind in face of sudden danger.

NEGRO (Lat. niger, black). Name of the dark-skinned, woolly-haired races who inhabit W. Africa S. of the Sahara, and, farther E.,

the region S. of a line reaching the Indian Ocean near the river Tana. The negro is allied, zoologically, to the negroid, e.g. Melaneseans, to the pygmy, and to the negrito, e.g. Semang and Acta; except as regards hair, he comes nearer to the anthropoids than do the white races (see illus. p. 701).

As regards social organization, large areas may be governed by tribal chiefs; in other cases the chief's authority is limited to a single town, or even a quarter of a town. But on the Congo, the lower and middle Niger, in Dahomey, etc., powerful empires and kingdoms arose and flourished. African societies are in the main democratic, without well marked distinctions of rank, except in so far as slavery is practised. The negro is free to marry as many wives as he can purchase. Liberia (q.v.) is a negro republic of W. Africa.

NEGROES IN AMERICA. The negro population of the New World is between 20 and 30 millions, of which about 10,500,000 are in the U.S.A.

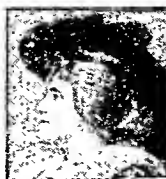
The negro problem in the U.S.A. became acute after the emancipation of the slaves. For a time the negro vote controlled most of the south, and much corruption and misgovernment followed. A Democratic reaction followed, and special legislation in some states practically disfranchised the negro. In the south the segregation of the negro in public conveyances, schools, places of amusement, and churches is enforced and inter-marriage prohibited. Statistics of crime show a percentage four times as great as that of the whites. The early attempts to solve the problem by repatriation having failed, effort is now concentrated on education.

With the exception of Cuba and Porto Rico, the West Indies have an overwhelming preponderance of negro inhabitants. In Barbados the negro is seen at his best, and is progressing steadily. In S. America, Brazil and Guiana have the largest negro admixture. There is no acute colour question, the negroes having crossed extensively with the whites. Unlike the negroes of N. America, who are of Mandingo and allied stocks, those of Brazil are to a great extent Bantu, their ancestors having been brought from Angola. See Africa; Bantu.

NEGUS. Warm beverage made of port wine and water, sweetened with sugar and flavoured with lemon, cloves, nutmeg, etc. The water, in the proportion of one-half to two-thirds, should first boil, and sherry may be substituted for port. It is named after its inventor, Col. Negus, master of the buckhounds, 1727.

NEHEMIAH. Reputed author of an O.T. book, closely related to the books of Ezra and Chronicles. It records the work in Jerusalem of a Jewish euphearer of Artaxerxes, who in 444 B.C. was appointed Persian governor of Judah. Nehemiah made two visits to Jerusalem, where he inspected the rebuilding of the walls and introduced various reforms.

NEILSON, JULIA (b. 1869). British actress. Born in London, June 12, 1869, she made her debut as Cynisca in Pygmalion and Galatea, at The Lyceum, London, March 21, 1888. At The Haymarket, 1889-94, she achieved success as Julie de Noirville in A Man's Shadow; Pauline in Called Back; Olga in the Red Lamp. Her other successes include Nell Gwyn in Sweet Nell of Old Drury; Lady Blakeney in The Scarlet Pimpernel; and several Shakespearean parts, among them Rosalind in As You Like It. Julia Neilson married the actor-manager Fred Terry (q.v.).



Julia Neilson. British actress Effort & Fry

NEJD. Country of Central Arabia, part of the Arab kingdom of Hejaz and Nejd. On the E. side of the Hejaz, and extending E. to include Hasa on the N.W. of the Persian Gulf, it is the modern representative of the empire of the Wahabis (q.v.). Its people are pure Arabs, and its capital is Riyadh. on the pilgrim road from the Persian Gulf to Mecca. The emir Ibn Saud expelled the Turks from Hasa in 1913, and was recognized as Vali in the following year. His independence dates from the downfall of Turkey during the Great War. In 1925 he completed the conquest of the Hejaz (q.v.) and was proclaimed king of the Hejaz in Mecca. The area is some 800,000 sq. m. Pop. about 1,275,000. See Arabia; Hejaz; Mecca.

NELSON. River of Canada. It carries the waters of Lake Winnipeg N.E. into Hudson Bay after a course of 390 m. Its main tributary is the Burntwood; owing to rapids it is navigable only for short distances. At its mouth stands Port Nelson. The name is sometimes applied to the same stream, otherwise called the Saskatchewan, before it enters Lake Winnipeg; the total length being 1,600 m. See Canada.

NELSON. Borough and market town of Lancashire. It is 3 m. from Burnley and 30 m. from Manchester, on the L.M.S. Rly. The industries include cotton and confectionery factories and engineering works. The chief buildings include the town hall, market hall, and technical school. There are several public parks and recreation grounds. A tramway service connects the town with Burnley, Colne, and other places in the vicinity. Market day, Wed. Pop. 39,841.

NELSON. Town of British Columbia. It stands on the west arm of Kootenay Lake, and is served by the C.P.R. and C.N.R., being 1,100 m. from Winnipeg. It is a centre for the mining, lumbering, and other activities of the neighbourhood, and has railway shops, saw mills, and works for making jam, cigars, etc. Pop. 7,000.

NELSON. Town of New Zealand. It lies on Tasman Bay, an indentation on the N. coast of South Island. Sheep rearing is the chief occupation, and the district yields fruit and hops. Pop. 12,250.

NELSON. British battleship. Completed in 1927, Nelson and her sister ship, Rodney, are the most powerful vessels in the British navy. Each cost over £7,000,000 to build. Nelson's principal armament is nine 16 in. guns; she also carries twelve 6 in. guns and six 4.7 anti-aircraft guns, as well as smaller ones. Her displacement is 35,000 tons and length 660 ft. See Battleship; Rodney.

NELSON, EARL. British title borne by the family of Nelson since 1805. Horatio Nelson's barony passed to his brother, the Rev. William Nelson, who, in recognition of Horatio's services, was made Viscount Merton and Earl Nelson in 1805. He, too, left no sons, and the titles passed to Thomas Bolton, a son of the admiral's sister, who took the name of Nelson and became the 2nd earl. Thomas Horatio Nelson, the 4th earl (b. 1857), succeeded in 1913. The family seat is Trafalgar House, near Salisbury, and the earl's eldest son is known as Viscount Merton.

NELSON, HORATIO NELSON, 1ST VISCOUNT (1758-1805). British admiral. Born Sept. 29, 1758, the sixth child of Edmund Nelson, rector of Burnham Thorpe, Norfolk, he entered the navy in 1770 as "captain's servant" in the ship of his uncle, Captain Suckling, served in the West Indies, in an Arctic expedition, and in the East Indies. He became captain in 1779; commanded the naval contingent against the Spanish fleet at San Juan de Nicaragua, 1780; joined Lord Hood's fleet at New York, 1782, and was employed in the West Indies, 1784-87. In 1787 Nelson

married Frances Herbert Nisbet. He commanded the Agamemnon in the Mediterranean fleet, in 1793, under Hood; was largely responsible for the capture of Bastia and Calvi in Corsica, in 1794, at which latter engagement he lost the sight of his right eye by a wound.

Present at the battle of St. Vincent, Feb. 14, 1797, he secured important results by disobeying orders. In Feb., 1797, he became a rear-admiral, and was knighted. On July 25, 1797, he failed in a night attack on Santa Cruz, Tenerife, and his right arm, shattered by grape, had to be amputated. Sent to intercept Napoleon, who had sailed from Toulon with a small fleet to invade Egypt, Nelson destroyed the fleet in Abukir Bay, Aug. 1, 1798. He was made Baron Nelson of the Nile, and given a pension of £2,000. In Sept., 1798, he went to Naples, was welcomed by Lady Hamilton, wife of the British minister there, and conveyed the king and court to Palermo, when the French took Naples in 1799. On the recovery of the city he was responsible for the execution of Caracciolo. Nelson was created duke of Bronte in 1800, and returned home with Lady Hamilton, and a daughter, Horatia, his only child, was born about Jan. 31, 1801. For his great victory of Copenhagen, in 1801, when he defeated the Danish ships and forced them to agree to an armistice, he was made a viscount. In Oct., 1801, he was allowed leave, and went to Merton Place, Surrey, which Lady Hamilton had bought.

In May 18, 1803, on the renewal of war with France, Nelson hoisted his flag in the Victory, to command the Mediterranean fleet, and a few weeks later began his watch of Toulon. On Oct. 21, 1805, was fought the battle of Trafalgar. Nelson drove the Victory into the enemy and was engaged by several ships. Conspicuous in his orders, he was mortally wounded by a marksman's bullet and carried below, where he died at 4.30 p.m. Nelson was given a state funeral in St. Paul's Cathedral, London, on Jan. 9, 1806. Horatia, his daughter, died in 1881, leaving many descendants of the family of Nelson-Ward. See Trafalgar.

NEMESIS. In Greek mythology, daughter of Night and one of the deities of the nether world. She was the goddess of vengeance, punishing the guilty, but at the same time rewarding virtue, and thus became the personification of respect for law and justice.

NEMI. Crater lake of Central Italy. It is in the Alban Hills, between Velletri and Albano, 20 m. S.E. of Rome. It is $3\frac{1}{2}$ m. in circuit, and covers 70 acres. It was called the Mirror of Diana, whose temple was in a neighbouring grove.

After the Great War the lake was excavated, and in 1929-30 was partly drained. The remains of two state galleys of the time of Caligula were recovered, as also were other Roman relics.

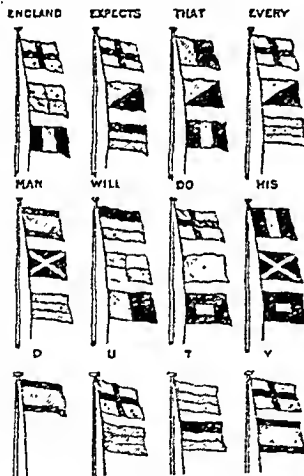
NEMOURS. Town of France. It is on the Loing, 10 m. S. of Fontainebleau. It was the chief town of a county, which in 1404 was made a duchy for the king of Navarre. This belonged in turn to the families of Bourbon, Armagnac, and Foix. After the death of Gaston de Foix, in 1512, the duchy passed under various rulers until, about 1670, it was given by Louis XIV to his brother Philip, duke of Orleans. The Orleans family held it until the Revolution. Pop. 5,074.



Horatio, Lord Nelson, as vice-admiral
After Hoppner

A later duke was Louis Charles (1814-96), a son of king Louis Philippe. He saw some service as a soldier, but took no part in public life after 1848. He died June 26, 1896.

NEN or **NENE.** River of England. It rises in Northamptonshire and flows S.E. to Northampton. Here it takes a N.E. direction past Wellingborough, Peter-Wisbech to the Wash, 3 m. below Sutton Bridge. It has canal communication with the central waterways of England. The Nen is navigable for small vessels. Its length is 90 m.



Nelson. The famous signal flown from the Victory before Trafalgar

borough, and which it enters 3 m. below Sutton Bridge. It has canal communication with the central waterways of England. The Nen is navigable for small vessels. Its length is 90 m.

NENAGH. Urban dist. of co. Tipperary, Irish Free State. It stands on the river Nenagh, 27 m. from Limerick, on the Great Southern Rlys. The keep of the castle, at one time the residence of the Butler family, still stands. Pop. 4,524.

NEODYMIUM. Rare earth metal of the cerium group. Its chemical symbol is Nd; atomic weight, 144.3; atomic number 60; specific gravity, 6.956; and melting point, 840°C. It was obtained in 1885 by Auer von Welsbach from didymium (q.v.), at that time thought to be an elementary substance. See Praseodymium: Rare Earth.

NEOLITHIC (Gr. neos, recent; lithos, stone). Term introduced by Lord Avebury to denote the later phase of the prehistoric stone-age civilization which preceded the use of metals. It is distinguished from the older or palaeolithic phase by the more advanced workmanship, especially the polishing and grinding of the cutting edges, as well as by the variety of form and use, displayed by implements wrought out of flint and other hard stones.

NEON. One of the gaseous elements. Its chemical symbol is Ne, atomic weight 20.2, and atomic number 10. It is present in the atmosphere in the proportion of about one part in 80,000. It occurs mixed with argon, and was discovered by Sir William Ramsay in 1898 when examining a large quantity of argon. Neon is recognized by its spectrum, which consists of a great number of red, orange, and yellow lines. Neon lamps, in which an electric discharge is passed through the gas, give out a brilliant orange-red light. See Element; Television.

NEO-PLATONISM. System of philosophy which attempted to replace the dualism of mind and matter by monism, and to solve

the problems of virtue and knowledge on a religious basis.

The keynote of the system is supposed direct intercourse with the absolute, divine being as the result of ecstatic visions. There are three cosmical principles: the One, absolute unity, which creates by emanation the Logos (word, reason), containing the ideas of things, which in turn produces the Soul, the principle of movement, which represents the ideas in the external world. Individual souls hover between reason and sense, ever striving to free themselves from the shackles of matter, and to return to the world of ideas, there to be absorbed and lost in God.

NEPAL. Independent kingdom of N. India. It lies N. of the plains among the Himalayas, and adjoins Tibet on the N. and Sikkim on the E. Dhaulagiri and Everest are within the state, which is drained by the upper waters of the Gogra, Gandak, and Kosi. The area is about 54,000 sq. m.

The government of Nepal is a military oligarchy, supported by an army of 45,000 men. There is a maharaja, but his power is nominal, all authority being in the hands of the prime minister, whose office is hereditary. Kathmandu, a town 75 m. from the frontier of India, is the capital. The people are chiefly Gurkhas (q.v.). Slavery was abolished in 1924. There is a British resident, but he takes no part in the internal affairs of the land. The first railway line in Nepal was opened in 1927. Pop. 5,600,000.

NEPHRITE. In geology, a variety of amphibole. White to dark green in colour, it is a calcium, magnesium, ferrous silicate, and has been highly valued as an ornamental stone in all countries and ages. The word jade is used to describe this mineral and jadeite, as they are extremely similar in appearance. Jadeite, however, is easily fusible, whereas nephrite is infusible.

NEPHRITIS. Inflammation of the kidney. It may be acute or chronic. Acute nephritis may be due to exposure to cold and wet, particularly after excessive indulgence in alcohol; poisoning by substances which irritate the kidneys, such as cantharides, turpentine, potassium chloride; and may occur in the course of various diseases, particularly scarlet fever. Shivering fits and rise of temperature may be the first signs. Dropsy occurs early, and may be first noticed as a puffiness of the face or swelling of the ankles.

The patient should be kept in bed, and the kidneys relieved of their functions as much as possible by stimulating the excretory activities of the skin and bowels. See Bright's Disease.

NEPTUNE. Planet supposed until 1930 to be the outermost of the solar system. It was first seen by Galle, who found it from particulars supplied by Leverrier on Sept. 23, 1846. It can only be seen by the telescope. The distance of Neptune from the sun is 2,794,000,000 m., and its period of revolution about the sun is 165 years. Its diameter has been calculated at about 31,225 m., and its mean density at 1.54. Its satellite revolves about the planet in a retrograde direction, or E. to W., in five days and twenty-one hours. There is spectroscopic evidence of an enveloping atmosphere of unknown gases, and also free hydrogen. See Planet; Pluto; Sun.



S. Philip Neri,
Italian priest

NERI, PHILIP (1515-95). Italian saint, founder of the Oratorians. Born at Florence, July 21, 1515, he went to Rome in 1533 and studied theology. He visited the sick, founded a hospital, established a Confraternity of the Holy Trinity, and delivered daily addresses

which attracted even princes and cardinals. In 1558 he formed a number of young men into the Congregation of the Oratory, an order of priests and laymen observing a common rule, but not under vows, their aim being to teach the ignorant and convert the worldly. He died May 25, 1595, and was canonised in 1622. See Oratorians.

NERO (37-68). Roman emperor. Originally named Lucius Domitius Ahenobarbus, he was the stepson of the emperor Claudius, by whom he was adopted in 50, thenceforth bearing the name of Nero. On the death of Claudius in 54, Nero was made emperor. For the five years of his minority the empire was well administered. Then Nero threw aside his tutors and ministers, and for nine years indulged in that orgy of tyranny which has made his name a byword. The horror grew till Galba, one of the provincial generals, led his troops upon Rome. The emperor fled, and when he heard the tramp of the approaching troops, died by his own hand, 68.

NERVA, MARCUS COCCERUS (32-98). Roman emperor. He was chosen emperor on the assassination of Domitian in 96, after whose tyranny his mild rule was a welcome relief. He took an oath that he would put no senator to death, and suppressed the worst of the informers who had disgraced the latter part of Domitian's reign. He adopted Trajan, and died Jan. 27, 98.

Marcus Nerva,
Roman emperor

NERVE. Cord-like structure composed of nerve fibres, i.e. long branches of nerve cells, termed neurons, which convey impulses from one part of the body to another. Nerves which convey impulses from nerve centres, such as the brain, are called efferent nerves, and those which carry impulses from the periphery to nerve centres are known as afferent nerves.

NERVOUS SYSTEM. System of nerve cells and nerve fibres which control or regulate the actions and functions of every part of the body. It consists of two main divisions, the cerebro-spinal system, comprising the brain and spinal cord, and the vegetative or autonomic, consisting of the sympathetic nervous system and certain other ganglia, i.e. aggregations of nerve cells and fibres. The cerebro-spinal system controls the movements of muscles and carries out actions consciously directed by the individual. The autonomic system regulates functions and actions which are not under voluntary control.

Diseases of the nervous system may be divided into two main classes: (1) Functional nervous disorders, in which

no pathological changes in the system can be detected. (2) Organic diseases associated with degeneration in the nerves or nerve cells following injury, chronic poisoning, or infection with micro-organisms. See Apoplexy; Brain; Ganglion; General Paralysis; Hysteria; Infantile Paralysis; Locomotor Ataxia; Meningitis; Myelitis; Neuralgia; Neurasthenia; Neuritis; Neurosis; Paralysis; Spinal Cord.

NESS. Lake and river of Inverness-shire, Scotland. The lake is 22 m. long and forms part of the Caledonian Canal. The rivers Morriston, Foyers and others fall into it, and its waters are carried to the North Sea by the river Ness, which is only 7 m. long.

NESSUS. In Greek mythology, one of the centaurs. Having attempted to carry off Deianira, the wife of Hercules, the latter shot him with a poisoned arrow. Nessus, when dying, gave Deianira his infected cloak, declaring that it would win back the love of her husband, should he prove unfaithful. The jealous wife sent Hercules the cloak, which he put on, and died in fearful agony. See Centaur; Hercules.

NESTON. Dist. of Cheshire, part of the urban dist. of Neston and Parkgate. It stands on the estuary of the Dee, 12 m. from Chester, and is served by the joint line of the G.W. and L.M.S. Rlys. The old church of S. Mary has some interesting memorials. Pop. 5,191

NESTOR. In Greek legend, king of Pylos. In spite of his years he took part in the Trojan War, and was one of the few Greek leaders to reach home safely after the fall of Troy. As a young man he had taken part in several adventures, including the expedition of the Argonauts and the hunt for the Calydonian boar. See Calydon.

NETBALL. Outdoor pastime. The ground is similar in shape to a hockey pitch.

Around the goals, which are fixed in the centre of the end lines, a semi-circle 16 ft. in radius, called the shooting circle, is drawn, and in the centre of the field a circle 4 ft. in diameter is marked, while the playing pitch is divided into three courts of equal size. The goals are single upright posts, each fitted with an iron ring, placed horizontally 10 ft. above the ground and projecting 6 ins. from the post. Attached to the ring is a net, open at the bottom, through which the ball has to be passed to score a goal. The ball is an association football. The positions are goal-scorer, attack, attacking centre, centre, defending centre, defence, and goal-keeper.

NETHERFIELD. District of Nottinghamshire. It is 2 m. from Nottingham, and is served by the L.M.S. and L.N.E. Rlys., many of the inhabitants being employed on the railways. Netherfield also possesses factories which are connected with the lace and hosiery trades. Pop. 6,400.



Netball. Try for a goal, the ball bouncing from rim of net

NETHERLANDS. Country of Europe. It is composed of eleven provinces—Friesland, N. Holland, S. Holland, Zeeland, Utrecht, Groningen, Drenthe, Overijssel, Gelderland, N. Brabant, and Limburg. Its area is 12,603 sq. m., or 15,760 inclusive of its waters. A strip of Zeeland territory lying S. of the Schelde gives the Netherlands sovereign rights to that river;—and her claim to extend these also to the Wielingen channel, W. of Flushing, was, in 1921, contested by Belgium. The Hague is the residence of the sovereign; other important towns include Amsterdam, the commercial capital, and Rotterdam. Pop. 7,730,577.

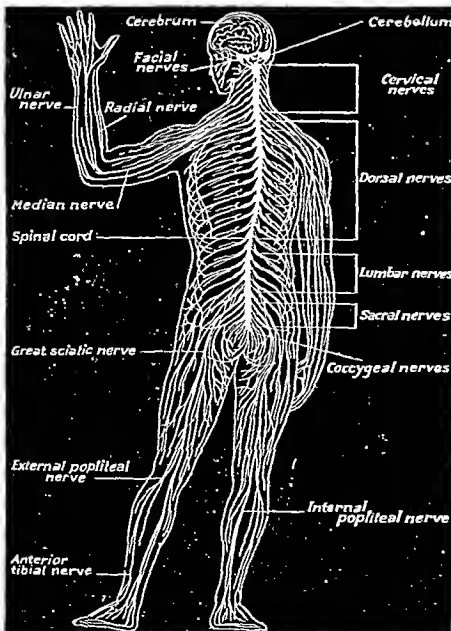
The surface is very flat and low, seldom exceeding 16 ft. above sea level, and is intersected by canals and rivers, of which the chief are the Rhine, Maas (Meuse), IJssel (Yssel), Waal and Schelde. In 1924 work was begun on draining a large area of the Zuider Zee. One third of the land is permanent pasture, and intensive methods are largely used in horticulture as well as in agriculture. The principal agricultural products are wheat, rye, barley, oats, flax, sugar beet and potatoes. Flowering bulbs are widely cultivated.

The Netherlands ranks high among colonial powers, its possessions having an area of about 788,000 sq. m. and a pop. of 51,881,862. They fall into two groups, East Indian and West Indian colonies. The E. Indian colonies comprise Java and Madura, Sumatra, the Rian-Lingga archipelago, Banca, Billiton, Dutch Borneo, Celebes, the Moluccas and Dutch New Guinea, the Timor archipelago, Bali and Lombok. The W. Indian colonies are Surinam or Dutch Guiana and Curaçao. The Netherlands colonial empire owes its origin to the Dutch East India Company, formed in 1602 and dissolved in 1798, when its possessions passed to the state.

The name Netherlands was common to the territory, the historical Low Countries, comprising present-day Holland and Belgium, until the declaration of independence by the northern provinces in 1581. At the close of the 16th century the Dutch gained the Moluccas, and, with them, the monopoly of the spice trade, and by the middle of the 17th century



Netherlands. Unmarried girls from Zeeland, in typical costume



Nervous System. Diagram of the network of nerves in the human body seen from the back



Netherlands. Map showing the waterways and canals, and the administrative divisions of Holland

owned more shipping than any other country in Europe. By the Congress of Vienna, 1815, Holland and Belgium were formed into a united kingdom of the Netherlands. This union was dissolved by the Belgian revolution of 1830, and the political relations between the northern and southern Netherlands were not finally adjusted until 1839, when Belgium became independent.

NETHERSOLE, Olga (b. 1870). British actress. Born in London, Jan. 18, 1870, she made her stage debut at the Theatre Royal, Brighton, in *Harvest*, March, 1887, and appeared in London at the Adelphi Theatre, June, 1888. She toured in Australia, 1890, and at the Théâtre Sarah Bernhardt, Paris, 1907, played in *La Dame aux Camélias* and *The Second Mrs. Tanqueray*. She toured in America, 1910-11, and again in 1913.

NETLEY. Village of Hampshire. It stands on the side of Southampton Water, 3 m. from Southampton, on the Southern Rly. Here are the extensive ruins of a Cistercian abbey, founded about 1239. The work of restoring it, begun in 1922, was completed in 1929. In 1856 a military hospital, the Royal Victoria, was begun at Netley. It was opened in 1863, and here candidates for the army medical service are trained. Pop. 1,396

NETTLE (*Urtica dioica*) Perennial herb of the order Urticales, a native of the temperate regions, S. Africa, and the A. des. The creeping root-stock sends out runners, soon forming a large colony. The oval or lance-shaped, opposite leaves are downy and well furnished with stinging hairs; the edges strongly toothed. The flowers are small and green, the males being in separate, looser clusters than the females. The dead-nettle (q.v.) is a different plant.

NETTLE RASH or *URTICARIA*. Affection of the skin which occurs in the form of wheals or raised patches, at first red and afterwards

white and bloodless in the centre, but red at the edges. It may be due to local irritation, such as stings of nettles, insects, jelly fish, etc.; to unsound food, particularly shellfish, tinned fish, and pork; to certain drugs such as copaiba; to intestinal parasites; or to indigestion, diabetes, jaundice, and other diseases.

NEUCHÂTEL (Ger. Neuenburg). Town of Switzerland, capital of the canton of Neuchâtel. It stands on the N.W. shore of Lake Neuchâtel, 27 m. by rly. W. of Berne. Fine quays with handsome modern buildings line the lake shore, this new quarter having several public gardens. The old town, to the W., contains a castle of the 12th century, with later additions: an abbey church, built in the 12th century; and a market hall, erected in 1570. Neuchâtel is noted

for its manufactures of watches, jewelry, and printed goods. Pop. 22,025. The lake of Neuchâtel is 24 m. long and covers over 92 sq. m. The canton of Neuchâtel is 312 sq. m. in extent.

NEURALGIA. Affection of the nerves. It may be a manifestation of a neurotic state, or due to debility, anaemia, exposure to cold, toxic influences, as in gout, diabetes, lead poisoning, malaria, etc., pressure on a nerve trunk from a tumour, or to reflex action from a source of irritation, such as a decayed tooth. The pain is usually very severe, and is described as stabbing, burning, or darting in character. The general health should be built up. Sufficient exercise in the open air and a generous diet are important. All sources of peripheral irritation, such as decayed teeth, should be looked for. Warmth applied to the affected part often relieves painful attacks. See Nervous System; Sciatica; Tic Douloureux.

NEURASTHENIA. Term used popularly to include all forms of neurotic disorder or neuroses (q.v.), but strictly one form of these disorders belonging to the group of the "actual" neuroses. Neurasthenia is essentially a form of nerve exhaustion, and may result from prolonged physical strain and hardship, or long-continued overwork, especially if associated with business or domestic worries. The most characteristic symptom is the extreme readiness with which the individual is fatigued by any kind of physical or mental effort.

NEURITIS. Inflammation of the trunk of a nerve. It may be localised in one nerve or may be multiple. Localised neuritis is most often due to exposure to cold, injury of a nerve, or extension of inflammation from adjacent inflamed tissue. There is pain in the course of a nerve, and the functions of the muscles supplied by the nerve are impaired. If the condition becomes chronic, there is ultimately extreme wasting of the muscles, with paralysis and possibly contractions.

Multiple neuritis may occur in the course of diphtheria and smallpox, may be due to poisoning by alcohol, lead, and other substances, or may arise in the course of beri-beri. Alcoholic neuritis is the most frequent form of multiple neuritis. Rest is an essential feature of treatment, while hot applications may be used to relieve pain. Strychnine, iodide of potassium, and salicylates have been recommended as internal medicines.

NEUROPTERA. Order of carnivorous insects. They have biting jaws, four stiff and unfoldable, net-veined wings, more or less transparent, and long antennae. The genus *Boreus* is wingless. They undergo complete metamorphosis in their development from the larva to the adult state. Familiar British examples are the alder-flies, the snake-flies, the lace-wings, and the scorpion-flies. Not one of them is injurious to man or his property.

NEUROSIS. Disorder of the mind not associated with any recognizable organic changes, and distinguished from insanity by the fact that it affects chiefly the emotions, and leaves the reasoning powers relatively unimpaired. Knowledge of these disorders is due mainly to the work of the Viennese physician, Sigmund Freud (q.v.).

Psychopathologists now classify neurotic disorders into the "actual" or "true" neuroses, which can be traced ultimately to some physical disturbance, and the psychoneuroses, which have a purely mental origin. The actual neuroses are three in number, namely neurasthenia, anxiety neurosis, and hypochondriasis. The psychoneuroses are hysteria, psychasthenia, and obsessional neurosis. These conditions are caused by a conflict between the conscious and subconscious parts of the mind. Treatment consists in investigating the patient's mind and ascertaining the fundamental nature of the conflict which, unknown to himself, is occurring. The process which is involved in this treatment is called psychoanalysis (q.v.).

NEUVE CHAPELLE. Village of France, in the dept. of Nord. It is 4 m. N. of La Bassée (q.v.) and 8½ m. S.W. of Armentières, lying slightly south of the Armentières-Béthune road. In Oct., 1927, a shrine in memory of the Indian soldiers who fell in the Great War was unveiled here by Lord Birkenhead. The village, which was practically destroyed in the war, has been adopted by Blackpool.

THE BATTLE OF MARCH, 1915. In Oct., 1914, the village was taken by the Germans, and in March, 1915, the British decided to open the campaign by an attack in force here. On March 10, after a preliminary bombardment, the assault was delivered by British and Indian troops. The village was captured, but a renewal of the attack on the 11th was attended with heavy loss. On March 12 German reserves arrived, but the British held the ground won on the 10th. The British losses were 12,811 killed, wounded and missing. The German losses, including 30 officers and 1,657 men taken prisoners, may have been almost as large. The shortage of ammunition in this battle had important political effects in England.

NEUVILLE, ALPHONSE MARIE DE (1836-85). French painter. He was born at St. Omer, May 31, 1836. In 1861 his Chasseurs of the Guards took a second-class medal at the Salon, and was followed by a series of military



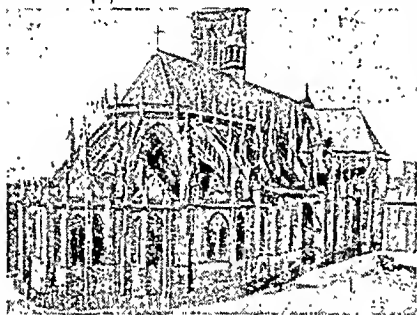
Nettle. Foliage and flowers of common stinging nettle

pictures, the artist supporting himself meanwhile by making woodcuts for the illustrated press. His pictures of the incidents of the war of 1870-71 made him famous as a military artist. He died May 20, 1885.

NEVA. River of N.W. Russia. Rising in Lake Ladoga, it flows through Leningrad, and, dividing into several branches, discharges into the bay of Neva in the gulf of Finland. It is a commercial waterway, the final link in the communication between Leningrad and the White and Caspian Seas. Length 45 m.

NEVADA. Western state of the U.S.A. lying almost entirely within the Great Basin, its surface (mean alt. 3,750 ft.) is marked by numerous small mt. ranges and "sinks," or marshy tracts of land converted at times into large lakes. The principal river is the Humboldt, whose direction is followed by the Southern Pacific Rly. The minerals include gold, silver, copper, lead, iron, and tungsten. There is a university at Reno. Carson City is the capital, and Reno the largest city. Nevada was part of the territory taken from Mexico in 1848. It became a state of the U.S.A. in 1864. Its area is 110,690 sq. m. Pop. 77,407.

NEVERS. City of France. It stands where the Nièvre falls into the Loire, 32 m. from Bourges and 160 from Paris. The cathedral of S. Cyr was begun in the 11th



Nevers. East end of the cathedral of S. Cyr

century and finished about 1500. It was originally two buildings, and is Romanesque at one end and Gothic at the other. The church of S. Etienne is noteworthy. The castle in which the counts and dukes of Nevers lived is now the palais de justice and a museum. Of the city's fortifications a tower remains. Pop. 29,754.

NEVILL, LADY DOROTHY FANNY (1826-1913). British writer. She was born in London, April 1, 1826, daughter of Horatio Walpole, third earl of Orford (1783-1858). In 1847 she married her cousin Reginald Nevill (d. 1878), and became known as a hostess. She was author of *Mannington and the Walpoles*, earls of Orford, 1894; *Reminiscences*, 1906; *Leaves from the Note Books of Lady Dorothy Nevill*, 1907; *Under Five Reigns*, 1910; and *My Own Times*, 1912. She died March 24, 1913. Consult *Life and Letters of Lady Dorothy Nevill*, R. H. Nevill, 1919.



Lady Dorothy Nevill, British writer

NEVIN or **NEFYN.** Watering place of. Carnarvonshire, Wales. It is on Carnarvon Bay, 6 m. N.W. of Pwllheli. In 1284 Edward I held a tournament here to celebrate his Welsh triumphs. The possibilities of Nevin as the port for Irish traffic were considered before the final selection of Holyhead. Pop. 1,900.

NEVINSON, HENRY WOODD (b. 1857). British author and journalist. In 1897 he acted as correspondent for *The Daily Chronicle*

in Greece and Crete, and was afterwards in S. Africa. He was in Africa, 1904-5, investigating the slave trade in Portuguese territory, and in Russia in 1906. On the outbreak of the Great War, Nevinson was in Berlin, and for a time in France, after which he acted as war correspondent in Gallipoli, Salonica, and Egypt. A champion of social reform, women's suffrage, and all advanced movements, his works include *The Dardanelles Campaign*, 1918; and three autobiographical volumes. *Changes and Chances*, 1921, 1925, and 1928. His wife, Margaret Wynno Nevinson, is also a writer.

His son, Christopher Richard Wynne Nevinson (b. 1889), studied at the Slade School and in Paris, and in 1910 began to exhibit at the New English Art Club and the London Group, where his daring experiments in cubism attracted attention. He joined the British army in 1914, and was in the Mons retreat. Discharged in 1916, he was appointed an official artist with the British armies in 1917.

Nevis. Loch or arm of the Atlantic Ocean in the S.W. of the co. of Inverness. It is 14 m. long. See Ben Nevis.

NEW AMSTERDAM. Town of British Guiana. It stands near the mouth of the river Berbice, at its junction with the Canje, 65 m. by rly. S.E. of Georgetown. It was founded by the Dutch. Pop. 8,789. New Amsterdam is also the name originally given by the Dutch to the settlement on Manhattan Island, which became New York City.

NEWARK. Borough and market town of Nottinghamshire. It is on the Devon, near its union with the Trent, and is connected with the main course of that river by a canal. It is 19 m. from Nottingham and 120 from London, on the L.M.S. and L.N.E. Rlys. The chief building is the church of S. Mary Magdalene. The Beaumont Cross is a fine piece of 15th century work. The castle was the scene of King John's death in 1216. Newark holds an important corn market. Market day, Wed. Pop. 16,957.

NEWARK. City and port of entry of New Jersey, U.S.A. It stands on the Passaic river, 9 m. by rly. W. of New York. It has manufactures of electrical machinery and apparatus, jewelry, leather, chemicals, cutlery, boots, clothing, and glass. Pop. 414,524.

NEWBATTLE. Village of Midlothian Scotland. It is on the South Esk river, 1 m. S. of Dalkeith. Newbattle Abbey, a seat of the marquess of Lothian, occupies the site of an abbey, founded in 1140. Pop. 6,100.

NEWBOLT, SIR HENRY JOHN (b. 1862). British writer. Born June 6, 1862, in 1892 he published a novel, *Taken from the Enemy*, and in 1897 a slender volume of verse, *Admirals All*. The poems therein and his later verse, contained in *The Island Race*, deal mainly with the deeds of British seamen, an example being the popular *Drake's Drum*. From 1900-4 Newbolt edited *The Monthly Review*. His later work includes two novels, *The Old Country*, 1906, and *The New June*, 1909; while after the Great War came *Submarine and Anti-Submarine*, 1918; *A Naval History of the War*, 1920; *Studies*, Green and Gray, 1926; and *New Paths on Helicon*, 1927. In 1915 he was knighted, and in 1922 was made a companion of honour.

NEW BRIGHTON. Watering place of Cheshire, part of the county borough of Wallasey. It stands on the Mersey, 4 m. from Birkenhead, in the Wirral peninsula. It has a station on the L.M.S. Rly., and is connected by steamer with Liverpool and Birkenhead.



C. R. W. Nevinson, British painter

NEW BRITAIN. Island of the Bismarck Archipelago (q.v.). When in German occupation, it was called Neu Pommern. On the island is Rabaul, the capital of the group. Its area is 10,000 sq. m. Pop. 81,859.

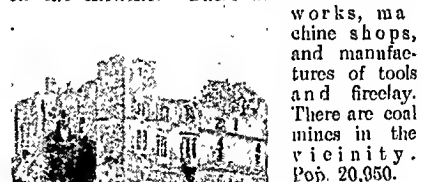
NEW BRUNSWICK. Province of the Dominion of Canada. It is bounded N.W. by the prov. of Quebec, W. by the U.S.A., and elsewhere by the sea, except where the isthmus of Chignecto separates it from Nova Scotia. Grand Manan and Campobello islands lie off the coast. The rivers include the St. John and the Miramichi. Grand Lake is the largest of the lakes.

Much of New Brunswick is covered by forests, in which moose and caribou are found, and lumbering and the making of wood-pulp are important industries. Iron, coal, gypsum, oil, and other minerals are mined, and natural gas exists. There is a large fishing industry and ample water power. The prov. is served by the C.P.R. and the C.N. Rlys. St. John is the largest town, others being Fredericton (q.v.), the capital, and Moncton. The university of New Brunswick is at Fredericton. The area is 27,985 sq. m. Pop. 387,876. See Canada.

NEWBURGH. Burgh and seaport of Fifeshire, Scotland. It stands on the Firth of Tay, 11 m. from Perth, on the L.N.E.R. The industries include fishing and the manufacture of floorcloth, linen, etc. There is some shipping, and a small harbour. Pop. 2,078.

There is a city called Newburgh in New York State, U.S.A., 58 m. N. of New York city. Pop. 30,419.

NEWBURN. Urban dist. of Northumberland. It is on the Tyne, 6 m. from Newcastle, on the L.N.E.R. There are iron and steel



Newark, Nottinghamshire. The castle, dating from the 12th cent.

works, machine shops, and manufactures of tools and fireclay. There are coal mines in the vicinity. Pop. 20,950.

In Aug., 1640, there was a skirmish here. The Scots, invading England, reached Newburn. On the 28th, after

a cannonade, the English, much inferior in numbers, fled, and the Scots crossed the Tyne.

NEWBURY. Borough and market town of Berkshire. It stands on the Kennet and the Kennet and Avon canal, 17 m. from Reading, on the G.W. Rly. The church of S. Nicholas was rebuilt by John Smallwood or Winchcombe, called Jack of Newbury, a wealthy clothier of the town. The Cloth Hall is now a museum. Malting, brewing, and milling are carried on, and there is a racecourse. Market day, Thurs. Pop. 12,295. Newbury was the scene of battles in the Civil War, Sept. 20, 1643, and Oct. 27, 1644. In the first of which Falkland was killed.

NEW CALEDONIA. French island in the western Pacific Ocean. It is 1,077 m. E. of Sydney, and has an area of 8,548 sq. m. A fringing reef encircles the island, the inner lagoon being of great use for navigation. There are coffee, cotton, and rubber plantations. Pop. 47,605.

Discovered by Capt. Cook in 1774, the island became French in 1853. From 1864-95 it was a penal settlement, and the remaining convicts are now kept in the islet of Nou, opposite Noumea, the capital. Dependencies of the island comprise the Isle of Pines, Loyalty Islands, Hion Islands, Wallis archipelago, and Futuna and Alofi.

NEWCASTLE. Town of co. Limerick, Irish Free State. It is 24 m. from Limerick. Pop. 2,797. There are several other places of this name in Ireland.

NEWCASTLE. Watering place of co. Down, Northern Ireland. It stands on Dundrum Bay, 11 m. S.W. of Downpatrick and 36 m. from Belfast, and is served by the G.N. of Ireland and Belfast and County Down Rlys. Amid magnificent scenery, it is visited for bathing and golf. Pop. 2,600.

NEWCASTLE. Town of Australia, in New South Wales. It stands at the mouth of the Hunter river, 102 m. by rly. N.N.E. of Sydney, on a great coalfield. There are large iron and steel works. Pop. 103,180.

NEWCASTLE. Town of Natal, S. Africa. It is at the foot of the Drakensberg, 160 m. from Durban, with which it is connected by rail. It is the centre of a coal-mining district, and lies at an alt. of 3,890 ft. During the Boer War of 1880-81 it served as the British base, and here peace was signed. In the S. African War, 1899-1902, the Boers occupied it in their invasion of Natal in Oct., 1899. Pop. 4,274.

NEWCASTLE, DUKE OF. British title borne by the family of Pelham-Clinton. It is taken from Newcastle-under-Lyme. The first duke was the soldier William Cavendish (1592-1676). He led the royalist armies during the Civil War, and was created an earl in 1629 and a duke in 1665. His son Henry, the 2nd duke (d. 1691), left no sons, so the title became extinct, but in 1694 it was revived for Henry's son-in-law, John Holles, earl of Clare (d. 1711).



William Cavendish, 1st duke of Newcastle. After Van Dyck.

Holles left no sons, and his estates passed to a nephew, Thomas Pelham, who was made duke of Newcastle-upon-Tyne in 1715, and duke of Newcastle-under-Lyme in 1756. In 1724 he joined Walpole's cabinet, and continued to hold office, save during the winter of 1756-57, until 1762. On the death of his brother, Henry Pelham, he was first lord of the treasury, 1754-56. Under his second premiership, 1756-62, Pitt was his war minister. When he died in 1768 his earlier dukedom became extinct, but the newer one passed to a nephew, Henry Fiennes Clinton, 9th earl of Lincoln, whose descendants still hold it. Henry, the 5th duke (1811-64), sat in the House of Commons as earl of Lincoln, 1832-51. The 8th duke, till then known as Lord Francis Hope, succeeded in 1928. The duke's seat is Clumber, Nottinghamshire. His eldest son is called the earl of Lincoln.

NEWCASTLE - UNDER-LYME. Borough and market town of Staffordshire. It stands on Lyme Brook, 16 m. from Stafford, on the L.M.S. Railway. In the vicinity are collieries and potteries, while other industries include the making of clothes and paper, brewing, and malting. In the 12th century a castle was built here, and as it was near the forest of Lyme the name arose. Market days, Mon. and Sat. Pop. 20,418.

NEWCASTLE-UPON-TYNE. River port, city, and co. of a city in the county of Northumberland. It is the centre of a large coal-mining, shipbuilding, industrial, and agricultural area, and stands 8 m. from the sea, on the left bank of the Tyne. To facilitate shipping, etc., the Tyne Commission undertook from 1861 onwards its great work of deepening and improving the river. Newcastle's industries, apart from coal and shipbuilding, include engineering works, electrical works, and the manufacture of chemicals and alloys. The city and district are served by the L.N.E.R. Seven bridges cross the river.

Open spaces and parks include Town Moor and Jesmond Dene.

S. Nicholas' church, the cathedral since 1882, dates from 1350, and the lantern tower from 1430. S. Andrew's and S. John's contain parts dating from the 12th century. Other conspicuous churches are All Saints' and S. Mary's (R.C.) cathedral. The Great Tower, or keep, of the castle dates from 1172-77, and the Black Gate from 1247. The university of Durham is represented by the College of Medicine and by Armstrong College. Newcastle adopted Arras in 1920. The chief magistrate is styled lord mayor. Pop. 278,409. See Armstrong, Baron; Jesmond; Tyne.

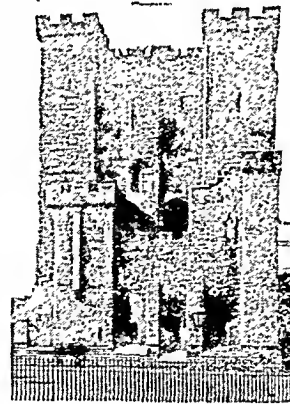
NEWCHWANG or YINGKOU. Treaty port of Manchuria. It was opened to foreign trade in 1858. Though formerly on the Gulf of Liaotung, Newchwang is now situated on the Liaohu, about 30 m. upstream. It is connected with the S. Manchuria Rly., linking Mukden and Dairen, and with the Peking-Mukden Rly. Newchwang is icebound for three months in the year. Its commercial position has been challenged by the opening of Antung and the development of Dairen. Pop. 65,600.

NEW CROSS. Dist. of S.E. London. In the bor. of Deptford, it has stations on the Southern and Metropolitan Rlys. New Cross is a populous area between Peckham on the W. and Greenwich on the E. New Cross Road connects the Old Kent Road with Queen's Road, Peckham, and Deptford Broadway. On the Lewisham High Road is the Goldsmiths' College. See Goldsmith.

NEW CUT. London thoroughfare. Connecting Lambeth Lower Marsh and Waterloo Road with Great Charlotte Street and Blackfriars Road, S.E., it is notable for its brokers' shops, street stalls, and Sunday trading. At the Waterloo Road corner is the Royal Victoria Hall (the Old Vic), formerly the Royal Coburg Theatre. See Victoria Hall.

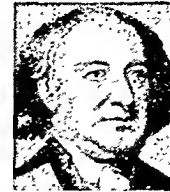
NEWDIGATE, SIR ROGER (1719-1806). English antiquary. Born at Arbury, Warwickshire, May 30, 1719, he was M.P. for Middlesex, 1741-47, and for Oxford University, 1750-80.

Sketching in early youth old French and Italian architecture, he afterwards travelled in quest of marbles and other antiquities. He presented some to University College, Oxford, and to the Radcliffe library, besides contributing £2,000



Newcastle-upon-Tyne. New bridge opened in 1928, with the swing and King Edward VII bridges beyond. Above, the 12th century castle keep

for transferring to Oxford the Arundel marbles, now in the University galleries there. He died Nov. 23, 1806.



Sir R. Newdigate, English antiquary. After Romney.

The Newdigate Prize was founded by him in 1806 as an award for the best poem on a given subject by an undergraduate of the university of Oxford.

NEW ENGLAND. Name given to certain N.E. states in the U.S.A. formerly belonging to Britain. They are Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut, and their inhabitants, descended from Scottish Presbyterians and English Puritans, are familiarly styled Yankees. The Plymouth Colony was established in 1620 in Massachusetts, and in 1643 a confederacy known as the United Colonies of New England was formed. See Pilgrim Fathers; also the articles on the separate states.

NEWENT. Market town of Gloucestershire. It is 10 m. from Gloucester, on the G.W. Rly. The church, an old foundation, has been largely rebuilt, but contains old monuments. Market day, alternate Thurs. Pop. 2,325.

NEW FOREST. Woodland district of Hampshire. It lies in the S.W. of the county between Southampton Water and the Avon, and has an area of about 144 sq. m. Herein are Lyndhurst, Brookenhurst, Ringwood, and Minstead. It contains the ruins of Beaulieu Abbey, the Rufus Stone, and other subjects of interest, and is watered by the Beaulieu river and other streams. The chief trees are oak and beech. There are a few deer left in the forest, which has also a peculiar breed of ponies.

Part of the land is the property of the crown, and to look after it there are a surveyor, verderers, and other officials. See Hampshire.

NEWFOUNDLAND. Dominion of the British Empire. It consists of Newfoundland proper, a large island in the N. Atlantic, off the continent of N. America, together with Labrador (q.v.) in 1927 the Labrador boundary dispute between Canada and Newfoundland was decided by the privy council in favour of the latter, and some 110,000 sq. m. (Labrador) were given to Newfoundland. The area of Newfoundland proper is 42,734 sq. m. The capital is St. John's, other towns including Harbour Grace, Bonaville, and Grand Falls. Pop. 264,089.

The coast of Newfoundland is very rugged, especially on the S.W. Fishing is the chief occupation, cod being the principal catch, and the seal fishery is valuable. There are important pulp and paper mills at Grand Falls and elsewhere. The mineral resources are considerable, the chief deposits being of iron, copper, silver, and lead ores. Coal is found. There are over 1,000 m. of rly. The governor is assisted by an executive council, a legislative council, and an elected house of assembly.

Newfoundland was discovered by John Cabot in 1497, and was soon visited by the Portuguese, Spanish, and French for its fisheries. In 1583 Sir Humphrey Gilbert formally annexed Newfoundland to England. The English made several attempts to colonise the island, but in 1697, under the treaty of Ryswick, the French were left in possession of a considerable settlement on the S.W. coast. In 1713 the island was ceded by France to England, but certain fishing rights were retained, out of which innumerable disputes arose, which were not finally settled until 1904.



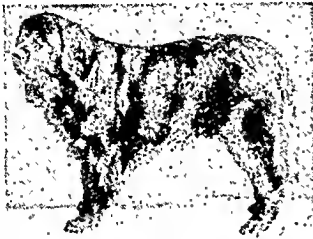
Newfoundland Arms



Newfoundland. Map of the self-governing British dominion. Inset, the Labrador coast, its dependency

The Newfoundland Regiment is a unit raised for service in the Great War. Formed in Aug., 1914, after a period of training it went to England, thence to Gallipoli, in 1915, and later fought in France, in Feb., 1918.

NEWFOUNDLAND DOG. Large, handsome and intelligent breed of dog. First introduced to Britain from Newfoundland in the 18th century, the conservation of its good points by breeders is looked after by the Newfoundland Club, which favours a dog wholly black, save for a patch of white, perhaps, on the chest and toes. The average height at shoulders is 27 ins. for a dog, and 25 ins. for a bitch. The tail, which reaches below the hocks, is thick, covered with long hair, and slightly curved at the tip. Ears and eyes are small, the latter of dark brown colour. The lesser Newfoundland or Labrador dog is all black.



Newfoundland dog. Champion Gipsy, a prize specimen of the breed

NEWGATE. Former gaol in the city of London. There was a prison here in the 13th century or earlier, and a new one was begun in 1420. This was burnt down in 1666, rebuilt upon the same lines, and again rebuilt 1778-80, only to be partly destroyed by fire during the Gordon Riots, 1780. Reconstructed in 1837, the gaol ceased to be a place of detention in 1880. In 1903-4 it was demolished, its site being now occupied by the Central Criminal Court. See Central Criminal Court.

NEW GLASGOW. Town of Nova Scotia, Canada. It stands on the East River, 105 m. from Halifax, and 3 m. from the coast at Pictou Harbour. There are coal mines in the neighbourhood, and the industries include iron and steel works. Pop. 8,974.

NEW GUINEA. Island of the Pacific Ocean, in the East Indian Archipelago. The fauna and flora are distinctly Australian in type, but the natives are akin to the Melanesians of the neighbouring South Sea Islands. The climate is warm. Its area is 319,732 sq. m.

Politically the island is Dutch in the W. and British in the E. The Dutch section is administered with the Moluccas. The British section is Australian, the S.E. being the Territory of Papua and the N.E. the Territory of New Guinea, the former German New Guinea, which in 1920 was handed over by the League of Nations to Australia, which governs it under a mandate. The chief town of Papua is Port Moresby. The area is 90,540 sq. m. Pop. about 275,000 Papuans and 1,500 Europeans. Of the Territory of New Guinea, Madang is the chief town. The seat of administration is Rabaul, in New Britain. The area is 68,500 sq. m. Pop. about 237,000 natives.

Dutch New Guinea comprises more than half the island. The interior has not been fully explored, but mountains have been named and the lower courses of some of the rivers are known. Coal has been found, copra is exported, and gum dammar is collected in the forests. The area is 160,692 sq. m. Pop. 195,460. See Oceania: Papua.

NEW HAMPSHIRE. State of the U.S.A. It has a small stretch of coast on the Atlantic, and its area is 9,340 sq. m. Its uneven surface rises to over 6,000 ft. in Mt. Washington, one of several peaks of the White Mts. which exceed 5,000 ft. The chief rivers are the Merrimac, Androscoggin, Connecticut, and Piscataqua; and there are many small and picturesque lakes. More than 75 p.e. of the surface is covered with forest. Hay, maize, potatoes, and oats are cultivated. Upwards of 1,800 m. of rlys serve the state. Concord is the capital, and other cities are Manchester, Nashua, Dover, and Portsmouth. Pop. 456,000.

NEWHAVEN. Seaport and urban dist. of Sussex. It stands at the mouth of the Ouse, 8 m. E. of Brighton and 56 from London, on the Southern Rly. S. Michael's Church has a Norman tower and chancel of the 12th century. Newhaven has a good harbour, and from here steamers go regularly to Dieppe and other ports. There is also a coasting trade, while shipbuilding is an industry. Pop. 6,436.

NEWHAVEN. Seaport of Midlothian, Scotland, since 1920 included in the city of Edinburgh. It stands on the S. side of the Firth of Forth, 2 m. from Edinburgh, with a station on the L.M.S. Rly.

NEW HAVEN. City and seaport of Connecticut, U.S.A. It stands at the head of New Haven Bay, near Long Island Sound, 70 m. N.E. of New York, on the New York, New Haven and Hartford Rly., and is the

seat of Yale University. The manufactures include iron and steel goods, rubber articles, clocks, and cutlery. The city is a busy distributing centre, and carries on a large coasting trade. Pop. 189,683.

NEW HEBRIDES. Group of islands in the Pacific Ocean. They lie between Santa Cruz Islands on the N. and the Loyalty Islands on the S., the Fiji Islands being on the E., and the Coral Sea on the W. They are administered by British and French officials under the Anglo-French Convention of 1906. Wooded or covered with luxuriant vegetation, they produce copra, bananas, sago, rubber, tortoiseshell, sandalwood, and coffee. The total area is about 5,000 sq. m., and the pop., chiefly Melanesian, is estimated at 60,000.

NEW JERSEY. State of the U.S.A. With an area of 8,224 sq. m., of which 710 are water, it

has a coastline on the Atlantic. The surface in the N. is crossed by the Appalachians, the centre is generally level, and the S. slopes towards a marshy coast, and is largely a pine-wood region. The coast is "barred" by shaly islands, forming summer resorts, separated from the mainland by lagoons. The Delaware is the principal river. Agriculture, market gardening, fruit growing, and forestry are followed. There are valuable fisheries. Mineral products include zinc and clay products. The chief industries are petroleum-refining, copper smelting, and the manufacture of textiles. Besides 3,742 m. of steam and electric railways, there are 175 m. of canal. Important cities include Newark, Jersey City, Patterson, and the capital, Trenton. Pop. 3,821,000.

NEWLYN. Watery place of Cornwall. It stands on Mount's Bay, 2 m. S.W. of Penzance. Its situation has made it a resort of artists, but it is also a fishing centre, with a good harbour.

NEWLYN SCHOOL. This school of artists was formed about 1880. The aim was to encourage work in the open air, the equable climate and grey atmosphere of the place offering facilities for study of the model in diffused daylight.

NEWMAINS. Colliery and ironworking centre of Lanarkshire, Scotland. It stands on the canal 2 m. N.W. of Wishaw, with a station on the L.M.S. Rly. Pop. 6,718.

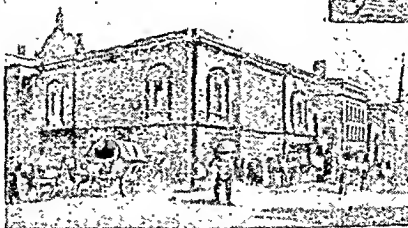
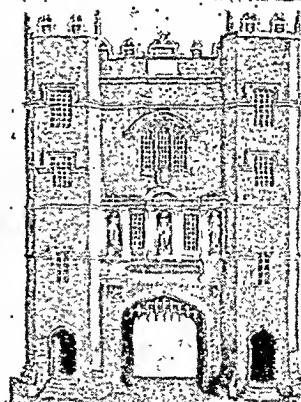
NEWMAN, JOHN HENRY (1801-90). British theologian. He was born in London, Feb. 21, 1801, and educated at Trinity College, Oxford, becoming in 1822

a fellow of Oriel. In 1828 he became vicar of S. Mary's, Oxford, and in 1841 he published Tract XC. This roused a storm of indignation, and in the following year he retired to Littlemore and resigned the living of S. Mary's. In 1845 Newman was received into the Roman Church, and went a year later to Rome, where he was ordained priest. Returning to England in 1847, he settled at Edgbaston, where he founded a congregation of the Oratory. A controversy with Charles Kingsley resulted in his autobiographical Apologia pro Vita Sua, 1864. In 1879 he was made cardinal. He lived in retirement at Birmingham until his death, Aug. 11, 1890. His hymn Lead, Kindly Light, and his poem The Dream of Gerontius have achieved wide popularity. See Oxford Movement.



John Henry Newman, British theologian

Newman's brother, Frederick William Newman (1805-97), was professor of Latin at University College, London, from 1846-1860. He died Oct. 7, 1897. His works include Phases of Faith, 1850.



Newgate, London. The old gaol, from a print of 1800. Above, New Gate, a 17th century view of the City gate which once served as a prison

NEWMARKET. Urban dist. and market town of Cambridgeshire and Suffolk, the headquarters of horse racing in England. It is 13 m. from Cambridge, with a station on the L.N.E.R. The racecourse on Newmarket Heath contains ten courses, the longest of which is 4 m. It is traversed by the Devil's Dyke. Around are numerous training establishments. The Jockey Club has its headquarters here. The church of S. Mary is an old Gothic building restored. Market day, Tues. Pop. 9,753. See Horse Racing.

NEW MEXICO. State of the U.S.A. The surface is crossed by many detached ranges of the Rocky Mountain system, except in the S.E. where it is a barren plain. The Rio Grande flows N. to S., and cuts the state into two unequal portions, and further E the Rio Pecos, an affluent of the Grande, follows a similar course. Except in the river valleys, agriculture depends on irrigation. Two senators and one representative are sent to Congress. The capital is Santa Fé. The territory was formed from districts ceded by Mexico in 1848 and others purchased in 1853, and ceded by Texas. It was admitted to the Union in 1911. Its area is 122,634 sq. m. Pop. 396,000.



New Orleans, Louisiana. Lafayette Square, with S. Patrick's Cathedral, left, and, right, the City Hall

the building of embankments called levees, which extend along the city front and for many miles up and down the river. The city covers an area of about 200 sq. m., but the inhabited portion is only about 40 sq. m. in extent. Canal Street, which separates the picturesque old French section from the newer and commercial American part, is the principal business thoroughfare. The principal open spaces are the Audubon Park, the City Park, Jackson Square, Beaudry Square, and Lafayette Square. The buildings include the city hall, cotton exchange, court house, and custom house. Of the churches of New Orleans the finest are the cathedrals of St. Louis and St. Patrick.

The cemeteries are a remarkable feature of New Orleans. The soil is so saturated with water that burial beneath the surface is not possible, and vaults with arched cavities are used, the coffins being ranged one above the other in tiers, 12 ft. above the ground level.

New Orleans is one of the most important commercial cities of America, and, after Liverpool, the foremost cotton port of the world. Pop. 414,493.

NEW PLYMOUTH. Town of New Zealand. Situated on the S.W. coast of N. Island, it is a centre for the cattle-rearing and dairying industry of the dist., and is connected by rly. with both Wellington and Auckland. It was first settled in 1841. Pop. 17,210.

NEWPORT. Borough and market town, also the capital of the Isle of Wight. It stands on the Medina, near the centre of the island 10 m. from Ryde, and is served by the island rlys. The chief building is the church of St. Thomas. Rebuilt in the 19th century, it contains memorials from the older building, and a monument to Elizabeth, daughter of Charles I. There is a guildhall, corn exchange, museum, a grammar school dating from 1612, and a school for girls founded in 1761. God's Providence House is an interesting building. In 1928 a new cattle market was opened. Market day, Tues. Pop. 11,036.

NEWPORT. Borough, seaport and market town of Monmouthshire. It stands on the Usk, 4 m. from its mouth, and is 12 m. from Cardiff and 133 from London, being served by the G.W. and L.M.S. Railways. The town is chiefly on the W. side of the river; on the E. is the suburb of Maindee, included in the borough in 1889. The chief buildings are the church of S. Woollos, some parts of which are Norman and others Perpendicular, the town hall, the offices of the county council, art gallery and museum and market hall. Others include the technical college, theatres, the post office, and the Royal Gwent Hospital. There are remains including two towers, of a castle. S. Woollos' church is the pro-cathedral for the diocese of Monmouth. Newport does a large shipping trade, mainly in coal and iron, for which it has modern docks, covering 160 acres. Market day Wed. Pop. 93,700.

NEWPORT. Burgh of Fifeshire. It stands on the frith of Tay, 1½ m. S.E. of Dundee, of which it is practically a residential suburb. It is served by the L.N.E.R., while a ferry connects it with Dundee across the Tay. Pop. 3,320. See Fifeshire.

NEWPORT. Market town and urban district of Shropshire. It stands on the Shrews-

bury canal, 17 m. from Shrewsbury and 145 m. from London, and is served by a joint line of the L.M.S. and G.W. Railways. The chief building is the rebuilt church of S. Nicholas, and there are a town hall, corn exchange, and grammar school of 1665, also an old market cross. Market day, Fri. Pop. 3,056.

NEWPORT PAGNELL. Market town and urban dist. of Buckinghamshire. It stands where the Ousel joins the Ouse 14 m. from Buckingham and 50 from London. The town is served by the L.M.S. Rly and the Grand Union Canal. The chief building is the church of SS. Peter and Paul, dating in the main from the 14th century, with two fine porches. There is an almshouse, founded in 1280, hnt now known as Queen Anne's Hospital. Market day, Wed. Pop. 4,142.

NEWQUAY. Watering place and urban dist. of Cornwall. It is on the N. coast of the county, on Newquay Bay, 14 m. from Truro, and is served by the G.W. Rly. With a small harbour, it has a shipping trade and is a fishing port, but it is chiefly known as a pleasure resort. Pop. 6,633. See illus. below.

NEW RIVER. Artificial waterway in Hertfordshire and Middlesex. Fed by the Chadwell and Amwell springs in Herts, and by the Lee (Lea) at Broxbourne, it extends S. about 27 m. to New River Head in Clerkenwell. Constructed by Sir Hugh Myddelton (q.v.), 1609-13, at a cost of £500,000, the undertaking was acquired by the Metropolitan Water Board (q.v.) in 1904.

NEW ROSS. Urban dist. and river port of co. Wexford, Irish Free State. It stands on the Barrow, 13 m. N.E. of Waterford and 102 m. from Dublin, with a station on the



Newquay, Cornwall. Town beach from the Headland looking east. See above

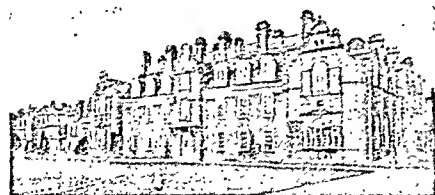
Great Southern Rlys. On the other side of the river, in Kilkenny, is Rosbercon, part of the urban dist. Old Ross is a village 3½ m. away with ruins of a castle. Pop. 5,011

NEWRY. Urban dist. and seaport of co. Down, Northern Ireland. It stands on the river Newry, which has been canalised to afford access for vessels from the sea 35 m. from Belfast and 63 from Dublin. It is served by the G.N. of I. Rly and an electric rly., while there is a line from here to Greenore. The town has a technical school. It is an important port for the export of agricultural produce and cattle. The older part of the town is separated by the river from the newer part called Ballybot. Pop. 11,963.

NEW SCOTLAND YARD. Building on the Thames Embankment, London, erected in 1890 to serve as the headquarters of the Metropolitan Police. See Police; Scotland Yard.

NEW SIBERIA. Name of three groups of islands in the Arctic Ocean, in the autonomous Soviet Socialist republic of Yakutsk. The largest is Koteln (Kettle Island). They contain vast beds of petrified wood. Their area is 9,650 sq. m.

NEW SOUTH WALES. Oldest state of the Australian Commonwealth. It lies on the E. coast between Queensland and Victoria.



Newnham College, Cambridge. Sidgwick Hall and, right, Clough Hall, from the south

It includes Old Hall (the original Newnham Hall), Sidgwick Hall, Clough Hall, so named after the first principal, Anne J. Clough (q.v.), Peile Hall, and College Hall, the last named used for dinners, concerts, etc. There is accommodation for over 200 students.

NEW ORLEANS. City and port of Louisiana, U.S.A. It stands mainly on the left bank of the Mississippi river, 107 m. from its mouth, and is served by the Southern Pacific and other rlys. Much of the land bordering the city proper is marshy and below the level of the river at high tide, necessitating

Important towns include the capital, Sydney, Newcastle, Broken Hill, and Auburn. Its area is 309,432 sq. m. Pop. 2,458,721.

Physically the dominant feature is the main watershed, or divide, which crosses the great plateau, and separates the short rivers which flow to the E coast from those belonging to the Murray-Darling system. Stock raising, sheep farming, and lumbering are the chief occupations. Cultivation has a wide range, from wheat to sugar cane and oranges. Minerals include gold, silver, lead, copper, tin, and coal. See Australia.

NEWSPAPER. Periodical publication which contains a record of public events and a selection from current happenings. It contains comments on matters of public interest, criticisms of literature, music, and art, and discussions of commercial and financial questions. On the business side it has generally a considerable system of advertising which links together the business world and affords publicity to commercial enterprise.

While in London probably the daily morning papers are predominant, in the provinces the public get their news chiefly from evening papers. On the Continent morning and evening newspapers have perhaps almost equal rank. In the U.S.A. the daily morning paper seems to carry all before it; but the part played in Europe by popular weeklies is taken by the huge Sunday issues which every daily paper in America carries with it.

The first master of English journalism was Daniel Defoe, and the first newspaper to be considered was *The Review*, which he started in 1704. After Defoe, the next outstanding figure in Anglo-Saxon journalism was John Walter, who founded *The Times* in 1785. Another great journal, *The Daily Telegraph*, founded in 1855, was sold in 1928 to Lord Camrose, Sir Gomer Berry, and Sir E. Hiffe by Viscount Burnham (q.v.). In the provinces the same type of newspaper was reproduced in kind journals like *The Scotsman* and *The Manchester Guardian*.

About 1890 a new era was opened for newspapers. The Education Act of 1870 had been in force long enough to provide a vast army of readers who demanded something of a more popular kind than was afforded by the existing papers. The earliest success in this line was made by *The (London) Evening News* and the subsequent establishment of a halfpenny morning paper, *The Daily Mail*. This had been preceded by *The Star* and *The Echo*, evening papers, *The Morning* and *The Morning Leader*, and was succeeded by *The Daily Express*. Later came *The Daily Mirror* and *The Daily Sketch*, predominantly photographic papers.

Meanwhile a similar change was coming over the country by the development of popular weeklies with vast circulations. The movement this time began in the provinces, where *The Sunday Chronicle* and *The*

Umpire of Manchester led the way, followed by *The Sheffield Weekly Telegraph* and some Scottish weeklies in Glasgow and Dundee. London soon began to develop its Sunday papers. Lloyd's Weekly News, *The Referee*, *The People*, *The Weekly (later Sunday) Dispatch*, and *The News of the World* ran up circulations of a million or more. *The Sunday Pictorial* and *The Sunday Graphic* had also large circulations.

There are said to be more than 60,000 daily and weekly newspapers in the world. Of these 23,000 are published in the U.S.A. and 13,000 in the British Empire.

The Newspaper Press Fund exists to assist necessitous members of the literary staffs of newspapers. The offices are at 11, Garrick Street, London, W.C.

NEWSTEAD. Village of Nottinghamshire. It is 8 m. from Nottingham, and is famous for its association with the Byrons. An Augustinian priory was founded here in 1170, and at the dissolution of the monasteries the lands passed to the family of Byron. This was the seat of the Byrons until 1818, when Lord Byron, the poet, sold it. Of the original abbey the cloister square, with the refectory and chapter house, and the W. front of the church remain. The Leen rises within the park. In 1930 Newstead Abbey was bought by Sir Julius Cahn and presented to the nation. See Byron; Hucknall Torkard.

NEWT OR EFF (Molge or Triton). Genus of small, tailed Batrachians, of which three species are British. The common newt, found in clear ponds, is slightly over 3 ins. long. Newts spend a great part of their time on land, where they lurk among grass and moss under stones and in holes, usually hibernating in such situations. But at the breeding season in spring they are always found in the water, the eggs being deposited singly on the leaves of water plants, the edges of which are folded over them. The egg hatches out as a tadpole, and its development is similar to that of the frog. By the autumn the metamorphosis is complete. The newt has now four limbs.

NEW TESTAMENT. Name given to the collection of books in the Bible which contain accounts of the life and teaching of Jesus Christ, the beginnings of Christianity, and the faith of the early Church. These books were written to meet the needs of the Christians of the first century, and it was a considerable time before they were added to the canon of Scripture.

By the year 200 the majority of the documents in the N.T. had secured universal recognition in the whole of Christendom. The Western Church, however, rejected James and Hebrews, and the Eastern Church 2 and 3 John and Jude, while 2 Peter had not as yet won recognition at all. Some doubt, too, was expressed about the Apocalypse. See Bible.

NEWTON. District of Hyde, Cheshire. It is 7 m. S.E. of Manchester, with a station on the L.N.E. Rly. Cotton is the chief manufacture. Another Newton is in Cheshire.

NEWTON, SIR ISAAC (1642-1727). English scientist and philosopher. Born at Woolsthorpe, Lincolnshire, Dec. 25, 1642, and educated at Grantham School, in 1661 he entered Trinity College, Cambridge. He returned to Cambridge in 1668, having been elected to a fellowship the previous year. For the next 30 years he lived in college, engrossed in the researches on which his fame rests. Newton left Cambridge in 1696, and during the rest of his career lived in London, holding offices in the Mint which



Sir Isaac Newton,
English scientist
after J. Vanderbank

gave him a sufficient income. He died March 20, 1727. He had been knighted in 1705, and was president of the Royal Society from 1703 until his death.

As regards pure mathematics, Newton dealt with most of the subjects then read. In geometrical optics he for the first time offered an explanation of colour phenomena; he also invented a reflecting telescope, microscope, and sextant. These investigations led him to a theory of physical optics. In this he discussed the wave and corpuscular theories of light, rejecting the former, but admitting the latter as possible. Newton's work on mechanics and gravitation is even more important. He generalised the law of attraction into the statement that every particle of matter attracts every other particle with a force varying directly as the product of their masses and inversely as the square of the distance between them. See Gravitation; Light. Physics; Relativity.

NEWTON ABBOT.

Urban dist. and market town of Devonshire. It is 20 m. from Exeter, and is served by the G.W. Rly. The town stands amid beautiful scenery at the head of navigation of the Teign estuary. The chief buildings are the churches of S. Mary, Wolborough, and All Saints, Highweek, both Perpendicular. The town is an important railway junction. Market day, Wed. Pop. 13,837.

NEWTON-IN-MAKERFIELD. Urban dist. of Lancashire, also known as Newton-le-Willows. It is 16 m. from Manchester, and is served by the L.M.S. Rly, being a railway junction. The industries include railway shops. Around are coal mines. A racemeeting is held annually, as are cattle fairs. Pop. 20,163.

NEWTON STEWART. Burgh of Scotland. It is mainly in Wigtownshire, but one suburb is in Kirkcudbrightshire. It is on the river Cree, 30 m. W. of Castle Douglas on the L.M.S. Rly. Pop. 1,831.

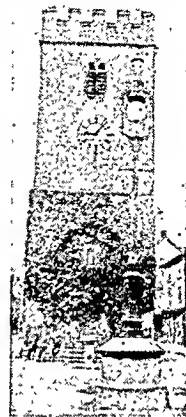
NEWTOWN (Welsh Trenewydd). Urban dist., with Llanllwchaearn, and market town of Montgomeryshire. It stands on the Severn, 7 m. W.S.W. of Montgomery, on the G.W. Rly. It is a centre of the Welsh flannel industry. Market day, Tues. Pop. 5,670.

NEWTOWNARDS. Town of co. Down, Northern Ireland. It is a mile from the head of Strangford Lough and 14 m. by rail E. of Belfast on the Belfast and County Down Rly. The chief buildings are the town hall and the parish church, a fine cruciform building. The industries are linen and muslin manufacture. Markets and fairs are held here. Pop. 9,587.

NEWTOWN STEWART. Town of co. Tyrone, Northern Ireland. It stands on the river Mourne, 24 m. by rail S.E. of Londonderry on the G.N. of I.R. The town was granted to William Stewart, after whom it was named, by Charles I. Pop. 1,000.

NEW WESTMINSTER. Town of British Columbia. It is 80 m. from Victoria on the Canadian Pacific and other rlys., and stands on the Fraser river, 15 m. above the mouth. Its chief industries are salmon canning and the dressing and shipping of timber. Pop. 15,450.

NEW YEAR'S DAY. First day of the year. The ancient Attic year began with the new moon after June 21, and the Romans



Newton Abbot, S. Leonard's Church tower. In foreground, pedestal from which William III was proclaimed king

began their year on March 1. The beginning of the Roman year was changed by Julius Caesar to Jan 1.

Among customs observed on New Year's Eve and Day in England, Scotland, and elsewhere may be mentioned the ringing of the church bells at midnight, and Hogmanay (q.v.) In Scotland and parts of England first footing survives; the first person who enters the house on New Year's Eve is supposed to bring good luck according as, in different localities he is light or dark haired.

NEW YORK. State of the U.S.A. It includes many adjacent islands, of which Long, Staten, and Manhattan are the chief. The principal rivers are the Hudson, Mohawk, Delaware, Niagara, Oswego, Black, and Genesee. Numerous lakes occur in the Adirondack Mts., and the rivers are noted for their picturesque falls. Another mountain range in the state is the Catskill group. Waterway communication is maintained between Albany on the Hudson and the St. Lawrence and Great Lakes by means of the Champlain Canal to the N. and the New York State Barge Canal to the W. Two senators and 43 representatives are returned to Congress. New York, Buffalo, Rochester, and Syracuse are the principal cities, and Albany is the capital. The area is 49,204 sq. m. Pop. 11,550,000.

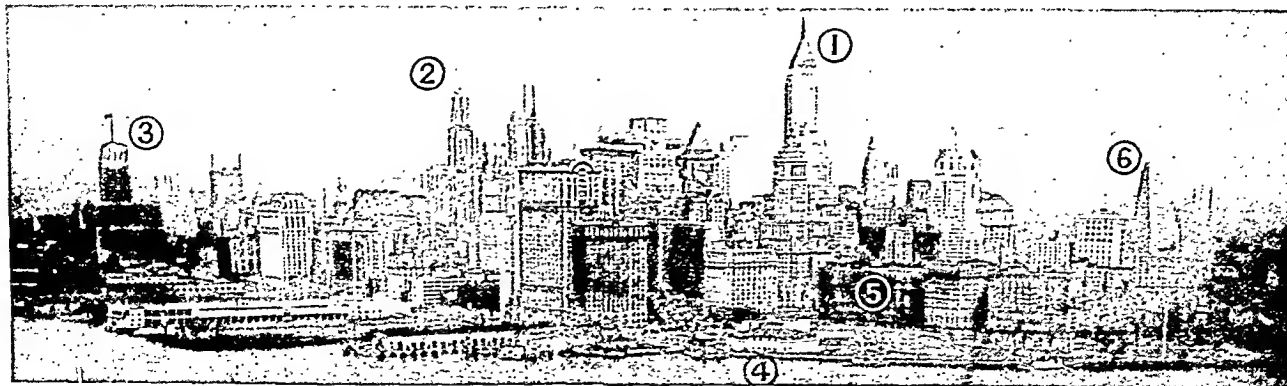
NEW YORK. Metropolis of the United States. Situated at the head of New York Bay and at the mouth of the Hudson or North river, it is a great seaport and the centre of an important industrial district. Since 1897 the city has included five boroughs, having a total area of 326 sq. m. Of these, Manhattan (q.v.), New York city proper, is the most important. Pop. 5,873,356.

Sky-scrapers, as they are called, are a feature of New York. A number of business blocks and hotels rise to over 300 ft., having 30 and more storeys, and one or two, notably the Chrysler, Bank of Manhattan, and Woolworth buildings, have over 60. In the midst of these sky-scrapers, in its own churchyard in Broadway, stands old Trinity Church, and near is Wall Street, which with Broad Street is the home of American finance. The city hall and other buildings used for government purposes are near the Battery, at the extreme end of the island is called. Broadway is a thoroughfare which runs from the Battery through the city until it becomes the high road to Albany.

For 2 m. from the Battery the street plan of New York is irregular, but after that the usual American rectangular plan prevails. The streets run roughly E. and W., 20 to the mile; the avenues N. and S., seven to the mile. Numbers are the rule, but in the N. districts many avenues adopt names, as, for example, Columbus or Amsterdam.



New York. Plan of the business quarter of the metropolis of the U.S.A.



New York. Aerial view of the lower and older part of the city. 1. Bank of Manhattan (838 ft.). 2. Woolworth Building. 3. Bell Telephone Building. 4. Aquarium. 5. Battery Park. 6. 120 Wall St. To the left are the quays belonging to the various steamship lines

Times Square, which is dominated by the Times building, is the Piccadilly Circus of New York. In this district may be found also the



New York. Statue of Liberty at the entrance to the harbour

the city's fine parks, and contains the Metropolitan Museum of Art, while the American Museum of Natural History is in Manhattan Square, adjoining it.

Four great bridges over the East river, the Brooklyn, the Manhattan, the Williamsburg, and the Queensborough, and several tunnels, join Manhattan to Brooklyn and Queens, and tunnels and ferries join it to New Jersey.

Three great trunk lines run into New York, the New York Central, and the New York, New Haven, and Hartford at the Grand Central station, and the Pennsylvania Railroad at the Pennsylvania Terminus.

Of the papers published in New York, the chief are The New York Times and The Herald-Tribune, a union dating from 1924 of Gordon Bennett's paper The New York Herald and The New York Tribune.

NEW ZEALAND. British Dominion in the South Seas. Politically it embraces the two main islands, North and South, the small Stewart Island separated from South Island by Foveaux Strait, and many islands in the neighbouring seas. In addition the Dominion is the mandatory for the former German colony of Western Samoa. The area, excluding annexed islands and mandated territory, is 103,569 sq. m.

Of this North Island covers 44,131 sq. m., South Island 58,120, and Stewart Island 662. Wellington, on North Island, is the capital. Other important towns include Auckland, Christchurch, and Dunedin. Pop. 1,408,094, exclusive of Maoris, 66,271.

The dominant industry is sheep rearing, both for food and wool. Dairy farming, mainly for butter and cheese, is of growing importance. Crops of wheat, oats, and barley are grown for local consumption. Kauri gum is dug in the Auckland peninsula, phormium is gathered from both wild and cultivated plants, and timber is cut from the forests. Coal is mined on the W coast of South Island, and gold in the Thames peninsula. In the valley of the Clutha, alluvial gold is dredged. Communication is maintained by a growing rly. system connecting the chief towns and supplemented by a coastal steamer service. The principal exports are wool, frozen meat, butter, cheese, tallow, hides, skins, phormium flax and tow, timber, gold, and coal.

The Dominion is under a governor-general and a general assembly, consisting of a legislative council of 41 paid members and a house of 80 paid representatives, including four Maoris. The Bank of New Zealand, established in 1861, acts as banker to the New Zealand Government. The University of New Zealand, an examining body only, consists of the university of Otago at Dunedin, Canterbury University College at Christchurch, Auckland University College, and Victoria University College at Wellington.

NEW ZEALAND CROSS. Decoration for bravery. Instituted in 1869, it is awarded to those "who may particularly distinguish themselves by their bravery in action, or devotion to their duty while on service." It consists of a silver Maltese cross, with a gold star on each limb; in the centre in a circle surrounded by a gilt laurel wreath is "New Zealand." On the reverse is the name of the recipient. A crown is placed above the uppermost limb. The ribbon of the decoration is crimson.



New Zealand Cross

NEW ZEALAND FLAX (Phormium tenax). Perennial herb of the order Liliaceae, native of New Zealand. The sword-shaped leathery leaves are from 3 ft. to 6 ft. in length. The flower-stem is about 15 ft. high, branched above, the branches supporting the curved, tubular, red or yellow flowers. The leaves yield strong fibres, but contain gum difficult of removal.

NEXT FRIEND. In English law, adult person who lends his name to a legal proceeding brought by or on behalf of an infant or lunatic. If the infant plaintiff loses with costs, the next friend is liable to the defendant for these costs, though as a rule these are allowed

tion, and in 1804 he was created a marshal, and later a duke. He distinguished himself at Jena, Eylau, and Friedland. His victory at Borodino in the Russian campaign in 1812 brought him the title of prince of Moskova, and to him is due the credit of saving the remnants of the French army in the retreat. In 1813 he fought at Lützen, Bantzen, and Leipzig, but he made his peace with the Bourbon régime in 1814. When Napoleon returned from Elba, Ney was sent to oppose him, but he joined his old master, and commanded the centre at Waterloo. Brought to trial, he was shot in Paris, Dec 7, 1815.



Marshal Ney, French soldier

NIAGARA. Town and watering place of Ontario, Canada. It stands on the Canadian side of the Niagara river, where it falls into Lake Ontario. It is 15 m. below the falls. It was the first capital of Upper Canada, now Ontario. Pop. 1,357.

On the opposite (U.S.A.) side of the river is Fort Niagara. A fort was built here in 1675, and another in 1725-27, earlier ones having been destroyed.

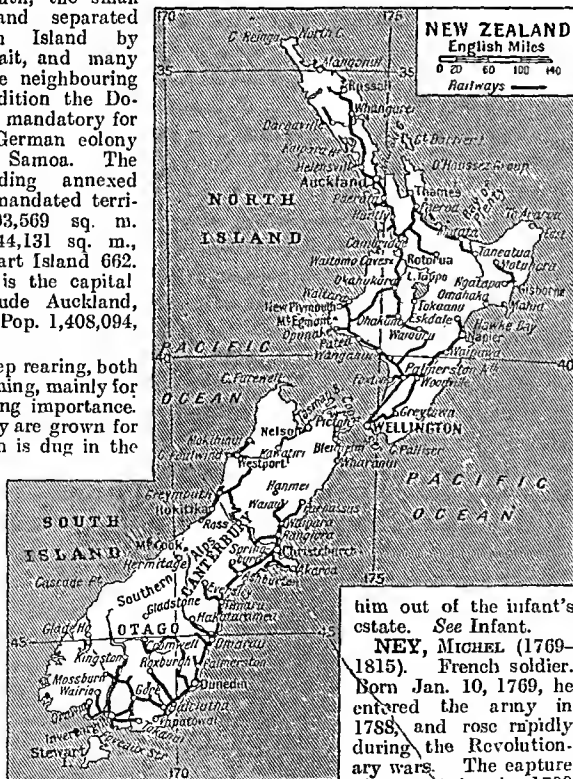
NIAGARA FALLS. Falls on the lower portion of the Niagara river, N. America. The river flows from Lake Erie to Lake Ontario. During its course it makes a total descent of 328 ft. The cataract is divided into two by Goat Island, the American Falls, on the N. side, being 1,080 ft. wide and 167 ft. high, and the Horseshoe or Canadian Falls, on the south side, 3,100 ft. across and 158 ft. high. Below the descent the river plunges through a deep and narrow chasm to Lewiston, 7 m. distant. About 2 m. below the Falls is the whirlpool. The river is crossed by three bridges below the Falls.

The water power is utilised for the generation of electricity, the water being drawn off through tunnels above the Falls and returned in a similar manner into the chasm below. The shores along both sides of the Falls have been made government reservations, the Queen Victoria Niagara Falls Park (154 acres), and the New York State Park (115 acres). See Blondin; also illus. p. 1013.

NIAGARA FALLS. City and port of entry of Ontario, Canada. It stands on the W. side of Niagara river, here crossed by three bridges, about 2 m. below the Falls, opposite the American city of Niagara Falls. (Pop. 57,000.) It is served by the C.P.R. and other rlys., and an electric rly. connects it with Toronto. It is an important rly. centre, and its enormous water power generates electric power, which is used for the factories here and for those of Toronto and other cities. Pop. 14,764.

NIBELUNGENLIED (Ger. song of the Nibelungs). Medieval German epic. Dating from about 1200, the poem, in 38 adventures, consists of two parts. The first relates the story of Siegfried, his marriage to Kriemhild, her jealousy of Brunhild, and the murder of Siegfried by Hagen, the Nibelung; and the second tells how Kriemhild, who had married Etzel or Attila, king of the Huns, avenged herself on the Nibelungs, and was herself slain. See Brunhild; Kriemhild; Siegfried. Pron. Neebelungenleed.

NICAIA (mod. Iznik). Ancient city of Bithynia, Asia Minor. The name was given by Lysimachus in honour of his wife to a city founded by Antigonos. It is celebrated as the scene of the general Church council of 325, convened by Constantine to settle the Arian controversy and consider other questions. This drew up the creed called the Nicene creed. See Arianism.



New Zealand. Map of the British Dominion in the South Pacific Ocean

him out of the infant's estate. See Infant.

NEY, MICHEL (1769-1815). French soldier. Born Jan. 10, 1769, he entered the army in 1788, and rose rapidly during the Revolutionary wars. The capture of Mannheim in 1799 added to his reputa-

NICARAGUA. Republic of Central America. It is bounded N. by Honduras and Salvador, S. by Costa Rica, E. by the Caribbean Sea, and W. by the Pacific. The E. coast is in parts known as the Mosquito Coast. The E. area is peopled by Indians and W. Indian negroes, the W. by Spaniards, Indians, and people of mixed Spanish and Indian origin. In the S.W. is Lake Nicaragua, with an area of about 3,000 sq. m. Managua is the capital, other towns including Leon, Granada, and Matagalpa. The principal port on the W. is Corinto and on the E. Bluefields.

The W. area produces coffee, sugar cane, cocoa, and maize, the E. bananas, coconuts, and pineapples. The extensive forests yield mahogany, cedar, gums, and medicinal plants. The area is about 51,660 sq. m. Pop. 750,000.

The republic is a member of the League of Nations. The constitution provides for an elected president and a parliament of two houses. The U.S.A., by a treaty ratified in 1916, acquired for \$600,000 the option for a canal route through Nicaragua. See Central America.

NICE. City and pleasure resort of the Riviera, France. On the Baie des Anges, an opening of the Mediterranean. at the mouth of the Paillon, it is 740 m. by rly. from Paris. It has fine squares, boulevards, municipal casino, and museums. There is an observatory on Mont Gros. In 1928 a new casino was erected. Pop. 184,441. Pron. Neece.

NICEPHORUS. East Roman Emperor, 1078-81. General of the army of the East under Michael VII, on the latter's resignation he was proclaimed emperor by the troops at Nicaea and crowned in Constantinople, April 3, 1078. During his reign the Seljuk Turks gained possession of Asia Minor except the coasts, and lower Italy fell into the hands of the Normans. His general, Alexius Comnenus (q.v.), raised the standard of revolt, and Nicephorus abdicated and retired to a convent. Pron. Niseeforus.

NICHOLAS or **NICOLAS** (d. c. 342). Bishop and saint. A native of Patara, in Lycia, Asia Minor, he became archbishop of Myra, and opposed the Arians at the Council of Nicaea. He is the patron saint of Russia and of seafarers, travellers, merchants, children, and those overtaken by sudden danger. The popular name Santa Claus is a corruption of S. Nicholas. His festival is kept on Dec. 6.

NICHOLAS I (1796-1855). Tsar of Russia. Born at St. Petersburg, July 6, 1796, third son of Paul I, he married Charlotte, eldest daughter of Frederick William III of Prussia. His elder brother Constantine renouncing his

claim to the throne, Nicholas succeeded Alexander I, Dec. 1, 1825. His foreign policy was directed towards the East, and particularly the conquest of Turkey. The war with Persia, concluded Feb. 28, 1828, much increased Russia's foreign territory. Nicholas died March 2, 1855. See Russia.



Nicholas II,
Tsar of Russia

Feodorovna. He made an alliance with France, initiated the Peace Conference at The Hague, 1894, and granted constitutional reforms. When the revolution broke out in Russia in 1917, Nicholas was forced to abdicate. He then retired to his estate in the Crimea, but was later arrested and

imprisoned at Tsarskoye, at Tobolsk, and finally at Ekaterinburg in the Urals, where, after months of distress, he was assassinated, with the tsaritsa, the tsarevitch, and other members of the imperial family, July 16, 1918. See Ekaterinburg; Russia.

NICHOLAS (1841-1921). King of Montenegro. Born Sept. 25, 1841, he was the nephew of Danilo, prince of Montenegro, then part of the Turkish empire. In 1860 he succeeded the murdered Danilo as prince. The independence

of his country was recognized in 1878, and in 1910 he took the title of king. In 1916, having joined the Great War on the side of Serbia, he was driven out and took refuge in France. He died at Antibes, France, March 1, 1921. See Montenegro.

NICHOLAS (1856-1929). Russian grand duke and soldier. The son of the grand duke Nicholas, and second cousin of Tsar Nicholas II, he was born at St. Petersburg, Nov. 6, 1856. He entered the army as an officer of cavalry, and on the outbreak of the Great War became commander-in-chief of the Russian armies. It was under him that the

Nicholas, King of
Montenegro



operations against the Austro-Germans were conducted until Sept., 1915. The grand duke was made viceroy of Caucasia, and then appointed to the command in the Caucasus. He died at Cap d'Antibes, Jan. 5, 1929.

NICHOLSON, JOHN (1821-57). British soldier and administrator. Born in Ireland, Dec. 11, 1821, he entered the service of the E. India Co. in 1839. Appointed a deputy commissioner in the Punjab after 1848,

Nicholson proved himself an administrator of extraordinary gifts, exerting a marked influence over the natives. When the mutiny broke out in 1857 he checked the movement in his own district, and then took command of a movable column and advanced to Delhi. On Sept. 14, when leading the storming party, he was mortally wounded, and he died Sept. 23, 1857.

NICKEL. Elementary metal. Its chemical symbol is Ni; atomic weight, 58.69; atomic number, 28; specific gravity, 8.35 to 8.96; melting point from 1,450° C. to 1,660° C. In colour it is white with a slightly yellowish tinge. It is one of the hardest and least fusible of metals, ductile, malleable, and tenacious. In tensile strength nickel surpasses iron; specimens carrying a minute proportion of magnesium have shown a tensile strength of over 38 tons to the sq. in. It is slightly magnetic, and is resistant to ordinary atmospheric influences. It may be readily welded to iron and certain alloys.

For many years garnierite, a nickel and aluminium silicate discovered in New Caledonia, was the most important source of the metal and is still the second, but recent discoveries in Ontario have resulted in the latter district becoming the largest producer.

In 1929 the world's production of nickel was approximately 58,000 tons. Nine-tenths of the supply comes from Canada. The first important industrial use to which nickel was put was the plating of other metals. German silver, or nickel silver, is an important alloy of the metal, and alloys of copper and nickel are largely used for coins. The most important use of nickel to-day is in the preparation of nickel steel. Many steels are now made, both tool steel and structural steel, which owe their special properties to nickel. On account of its high degree of magnetic permeability an alloy of nickel and iron known as permalloy is used for coating submarine cables. See Alloy; Metallurgy.

NICOBAR ISLANDS. British islands in the Bay of Bengal. Of the 21 islands 12 are inhabited. They lie S. of the Andaman Is., to which they are joined administratively, and from which they are 75 m. distant. Nancowry Harbour is a spacious anchorage between Nancowry and Camorta. Area 635 sq. m. Pop. 9,272.

NICOLL, SIR WILLIAM ROBERTSON (1851-1923). British journalist and theologian. Born at Lumsden, Aberdeenshire, Oct. 10, 1851, he was Free Church minister of Dufftown, 1874-77, and of Kelso, 1877-85. He settled in London in 1886 and founded The British Weekly, in which he wrote under the name of Claudius Clear; The Bookman, 1891; The Woman at Home (in cooperation with Annie S. Swan), 1893, and other periodicals. He was knighted in 1909, and made a companion of honour in 1921. He died May 4, 1923.

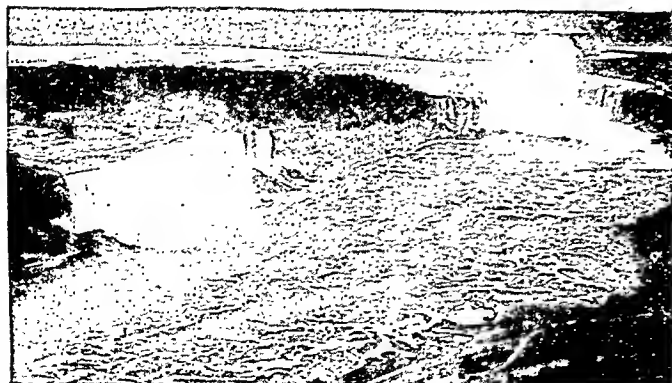


Sir W. R. Nicoll,
British journalist
Hoppe

NICOLSON, HAROLD (b. 1886). British writer. A son of Lord Carnock, he entered the diplomatic service in 1909. He served in Madrid and Constantinople, and in 1919 attended the Peace Conference in Paris. In 1925 he went to Teheran, and in 1927 to Berlin, but in 1929 he left the service. Nicolson's writings include brilliant books on Tennyson, 1923; Byron, The Last Journey, 1924; and Swinburne, 1926; also Some People, 1927, a series of sketches. In 1930 he brought out a biography of his father. He married Victoria Sackville-West, who, in 1927, won the Hawthornden Prize with The Land. In 1929 Nicolson joined the staff of The Daily Express



Nice. Promenade des Anglais, the
famous boulevard on the sea front



Niagara Falls. View from the Canadian side, showing the two great cascades separated by Goat Island. That on the right forms the Horseshoe Falls. See p. 1012
Courtesy of the Canadian Government

NICOTINE. Liquid alkaloid occurring in the leaves of *Nicotiana tabacum*, the tobacco plant. Colourless, with a strong, stupefying, irritating odour, it turns brown on exposure to the air. Tobacco contains from 2 to 8 p.c. of the liquid. Pure nicotine is a most deadly poison, rapidly causing death. Nicotine, being destroyed by burning, is not present in the smoke of tobacco, the toxic action of which is due to carbon monoxide and other substances. See Tobacco.

It is named from Jean Nicot (1530-1600), a French diplomatist, who brought the plant from Portugal into France.

Nidaros. Alternative name for the Norwegian town of Trondhjem (q.v.).

NIDD. River of Yorkshire (W.R.). It rises on Great Whernside, and flows through Nidderdale, past Pateley Bridge, Ripley, and Knaresborough, to the Ouse, 8 m. above York.

NIDDY OR **NIDDIE.** Coal-mining centre of Midlothian. It is 3 m. from Edinburgh, with a station on the L.N.E. Rly. Another place of this name is in Linlithgowshire, known for its ruined castle.

NIEMEN, NEMUNAS, OR MEMEL. River of Russia, Poland, Lithuania, and East Prussia. It rises south of Minsk, and empties itself into the Kurisches Haff, an arm of the Baltic Sea. Its length is 550 m.

In the Great War the Russians retreated to the Niemen after their defeat at Tannenberg (q.v.), Aug., 1914, and in Feb., 1915, they were driven back to it after their advance. See Kovno; Memel; Vilna.

NIETZSCHE, FRIEDRICH (1844-1900). German philosopher. Born at Röcken, in Prussian Saxony, Oct. 15, 1844, at the age of 25 he was appointed professor of classical philology at the university of Basel. Here he lectured until, in 1879, ill-health compelled him to resign. He died Aug. 25, 1900.

Essentially a poet; Nietzsche never framed a philosophy, or systematically arranged his reflections on life. He knew little of science, and when Darwinism spread, he superficially acclaimed it as the gospel of eternal struggle, of the triumph of the strong. He heatedly attacked pity and humanitarianism, and, on the ground that it had introduced these things into Europe, bitterly assailed Christianity. He imagined a group of "free spirits," termed in his writings the Beyond-Men or Supermen. The code of morals of these "master spirits" must differ from the prevailing "slave-morality," and his later works were almost entirely devoted to a "transvaluation of values," or a reconsideration of moral standards.

NIUEPORT (Flemish Nieuwpoort). Town of Belgium. It lies on the Yser, 10 m. S.W. of Ostend, connected by rly. with Dixmude, and by canal with Furnes. The town was completely ruined in the Great War, but was afterwards rebuilt. The 12th-15th century church of Notre Dame, the 15th century cloth hall, the Templars' Tower, and the hôtel de ville were notable buildings. Nieuport-Bains, 2½ m. N., was a small watering place in the dunes at the mouth of the Yser.

Nieuport was the extreme north-eastern point of the Western Skins, phornu timber, gold, and



Nightingale. Male specimen of the European song-bird

front in the Great War, and was an important point in the battle of the Yser (q.v.). It was awarded the Croix de Guerre, 1920. In 1928 a British war memorial to missing soldiers was unveiled here. Pop. 4,676.

NIGER. River of W. Africa. It rises in the mountainous zone on the frontiers of Sierra Leone and French Guinea. After a devious course of some 3,000 m., during which it passes through French territory and Nigeria, it falls into the Gulf of Guinea through a large estuary. The principal tributary is the Benue. The delta commences about 80 m. from the sea and has numerous mouths.

The colony of the Niger, formed in 1922, is part of French West Africa. Niamey is the capital. The estimated area is 404,914 sq. m. Pop. 1,441,413.

NIGERIA. British possession in W. Africa. Bounded W. by Dahomé, N. by French W. Africa, E. by Cameroons, and S. by the Gulf of Guinea, it comprises the colony and protectorate of Nigeria, the latter being divided into the northern and the southern provinces. The colony comprises the former colony of Southern Nigeria, and two groups of provs. have been formed from the former protectorates of Northern and Southern Nigeria. The capital is Lagos. The area is about 335,700 sq. m. Pop. 18,966,600, including about 5,200 Europeans.

A belt of dense mangrove swamp stretches along the coast, intersected by innumerable creeks. Behind lies a forest zone between 50 and 100 m. wide; farther inland the forests become less dense and give way to open country. The chief exports are palm oil, palm kernels, tin, hides and skins, ground nuts, cotton lint, cocoa, mahogany, and rubber. The principal tin fields are in the Bauchi district. Other minerals include gold, silver, lead, coal, and lignite. The railway system consists of a W. division from Lagos and an E. from Port Harcourt. There is a wireless station at Lagos. See Abeokuta; Africa; Negro.



Night Heron. Specimen of the European species
W. S. Berridge, F.Z.S.

Species of small heron, common on the continent of Europe and widely distributed in the Eastern hemisphere. About 2 ft. long, with greenish plumage on the back, purple breast, and long white plumes at the back of the head, it commonly nests in low trees, is usually found in swampy woods, and is most active at night. It visits Great Britain in the spring and autumn. The name is given in America to another species, *N. naevius*.

NIGHT HERON (*Nycticorax griseus*). Species of small heron, common on the continent of Europe and widely distributed in the Eastern hemisphere. About 2 ft. long, with greenish plumage on the back, purple breast, and long white plumes at the back of the head, it commonly nests in low trees, is usually found in swampy woods, and is most active at night. It visits Great Britain in the spring and autumn. The name is given in America to another species, *N. naevius*.

NIGHTINGALE (*Luscinia megarhynchos*). Bird of the thrush family, famous for its sustained and varied song, indulged in far into the night as well as by day. A native of parts of Europe, Asia, and N.W. Africa, its length slightly exceeds 6 ins. Its upper parts are russet brown and the underside is brownish white. Arriving in Britain in mid-April, it ranges only as far N. as S. Yorkshire, and W. as far as the valley of the Exe. It visits parts of Wales, but not Ireland. The nest is placed on or near the ground in the tangled vegetation of copse or hedgerow. While the hen is sitting, the cock frequently, on a branch above, pours out his rich song. This is not heard much after mid-June.

NIGHTINGALE, FLORENCE (1820-1910) British philanthropist. Born in Florence, May 12, 1820, her early life was passed in her home at Lea Hurst, Derbyshire. When quite young she began to take an interest in hospital work, and after visiting hospitals in England and abroad went through a course of training for nursing. During the Crimean War she offered her services to the war office, and in Nov., 1854, with 37 nurses, she reached Scutari.



Florence Nightingale, British philanthropist
After Sir W. E. Richmond

Taking full control, she gradually reformed the sanitary arrangements, and enormously reduced the death rate from cholera, typhus, and dysentery. Returning to England in 1856, she found herself a popular heroine, and was known as the lady of the lamp. In 1907 she was given the order of merit. She died Aug. 13, 1910. Consult Life, E. T. Cook, 1913.

NIGHTJAR (*Caprimulgus europaeus*). Migratory bird common in Great Britain during the summer, and spending the winter in Africa and Southern Asia. In shape it resembles a large swift, with a large, flat head and a wide, gaping mouth. It is called nightjar from its peculiar whirring cry, but flies silently by night in search of insects. It is about 10 ins. long, and its colour is grey, spotted and barred with yellow and brown. It lays its eggs on the bare ground.

NIGHTSHADE. Popular name for several species of plants. Woody nightshade or bittersweet (q.v.) is *Solanum dulcamara*, and common nightshade is *Solanum nigrum*, while enchanter's nightshade is *Circaea lutea*. Deadly nightshade (q.v.) is *atropa belladonna*. Common or black nightshade is an annual weed of waste places and cultivated ground. The white flowers, borne in umbels, are succeeded by globose black berries.



Nightshade. *Atropa belladonna*, or deadly nightshade

NIHILISM (Lat. nihil, nothing). Name given to the tenets of the Russian revolutionary socialists. Nihilism was the result of the terrible conditions of living of the vast mass of the Russian people. It aimed at the freedom of the press in Russia, freedom of speech, religious equality, equality of treatment for women, the land for the people, etc. The nihilist movement developed in 1860-70, and owing to its violent methods wholesale arrests were carried out during the next decade. The assassination in 1881 of the tsar, Alexander II, was followed by methods of extreme severity against the nihilists, who were gradually crushed. See Anarchism.

NIJNI NOVGOROD. City of the Union of Soviet republics. Situated at the confluence of the Volga and the Oka, and on the Moscow-Nijni Novgorod Rly., 250 m. N.E. of Moscow, it is divided into three parts: the upper town, on three hills, surmounted by a citadel; the lower town, on the right bank of the Volga; and the Kuvavino suburb, between the Oka and Volga, where the great fair is held. A university was opened in 1918. Pop. 185,274. See Russia.

NIKE. In Greek mythology, the goddess of victory, called Victoria by the Romans. She was the daughter of the giant Pallas. In art, Nikē is represented as a winged figure with a palm or a wreath.

NILE. River of Africa. It leaves Lake Victoria at its N. end, and proceeds through Lake Kioga, and thence generally N.W., until it reaches the north end of Lake Albert. That lake is fed by the river Semliki, which drains Lake Edward and forms, with the Kagera and other rivers flowing into Lake Victoria from the S., the extreme head-waters of the Nile. From the N. end of Lake Albert the river, here the Bahr-el-Jebel and later the White Nile, flows generally N. to the Mediterranean. At Refaj, 15 m. S. of Gondokoro, it enters the region of the plains and continues thence to Khartoum, some 1,096 m. to the N. Between these two points the Nile is navigable.

Farther on, its chief tributary is the Atbara, which joins the main river 24 m. south of Berber. In the Nile estuary irrigation is largely regulated by the harrages at Damietta and Rosetta, and by canals. The Blue Nile flood, enforced by that of the Atbara, is dammed by the Assuan harrage (see illus. p. 145) and held back for irrigation, as well as by the Sennar dam. The length of the Nile as far as Lake Victoria is 3,470 m. See Assuan; Dam; Egypt; Sennar.

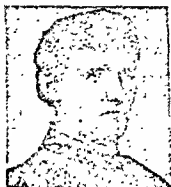
NILE, BATTLE OF THE. British naval victory, Aug. 1, 1798. Lord St. Vincent, who was blockading Cadiz, heard of the armament preparing at Toulon, and sent Nelson to observe the proceedings of the French. After many weeks Nelson discovered the French transports at Alexandria, and their fleet of 13 sail of the line and 4 frigates, commanded by Brueys, anchored in a broken line in Abukir Bay. His plan was to attack the French van and centre, and to anchor inside and outside the French line. In the end the French fleet was surrounded and completely destroyed, leaving Napoleon isolated in Egypt.

NILGAI (*Boselaphus tragocamelus*). Species of antelope found among the plains and low hills of India. It stands between 4 ft. and 5 ft. high at the withers. The adult male is brownish grey, with white markings on the face and throat, white rings at the fetlocks, whitish underparts, and short, smooth, nearly straight horns. The females are smaller, brown, and without horns.

NILGIRI or **NEILCHERRY HILLS.** Hill range of the Deccan, India. The Blue Mts., so called from the haze which characterises the hills when seen from the plains, form a knot of high ground, alt. 6,000 ft., at the junction of the E. and W. Ghats. The elevation modifies the climate, so that the Nilgiris are a hot-weather resort of Europeans.

The district of Madras Presidency known as the Nilgiris comprises almost entirely the area of the Nilgiri Hills, only one-tenth being tilled. Its area is 1,009 sq. m. Pop. 126,519.

NILSSON, CHRISTINE (1843-1921). Swedish vocalist. Born near Vexjö, Sweden, Aug. 20, 1843, she studied in Stockholm and Paris, where she made her debut in 1864. Three years later she visited England, singing with great success in opera and oratorio. She toured in Europe and America, retired in 1891, and died Nov. 22, 1921.



Christine Nilsson, Swedish vocalist

NIMBUS (Lat. a cloud, divine effulgence). In art, the halo encircling

the head of a holy personage. It occurs in Egyptian, Buddhist, and Greco-Roman art, from the last of which it was probably adopted by Christian painters and sculptors in the 6th century. See Aureole.

NIMES. City of France. It is 25 m. N. of the Mediterranean and 174 m. S.W. of Lyons. Apart from the Roman remains the buildings include the cathedral, the churches of S. Baudile and S. Paul, the citadel, dating from the 17th century, and several museums.

Nîmes is famous for its Roman remains. It was founded by Augustus, and an amphitheatre and other features of a typical Roman city were soon erected. The amphitheatre is in an excellent state of preservation. The Maison Carrée is a perfect Roman temple. The Temple of Diana and two Roman gates still remain. The Great Tower is another Roman building. Outside the city are the Pont du Gard, a Roman aqueduct (see illus. p. 108), and the remains of some baths. Pop. 84,667.

NIMROD. In the O.T., a son of Cush, and a notable hunter and warrior (Gen. 10). He ruled at Shinar and is regarded as the founder of the Assyrian power.

NINE PINS. Wooden pieces with which the game of skittles or nine pins is played. The object of the game is to knock the pins over with a wooden ball thrown by the hand in the fewest possible attempts.

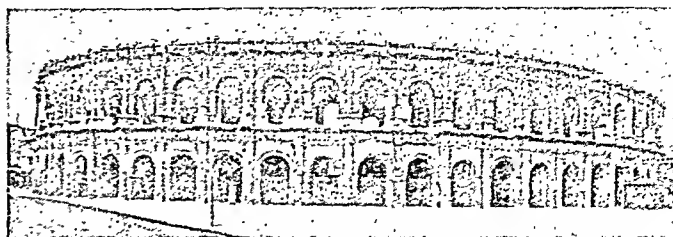
NINEVEH. Assyrian city on the left Tigris bank opposite Mosul. Its walls, enclosing 1,800 acres, with 15 gates and many towers, were protected on three sides by a moat filled from the Choser tributary. This crossed the city to the Tigris. A Mitannian domination, about 1400, preceded the outburst of Assyrian conquest under Shalmaneser I, about 1300, who restored the temple, although making Calah his capital. It was made a royal residence about 1100 B.C.

Nineveh owed its chief renown to Sennacherib (2 Kings 19), who erected a majestic palace at Kuyunjik and an arsenal at Nebi Yunus, the traditional tomb of the prophet Jonah, and also laid out a park wherein he acclimatised exotic animals and plants. Esarhaddon widened the streets and built a palace at Nebi Yunus. The fall of the city, foretold by Nahum and Zephaniah, was achieved by the Medes and Babylonians, 612, and a Sassanian village grew upon the mounds. See Assyria; Babylonia; Mesopotamia; Mosul.

NINGPO. City of Chekiang prov., China. It is situated at the junction of the two branches of the river Yung, 12 m. from the mouth. The site of old Ningpo, which is said to have existed 2205 B.C., is some distance from the present city. Portuguese traders visited Ningpo in 1522. The city was occupied by the British, 1841, and declared a treaty port in 1842. Pop. 212,400.

NINIAN or **NINIAS** (d. c. 432). British bishop and saint. A native of N. Wales, he was educated in Rome, and being consecrated bishop, built what is said to have been the first stone church in Britain at Whit-horn in Galloway. His festival is Sept. 16.

NIOME. In Greek mythology the wife of Amphiön, king of Thebes by whom she had twelve children. She was so proud of this that she mocked the goddess Leto or Latona, who had only given birth to two children, whereupon the offended goddess incited her son Apollo and her daughter Artemis to slay all the children of Niome with their arrows. Niome was changed into a stone. Her story has often been treated in art. See illus. below.



Nîmes. Roman amphitheatre, built 1st-2nd century A.D. It contains thirty-four tiers of seats and was capable of holding 20,000 spectators

NIOLUM or **COLUMBIUM.** Metallic element, chemical symbol Nb or Cb, atomic weight 93.1, atomic number 41. A rare element, it is steel grey in colour, with fine lustre. The metal is obtained from the mineral columbite (q.v.). It occurs also associated with uranium and yttrium in other rare minerals in Norway and Russia.

NIPIGON. Lake and river of Ontario, Canada. The lake is about 30 m. N. of Thunder Bay on Lake Superior, is 70 m. long, and contains about 1,000 islands. The river passes from the lake into Lake Superior.

NIPISSING. Lake of Ontario, Canada. It lies N. of Lake Huron, and is 50 m. long and about 20 m. broad. The Sturgeon flows into it, and French River carries its waters to Lake Huron. It contains many islands. The part of Ontario around it is known as the Nipissing district.

Nippon. Variant spelling for Nihon, or Dai Nihon, Japanese name for Japan (q.v.).

NIPPUR. City of Babylonia. A Sumerian centre, it was on the Shatt-en-Nil, 20 m. E.N.E. of Diwaniya, central Babylonia. It was examined by Layard, 1851, and excavations by Peters, Haynes, and Hilprecht, 1889-1900, revealed a more or less continuous history from reed huts on neolithic marshes to palaces of Parthian kings. Among tablets discovered at Nippur is one representing part of a Babylonian version of the Deluge Legend. See Bcl: Deluge; Parthia.

NIRVANA (Skt. extinction). Buddhistic term for the spiritual state attained by one who has conquered self and, by the exercise of self-sacrifice, sympathy, loving thought, and deeds

of kindness, extinguished desire. The attainment of Nirvana implies the union of the individual with the infinite.

NISH or **Nis.** Town of Yugoslavia, in Serbia, the ancient Naissus. It is on the river Nisava, and is a railway junction. On the



Niobe, with one of her daughters: sculpture attributed to Praxiteles. See above. Uffizi Gallery, Florence

outbreak of the Great War the Serbians made it their temporary capital. It was captured by the Bulgarians, Nov. 5, 1915, but recaptured by the Serbs, Oct. 12, 1918. Pop. 37,000.

NITH. River of Scotland. Rising in W. Ayrshire, it flows 55 m S.E. through Dumfriesshire to the Solway Firth, 13 m. below Dumfries. The district through which it flows is known as Nithsdale.

NITRATE. In chemistry, name given to the salts or compounds of nitric acid (q.v.), i.e. those formed by the substitution of metals for the hydrogen of nitric acid. Nitration is the process of treating a hydrocarbon with nitric acid. See Explosive: Nitrogen: Nitroglycerin

Nitre. Popular name given to potassium nitrate (KNO_3) or saltpetre. See Potassium.

NITRIC ACID or **AQUA FORTIS** (HNO_3). Powerful acid compound of hydrogen, nitrogen, and oxygen. It is made on a large scale by heating Chile nitre with sulphuric acid in cast-iron retorts. A newer method is by the direct combination of the nitrogen and oxygen of the atmosphere by means of an electric arc. Nitrogen peroxide thus formed, when absorbed by water, yields nitric and nitrous acids.

Nitric acid is largely used for the manufacture of explosives, and for making aniline dyes. It forms a series of salts known as nitrates, largely employed in many industries.

NITROUS ACID. This is an unstable compound (HNO_2) formed by dissolving the gas nitrogen trioxide in water. It yields the salts, nitrites

NITRIFICATION. Formation of nitrates in soils and manures through the agencies of micro-organisms. Organic matter in the soil contains abundant nitrogen, but not in a form suitable for plant food. The action of various microscopic bacteria effects the formation of nitrates, provided moisture and some basic substance as carbonate of lime are present, that the temperature is sufficiently high, and that there is free circulation of air. Nitrates are also formed by the fixation of the nitrogen in the air of the soil

NITROGEN. Gaseous element. Its chemical symbol is N; atomic weight, 14.008; and atomic number 7. Nitrogen constitutes about four-fifths of the atmosphere. The element also occurs in a combined state as saltpetre and Chile nitre, and as an essential constituent of animal and vegetable organisms. Animals are dependent for their supply of this element on nitrogenous foodstuffs which they eat. The nitrogenous materials are built up by plants, which obtain their nitrogen from the soil. (See Nitrification.) Nitrogen is prepared artificially by exhausting the oxygen from a confined space of air and so leaving impure nitrogen behind. Chemical methods are also employed. Nitrogen is combustible, and does not support combustion. It is also distinguished by its inactivity.

Ammonia is a compound of nitrogen and hydrogen (NH_3). Nitrogen monoxide, or nitrous oxide (laughing gas)— N_2O —is employed as an anaesthetic in minor operations.

NITROGLYCERIN. Sensitive highly explosive oil, prepared by nitrating glycerin. Its chemical formula is $\text{C}_3\text{H}_5(\text{O.NO}_2)_3$. For many years after its discovery nitroglycerin found no commercial use except as a remedy for angina pectoris, on account of difficulties in its ignition and transport. Nitroglycerin is chiefly used as an ingredient of various explosives. See Cordite; Dynamite.

NITROUS ETHER or **ETHYL NITRITE.** Liquid with a pleasant ethereal smell, made by distilling sodium nitrite with alcohol and dilute sulphuric acid. The alcoholic solution known as sweet spirit of nitre is employed in medicine as a diaphoretic.

NIUE or **SAVAGE ISLAND.** Island of the South Pacific, a dependency of New Zealand. It was named by its discoverer, Capt. Cook, 1774. It is 350 m. S.E. of Samoa, and consists of upheaved coral. Bananas and coconuts are exported. The area is 100 sq m. Pop. 3,795.

NIVELLE, ROBERT GEORGES (1856-1924). French general. Born at Tulle Oct. 15, 1856 he joined the French army as lieutenant of artillery.



R. G. Nivelle,
French general

Oct. 1, 1878. On the outbreak of the Great War, Nivelle, in command of an artillery regiment, participated in the invasion of Alsace. In Sept., 1914, he fought in the battle of the Aisne. Placed at the head of the second army, April 27 1916, he played a great part in the battle of Verdun, and as the result of his success was chosen to succeed Joffre. In April, 1917, he conducted a powerful offensive in the Craonne-Reims area; but the losses were heavy, and he was relieved of his command. From Dec., 1917-1919, Nivelle was commander-in-chief in N. Africa. He died Mar. 23, 1924

NIXIE, Nix, or Nick. Water sprite in the folklore of the peoples of N. Europe. It was often regarded as malignant, and its appearance presaged shipwreck and drowning. In the form Nick it has survived as one of the names used for the devil. Old Nick.

NIZAM (Arab. administration). Title of the sovereign of Hyderabad. The first holder was Asaf Jah (d. 1748), who was styled Nizam-ul-Mulk, i.e. the administrator of the kingdom. See Hyderabad.

NOAH. Biblical patriarch. Son of Lamech and father of Shem, Ham, and Japheth, by divine command he made an ark in which he and his family and a certain number of every kind of animal were preserved during the Deluge. See Deluge.

NOAH'S ARK. The Ark of Noah seems to be thought of as a flat-bottomed vessel. It was to be made of gopher wood, perhaps cedar or cypress, to be provided with rooms for the men and animals, and to be smeared within and without with pitch (Gen. 6, 14). It was to be in three storeys, and to have a light and a door (5, 16).

NOBEL, ALFRED BERNHARD (1833-96). Swedish chemist. Born at Stockholm, Oct. 21, 1833, he assisted his father, an inventor of considerable ability. From 1859-61 they devoted themselves to the study of explosives and perfected the manufacture of nitroglycerin. The inconvenience of a liquid explosive led Nobel, in 1866, to mix the liquid with absorbent earth, forming dynamite. He settled in Paris in 1873, and shortly afterwards invented a still more powerful explosive gelignite. He died Dec. 10, 1896.

The Nobel Prizes are annual awards from a fund established under Nobel's will. By this he set aside the sum of £1,700,000, the interest on which was to be devoted to awarding five prizes each year to men and women eminent in (1) physics, (2) chemistry, (3) physiology or medicine, (4) literature of an idealistic tendency, and (5) the cause of peace. Each prize is of the value of £7,500. The Nobel Foundation is administered by a board of five members, with a president appointed by the king of Sweden. The prizes are open to all nationalities. In addition there are a number of Nobel Institutes.

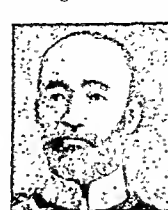


Alfred B. Nobel,
Swedish chemist

NOBLE. English gold coin, first struck by Edward III. Its original value was 6s. 8d. There were half- and quarter-noble pieces. See Angel.

NOCTURNE (Ital. *notturmo*). Musical composition, usually of a dreamy character. Some nocturnes are music to accompany sleep scenes, such as Mendelssohn's *Notturmo* in the music to *A Midsummer Night's Dream*. Chopin adopted the name for some of his pianoforte pieces.

NOGI, MARESUKE, COUNT (1849-1912). Japanese soldier. Born of a Samurai family, he became a soldier, and first saw service in the civil war of 1877. He led a brigade in the war against China, and in the Russo-Japanese



Count Nogi,
Japanese soldier

War commanded the third army. He forced Port Arthur to surrender, and then made the flank march which was the decisive move in the battle of Mukden. From 1896-1900 Nogi was governor of Formosa. With his wife he committed *hara-kiri* (q.v.) on the death of the mikado, Sept. 13, 1912.

NOMINALISM (Lat. *nomen*, name). Term in scholastic philosophy, opposed to realism (q.v.). It was first introduced by Roscellinus at the end of the 11th century. Its upholders asserted that genera and species, the universal notions, had no real existence, being merely sounds and words, products of abstraction; the individual alone has a real existence. Realism won the day, but in the 14th century Occam again brought nominalism into favour.

NONCONFORMITY. Religious movement implying dissent from the established church. Dissenters from the established church appeared in the reign of Elizabeth, and the division was accentuated by the policy of Charles I and Laud. These dissenters were prominent in the Commonwealth period, but at the Restoration episcopacy regained its ascendancy and they were subject to persecution under the old and new laws.

In 1662 was passed the Act of Uniformity, which required of all ministers unfeigned assent and consent to all and everything contained and prescribed in and by "the book of common prayer." It resulted in the ejection from the Church of some 2,000 ministers, many of them the most learned and faithful of her servants. They were compelled to join the ranks of the Congregationalists and Baptists, and though by no means at one with them in opinion, to form a compact body of Nonconformity against the Established Episcopal Church. Dissenting chapels were set up all over the country, but were not allowed to remain in peace. The Conventicle Act of 1664 made it a penal offence to attend their services, and the Five Mile Act prohibited ministers from exercising their vocation within five miles of any city or corporate town, and also from keeping schools. But Nonconformity continued to flourish. Meetings were held in secret, and the numbers of the recalcitrants grew steadily. The accession of William and Mary, and the passing of the Toleration Act in 1689, brought substantial relief. This Act did not repeal any of the previous legislation against the Nonconformists, but simply did away with the penalties of disobedience.

During the whole of the 18th century the history of Nonconformity was a struggle for existence, marked by repeated hostile measures, but also by a gradual escape from many of the disabilities under which it was suffering. During the latter part of the century the final separation of the Methodists from the Establishment led to a greater strengthening of the

Nonconformist position, while the 19th century witnessed a gradual but sure process of emancipation. The Conventicle Act, the Five Mile Act, and the Test and Corporation Act were all repealed in the first quarter of the century. At the same time began a definite campaign for the disestablishment of the Church, resulting in the disestablishment of the Church in Ireland in 1868, and of the Church in Wales in 1920. See Baptists; Church of England; Congregationalism; Methodism; Presbyterianism, etc.

Nones (Lat. nonus, ninth). The fifth, and in March, May, July, and Oct. the seventh day of the Roman month. See Calendar.

NONJUROR. Name given to a number of clergymen of the Church of England who refused to take the oath of allegiance to William and Mary in 1689. Their contention was that they had already taken the oath to James II, and could not transfer their allegiance to another sovereign at the bidding of Parliament. In 1690 they were deprived of their livings. Altogether they numbered about 400. When deprived they held services of their own, and kept up an episcopal succession, but they gradually died out.

NONPAREIL. Name of a size of printing type. Half the size of pica, it is one size smaller than minion, and one size larger than pearl, and is also called 6-point. Twelve lines make an inch.

This line of type is set in nonpareil.

NONSUCH. Name given by Henry VIII to a palace which he built between Cheam and Ewell, in Surrey. Begun in 1538, it was used in Elizabeth's time and that of the first three Stuarts as a royal residence. Charles II gave it to the duchess of Cleveland, who sold it, and it was pulled down about 1680.

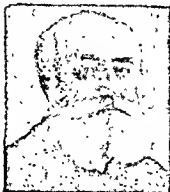
On Old London Bridge was a remarkable structure called Nonsuch or Nonsuch House. Built about 1580, it was taken down about 1757. See London Bridge.

NORBITON. District of Surrey, just outside Kingston-on-Thames. It is 12 m. from London, of which it is a residential suburb, and has a station on the Southern Rly.

NORBURY. District of Surrey, and residential suburb of London. It is 7 m. from London, on the Southern Rly. Here are the links of the N. Surrey Golf Club. Norbury Park is near Box Hill.

There is a Norbury in Derbyshire, 7 m. from Uttoxeter, on the L.M.S. Rly.

NORDAU, MAX SIMON (1849-1923). German-Hungarian author. A Jew by family, he was born at Budapest, July 29, 1849, studied medicine, travelled widely, and having settled in Paris, practised as a physician. Nordau's novels and dramas were written to illustrate his social theories. He is better known by his analytical studies of contemporary society, *The Conventional Lies of Civilization*, 1884; *Paradoxes*, 1885; *The Malady of the Century*, 1887; and *Degeneration*, 1892. All these works have been translated into English. He died Jan. 22, 1923.



Max Nordau,
German-Hungarian
author

NORDENSKIÖLD, NILS ADOLF ERIK, BARON (1832-1901). Finnish explorer. Born Nov. 18, 1832, he studied mineralogy and mining. In 1858 he made valuable geological discoveries in Spitsbergen. In 1861 and 1864 he made expeditions to Spitsbergen, while in 1868 he made a polar expedition, reaching 81° 42' N. He accomplished the N.E. passage in the Vega in 1878-80. He died Aug. 12, 1901. He gave his name to the Nordenskiöld Sea, a section of the Arctic Ocean.

His nephew, Nils Otto Gustaf Nordenskiöld (1869-1928), made a scientific exploration of the straits of Magellan and Patagonia in 1895-97, and of Alaska in 1898. He commanded the Swedish expedition (1901-4) which discovered Oscar II Land. He died June 2, 1928.



N. A. Nordenskiöld,
Finnish explorer

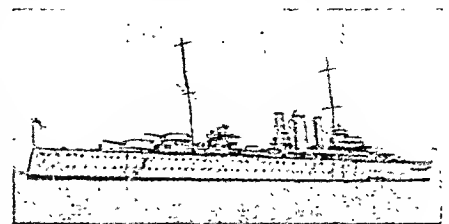
NORE, THE. Sandhank in the Thames estuary. It is about 3 m. N.E. of Sheerness and 47 m. E. of London. At the E. extremity is the Nore lightship, anchored here since 1732. The Nore is generally regarded as marking the mouth of the Thames, and is an important anchorage. The naval mutiny at the Nore took place May 20 to June 13, 1797.

NORE. River of the Irish Free State. Rising in the N. of co. Tipperary, it flows 70 m. S.E. through Leix (Queen's) co. and co. Kilkenny to the Barrow, which it enters 2 m. above New Ross.

NORFOLK. Eastern county of England. It has about 90 m. of coastline on the Wash and the North Sea, and an area of 2,054 sq. m. The surface in the interior is undulating or flat, the latter in the W., where the fen district enters the county, while along much of the coast it is quite low, and suffers in parts from the encroachments of the sea. Along the Wash, however, some land has been reclaimed. The chief river is the Yare, with its tributaries, Wensum, Bure, and Waveney, which divides Norfolk from Suffolk. The Great Ouse and its tributaries also water the county, which contains the Broads (q.v.).

Norfolk is a noted agricultural county. Wheat, barley, and oats are largely grown; cattle and sheep are reared; and some land is given up to fruit. It is served by the L.N.E.R. Norwich is the county town and the largest place. Other corporate towns are Yarmouth, King's Lynn, and Thetford, while there are a number of small towns, among them East Dereham, North Walsham, Downham Market, and Wymondham. Cromer and Hunstanton are watering places. The county, which is mainly in the diocese of Norwich, sends five members to Parliament. In the south the Forestry Commissioners have planted a large forest called Breckland. Norfolk was part of E. Anglia, and soon after 1066 became one of the richest portions of England. Pop. 504,293.

NORFOLK. City of Virginia, U.S.A., in Norfolk co. It stands on Elizabeth river, an arm of Chesapeake Bay, 68 m. S.E. of Richmond, and is served by the Chesapeake and Ohio and other rlys., and by Transatlantic and other steamship lines. Transport facilities are also provided by two canals. An important port and the second largest city of the state, Norfolk has a spacious harbour and some manufacturing industries. Pop. 166,000.



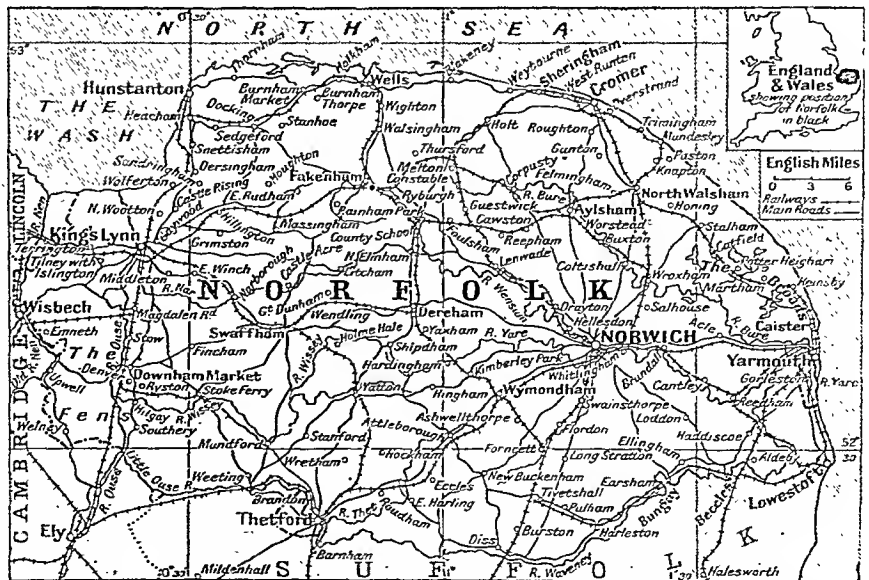
Norfolk. Cruiser launched in 1928. She is the nameship of a class of four ships
S. Critt, Southern

NORFOLK. Name ship of a class of four British cruisers. She was built at Fairfield, and was begun in 1927 and completed in 1930. She displaces 10,000 tons and has an overall length of 633 ft. Her principal armament is eight 8-in. guns, and she was built to burn oil and to steam 32 knots. She is fitted with geared turbines with Diesel engines.

NORFOLK, EARL AND DUKE OF. English titles, the latter being the senior dukedom in the peerage. After the Conquest of 1066 the earldom of Norfolk was held by several nobles, including members of the family of Bigod. It passed through female descent from the Bigods to the Mowbrays, and in 1397 Thomas Mowbray was created duke of Norfolk. John, the 4th duke, died without sons.

In 1483 John Howard, descended through a female from Thomas Mowbray, the 1st duke, was created duke of Norfolk by Richard III, and the present title dates from that year. Many of the earlier earls and dukes of Norfolk had filled the office of earl marshal, and in 1672 this was made hereditary in the family. The principal seat of the family is Arundel Castle (q.v.), and the eldest son of the duke bears the courtesy title of earl of Arundel or earl of Surrey. See Mowbray, Baron.

Thomas Howard (1536-72), who became 4th duke in 1554, planned a marriage with Mary Queen of Scots, and was imprisoned. Released on a promise of allegiance



Norfolk. Map of the maritime county of East Anglia, noted for agriculture and stock raising

and renunciation of the marriage scheme, he was drawn into the Ridolfi Plot, arrested, and denying that he was a Roman Catholic, was executed as a traitor, Jan. 2, 1572.

Henry Fitzalan-Howard (1847-1917), the 15th duke, was postmaster-general, 1895-1900. He died Feb. 11, 1917, and was succeeded by his son, Bernard Marmaduke (b. 1908). See Earl Marshal.

NORFOLK ISLAND. Islet in the Pacific within the territory of the Commonwealth of Australia. It is 5 m. long, 3 m. wide, was discovered by Capt. Cook in 1774, and is 400 m. from New Zealand. Very fertile, it was handed over to Australia in 1914. Pop. 902.

NORFOLK REGIMENT. Regiment of the British army. Formerly the 9th Foot, it was raised in 1685 to assist in crushing Monmouth's rebellion, and first saw active service in Holland in 1701. In 1704 it went to Portugal, and its services at Almanza, 1707, earned for it the figure of Britannia as a regimental badge. It was fighting throughout the



Norfolk Regimental badge

Peninsular War, and later in the Afghan War, Sikh Wars, Crimean War, Afghan War, 1879-80, and Burmese War, 1889. In the South African War it formed part of the 7th division. In the Great War the 1st battalion was part of the expeditionary force; the 2nd battalion was in Gallipoli in 1915, went to Mesopotamia, and was in the siege of Kut, 1916, while other battalions did excellent service. The regimental depot is at Norwich.

NORHAM. Village of Northumberland. It stands on the Tweed, 6 m. from Berwick-on-Tweed, with a station on the L.N.E. Rly. It is famous for its castle, one of the strongest of the defences of the English border, and mentioned in *Marmion*. The parish church dates from Norman times. The district around is known as Northshire, and until 1844 was a detached part of Durham. Pop. 697.

NORMAN. Name given to the people of Normandy and their descendants in countries which were conquered by them. The word Norman is identical with Northman, but is generally restricted to the mixed race which arose after the conversion of the heathen settlers and their adoption of French culture. In addition to the conquest of England in the 11th century the Normans conquered and colonised South Italy and Sicily.

The term Norman architecture is applied to a style of building in England and Normandy during the 11th and 12th centuries. It is said to have been introduced into England by Edward the Confessor, who built the choir and transepts of the old Abbey of Westminster, but was not fully developed until after the Conquest. Historically, it is a local variety of Romanesque. The main characteristics of Norman, as of Romanesque, architecture are the round arch and the plain round or rectangular column.

NORMAN, MONTAGU COLLET (b. 1871). British banker. A son of F. H. Norman, he was educated at Eton and King's College, Cambridge. He became a partner in the family banking business, and in 1901 went to S. Africa with his regiment; there he won the D.S.O. In 1920 Norman was chosen governor of the Bank of England, and he still held that position in 1930, being responsible for important financial negotiations during the period. In 1923 he was made a privy councillor.

NORMANBY. District of Yorkshire (N.R.). It is 4 m. from Middlesbrough, in the urban district of Eston. Another Normanby, is the village, 5 m. from Pickering, from which the family of Phipps takes its title.

Constantine Henry Phipps (1797-1863), the 1st marquess of Normanby, was a son of Henry Phipps, 1st earl of Mulgrave. In 1834 he was appointed lord privy seal, and from 1835-39 was lord-lieutenant of Ireland. From 1839-41 he was home secretary under Lord Melbourne; from 1846-52 ambassador in Paris; and from 1854-58 at Florence.

NORMANDY. Old province of France. It was one of the largest of those into which France was divided before the Revolution, and takes its names from the Normans or Northmen. The name is still used to describe the district. Normandy lies along the English Channel between Picardy and Brittany. Its capital is Rouen, while Caen, Bayeux, Lisieux, and Evreux are interesting Norman towns. For many years the Channel Islands belonged to the duchy.

William the Conqueror, who became duke in 1035, was crowned king of England in 1066, and when he died in 1087 he left Normandy to his eldest son Robert, thus separating it from England. In 1106, however, Robert was beaten at Tinchebrai by his brother, Henry I, and the two countries were again united.

In 1202 Philip Augustus invaded Normandy, and when Rouen surrendered to him in 1204, it was all in his possession. It was formally surrendered to France in 1259.

The dialect of Old French spoken in Normandy and England was called Norman-French. Anglo-Norman is the name of the dialect spoken by the dominant class in England for about two centuries after the Conquest.

NORMANTON. Urban dist. and market town of Yorkshire (W.R.). It stands on the Calder, 10 m. from Leeds, and is an important rly. junction, as the L.M.S. and L.N.E. railways meet here. The principal building is the church of All Saints. There is a 16th century grammar school. There are coal mines and iron works. Market day, Mon. Pop. 16,130.

South Normanton is a market town near Alfreton, Derbyshire, also a coal-mining centre. Market day, Sat. Pop. 6,996.

NORN. In Scandinavian mythology, the three goddesses of fate. They cast lots over every infant and lay gifts in his cradle. One is malignant, the others are beneficent.

NORRIS, SIR JOHN (c. 1547-1597). English soldier. A son of Baron Norris, he fought for the Huguenots in France and was with the English force that went to assist the Dutch in their struggle against Spain. Having been governor of Munster, he led an army to the Netherlands in 1585, and in 1588 was marshal of the camp formed at Tilbury. After the defeat of the Armada he went with Drake on the expedition against Spain. He died July 3, 1597, at Mallow. Known as Black Norris, Sir John left several sons who won reputations as soldiers. The family memorial is in S. Andrew's Chapel, Westminster Abbey. The barony of Norris is now held by the earl of Abingdon.



Sir John Norris, English soldier After Zuccheri

NORSE. Adjective properly signifying Norwegian. It is applied usually to the older period of Norwegian history, including the age of the great migrations, often in a sense which includes the whole Scandinavian race.

NORTH, BARON. English title borne since 1554 by the family of North. Sir Edward North, a prominent lawyer and courtier in the time of Henry VIII, was made a baron in 1554. The 7th baron was a cousin, who was already Baron Gnilford and in 1752 was made earl of Guilford. The two titles were held together until 1802, when the 3rd earl died. The barony

then fell into abeyance: in 1841 it was granted to Susan, daughter of the earl of Guilford. She and her husband, J. S. Doyle, took the name of North, and in 1884 their son William became the 11th baron. The family seat is Wroxton Park, Banbury.

Frederick, Lord North (1732-92), was a son of Francis, 1st earl of Guilford, whom he succeeded in 1790. Entering Parliament in 1754, he was chancellor of the exchequer, 1767, and premier from 1770 until 1782, when he formed a coalition with C. J. Fox, and held office as secretary of state, April-Dec., 1783. He died August 5, 1792.

North, CHRISTOPHER. Pseudonym adopted by John Wilson (q.v.).

NORTHALLERTON. Market town and urban dist. of Yorkshire (N.R.). It is 30 m. from York on the L.N.E.R., on which it is a junction, and is the capital of the north riding. The chief building is the cruciform church of All Saints. There is a hospital founded in the 15th century and a grammar school. Market day, Wed. Pop. 4,791.

NORTHAM. Urban dist. of Devonshire. It stands near the left bank of the Torridge, 1½ m. from Bideford, with a station on the G.W. Rly. Pop. 5,861. Another Northam is part of the county borough of Southampton.

NORTHAM. Town of Western Australia. It is 57 m. E. from Perth by rly., a junction for the S. line to Albany, and the centre of a rich agricultural district. Pop. 4,895.

NORTH AMERICA. Northern part of the continent of America, sometimes regarded as a continent in itself. Covering an area of approximately 8,200,000 sq. m., it is bounded W. by the Pacific Ocean, E. by the Atlantic, terminates S. in a narrow isthmus connecting it with S. America, and extends N. to the Arctic. North America has a population of approximately 138,000,000. (See map, p. 71.)

Politically N. America is divided from E. to W. N. of 48° and the Great Lakes, except Alaska and Newfoundland, is the dominion of Canada. Alaska is a dependency of the U.S.A., which, stretching from the 46th parallel to the borders of Mexico, is the main centre of wealth and population, containing approximately four-fifths of the population of the continent. The republic of Mexico, which extends from the S. land borders of the U.S.A. to Guatemala, is a great plateau of amazing natural wealth.

Geographically the lines of division in N. America run from N. to S. The W. comprises the highest land in N. America, the Cordilleras, extending inland from the Pacific from 300 to 1,000 m. The E. includes the Appalachian highlands and an Atlantic coastal plain. Between them the Central Plain reaches from N. to S., with an ill-defined watershed in the height of land near the U.S.A. boundary. See Canada; Mexico; United States, etc.

NORTHAMPTON. Borough and market town of Northamptonshire, also the co. town. It stands on the left bank of the Nene, 66 m. from



Northampton. The Town Hall, built in 1864

London, and is served by the L.M.S. Rly. The chief buildings in the borough are the four parish churches: S. Peter's, a fine building, mainly Norman; S. Giles', varied in style and of somewhat later date; All Saints', rebuilt after

1675: and the round church of S. Sepulchre. S. John's and S. Thomas's hospitals are old foundations. The county hall dates from the 17th century, and the grammar school from the 16th. The chief industry is the manufacture of hoots and shoes. At Hardingstone is one of the existing Eleanor crosses. Market days, Wed. and Sat. Pop. 90,895.

The battle of Northampton was fought July 10, 1460, during the Wars of the Roses.

NORTHAMPTON, EARL AND MARQUESS OF. English titles borne by the family of Compton since 1618 and 1812. Earlier holders were members of the family of Bohun. William Parr in 1547 was made marquess of Northampton. In 1618 William Compton was made earl. Charles, the 9th earl, was made a marquess in 1812. The family seats are Castle Ashby, Northampton, and Compton Wynates (q.v.), Warwickshire. The marquess's eldest son is called Earl Compton.

NORTHAMPTONSHIRE. County of England. The surface is mainly undulating except in the soke of Peterborough, which is in the fen country.

Its area is 998 sq. m. The principal rivers are the Welland, dividing the county from Leicestershire and Lincolnshire, and the Nene. The Avon, Cherwell, Leam, and Ouse rise in the county, which is served by the L.N.E. and L.M.S. Railways, and by the Grand Union Canal. Northampton is the co. town; other large places are Peterborough, Kettering, and Wellingborough. Higham Ferrers, Daventry, and Brackley are small boroughs, and there are a number of urban districts. It is famous as a hunting county. For administrative purposes Northamptonshire is divided into two counties, each having a county council—Northampton proper and the soke of Peterborough. It sends four members to Parliament. Pop. 349,363.

NORTHAMPTONSHIRE REGIMENT. Originally the 48th and 58th Foot, the former having been embodied in 1741 and the latter in 1755, it first saw active service in Flanders, 1744. As evidence of its share in the defence of Gibraltar, 1779–83, the "Castle and Key" is seen on its badge. It fought in Egypt in 1801, in the New Zealand War, 1845–47, in the Crimean War, and in South Africa in 1879, 1881, and 1899.

In the Great War the 1st battalion formed part of the original expeditionary force, fought in all the battles of 1914, and took part in the battle of the Somme in 1916. Northamptonshire yeomanry took part in the British campaign in Italy, 1917–18. The regimental depot is at Northampton.

NORTH AUSTRALIA. Territory of Australia, one of the two parts into which Northern Territory was divided in 1927.

Northern Territory, having been part of New South Wales and then of South Australia, was added to the Commonwealth in 1911. In 1927 it was divided into two territories, North Australia and Central Australia, each under a government resident and an advisory council of four members. The capital is Darwin, and its area is 287,220 sq. m.

NORTH BAY. Town of Ontario, Canada. The capital of the Nipissing district, it is 360 m. from Montreal, and stands on the N.E. side of Lake Nipissing. It is served by the C.P. Rly. and C.N. Rly. Pop. 10,692.

NORTH BERWICK. Burgh and watering place of Haddingtonshire (East Lothian). It stands at the entrance to the Firth of Forth, 23 m. from Edinburgh, and is served by the L.N.E.R. With fine sands, it is famous for its golf courses. Behind the town is Berwick Law, a conical hill, 610 ft. high, and near are the Bass Rock and Tantallon and Dirleton Castles. Pop. 4,583.

NORTHBROOK, THOMAS GEORGE BARING, 1ST EARL OF (1826–1904). British politician.



Northamptonshire. Map of the eastern inland county of England

Born Jan. 22, 1826, he was the eldest son of Baron Northbrook. He entered Parliament in 1857 as a Liberal for Penryn and Falmouth. Northbrook was under-secretary for war 1868–72, and from 1872–76 viceroy of India. In 1876 he was made an earl, and from 1880–85 was first lord of the admiralty. He died Nov. 15, 1904, when his son, Francis George (1850–1929), became the second earl. On the latter's death the barony passed to his cousin, Francis Arthur Baring, while the earldom became extinct. See Baring.

North Cape. Promontory on Magerö Island, N. Norway. It is generally accepted as the northernmost point of Europe.

NORTHCLIFFE, ALFRED CHARLES WILLIAM HARMSWORTH, VISCOUNT (1865–1922). British newspaper proprietor. Born at Chapelized, Dublin, July 15, 1865, while still a child he showed a bent for journalism. When only 17 he was made assistant editor of Youth. He went in 1885 to Coventry, where he worked for Liffé & Sons, but in 1887 he returned to London and founded a publishing business. In 1888 he established the weekly journal Answers, which achieved great financial success, and was the forerunner of many other periodicals. Answers was floated as a limited

company and was thus the germ of the business of the Amalgamated Press. In 1894 he and his brother Harold, afterwards Viscount Rothermere (q.v.), acquired The Evening News (London), then in a bankrupt condition.



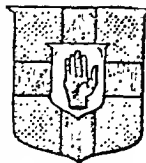
Lord Northcliffe, Newspaper owner Hoppel

On May 4, 1896, Harmsworth founded The Daily Mail, a halfpenny morning newspaper which revolutionized British journalism. In 1903 he founded The Daily Mirror, disposing of it in 1914 to Viscount Rothermere. In 1904 he received a baronetcy, followed in 1905 by a peerage. In 1908 he became chief proprietor of The Times. He was a persistent supporter of aircraft, and offered through the Daily Mail various prizes of £10,000 each for great flights.

During the Great War Northcliffe carried out a campaign for munitions in 1915, and unwaveringly advocated compulsory service, which was introduced in 1916. He advocated with success the construction of aircraft on a great scale, and paid numerous visits to the various Allied fronts. In May, 1917, he was appointed chairman of the British war mission in the U.S.A., and on his return he was advanced to the rank of viscount. In Feb., 1918, he became director of propaganda in enemy countries. He died Aug. 14, 1922, when the title became extinct. A memorial bust outside S. Dunstan's church, Fleet Street, was unveiled in 1930. Consult Northcliffe: an Intimate Biography, Hamilton Fyfe, 1930.

NORTHERN IRELAND. Part of the United Kingdom of Great Britain and Ireland, but with its own parliament and executive. It consists of six Ulster counties, Antrim, Armagh, Down, Fermanagh, Londonderry, and Tyrone, and covers 5,236 sq. m. Belfast is the capital. Pop. (1926) 1,256,500.

Northern Ireland came into existence under an Act of 1920, amended in 1922. It has a parliament of two houses; the senate of 26 members and the House of Commons of 52. Responsible to this parliament is a cabinet under a prime minister, and the king is represented by the governor-general: Northern Ireland sends 13 members to the parliament at Westminster, which is responsible for matters of imperial concern. Other matters, including finance, are controlled by the parliament, the buildings of which are at Stormont, just outside Belfast. Northern Ireland has its own Supreme Court of Judicature, its own schemes of national health insurance and old age pensions and its own police, the Royal Ulster Constabulary.



Arms of Northern Ireland

NORTHERN UNION. Union of professional football clubs that play a game resembling Rugby football. It came into being in 1895 owing to the refusal of the English Rugby Union to recognize professionalism, and its constituent clubs are almost entirely confined to Lancashire and Yorkshire. See Football.

NORTHFLEET. Urban dist. of Kent. It is on the Thames, 22 m. from London, with a station on the Southern Rly. The church of S. Botolph is a fine building, partly Decorated and partly Perpendicular. The industries include the manufacture of cement, paper, and chemicals. Pop. 17,500.

Northolt. District of Middlesex. It is 2½ m. S.S.W. of Harrow. There is an aerodrome here. Pop. 700.



Northamptonshire Regimental badge

and renunciation of the marriage scheme, he was drawn into the Ridolfi Plot, arrested, and denying that he was a Roman Catholic, was executed as a traitor, Jan. 2, 1572.

Henry Fitzalan-Howard (1847-1917), the 15th duke, was postmaster-general, 1895-1900. He died Feb. 11, 1917, and was succeeded by his son, Bernard Marmaduke (b. 1908). See Earl Marshal.

NORFOLK ISLAND. Islet in the Pacific within the territory of the Commonwealth of Australia. It is 5 m. long, 3 m. wide, was discovered by Capt. Cook in 1774, and is 400 m. from New Zealand. Very fertile, it was handed over to Australia in 1914. Pop. 902.

NORFOLK REGIMENT. Regiment of the British army. Formerly the 9th Foot, it was raised in 1685 to assist in crushing Monmouth's rebellion, and first saw active service in Holland in 1701. In 1704 it went to Portugal, and its services at Almanza, 1707, earned for it the figure of Britannia as a regimental badge. It was fighting throughout the



Norfolk Regimental badge

Peninsular War, and later in the Afghan War, Sikh Wars, Crimean War, Afghan War, 1879-80, and Burmese War, 1889. In the South African War it formed part of the 7th division. In the Great War the 1st battalion was part of the expeditionary force; the 2nd battalion was in Gallipoli in 1915, went to Mesopotamia, and was in the siege of Kut, 1916, while other battalions did excellent service. The regimental depot is at Norwich.

NORHAM. Village of Northumberland. It stands on the Tweed, 6 m. from Berwick-on-Tweed, with a station on the L.N.E. Rly. It is famous for its castle, one of the strongest of the defences of the English border, and mentioned in Marmion. The parish church dates from Norman times. The district around is known as Northamshire, and until 1844 was a detached part of Durham. Pop. 697.

NORMAN. Name given to the people of Normandy and their descendants in countries which were conquered by them. The word Norman is identical with Northman, but is generally restricted to the mixed race which arose after the conversion of the heathen settlers and their adoption of French culture. In addition to the conquest of England in the 11th century the Normans conquered and colonised South Italy and Sicily.

The term Norman architecture is applied to a style of building in England and Normandy during the 11th and 12th centuries. It is said to have been introduced into England by Edward the Confessor, who built the choir and transepts of the old Abbey of Westminster, but was not fully developed until after the Conquest. Historically, it is a local variety of Romanesque. The main characteristics of Norman, as of Romanesque, architecture are the round arch and the plain round or rectangular column.

NORMAN, MONTAGU COLLET (b. 1871). British banker. A son of F. H. Norman, he was educated at Eton and King's College, Cambridge. He became a partner in the family banking business, and in 1901 went to S. Africa with his regiment; there he won the D.S.O. In 1920 Norman was chosen governor of the Bank of England, and he still held that position in 1930, being responsible for important financial negotiations during the period. In 1923 he was made a privy councillor.

NORMANBY. District of Yorkshire (N.R.). It is 4 m. from Middlesbrough, in the urban district of Eston. Another Normanby, is the village, 5 m. from Pickering, from which the family of Phipps takes its title.

Constantine Henry Phipps (1797-1863), the 1st marquess of Normanby, was a son of Henry Phipps, 1st earl of Mulgrave. In 1834 he was appointed lord privy seal, and from 1835-39 was lord-lieutenant of Ireland. From 1839-41 he was home secretary under Lord Melbourne; from 1846-52 ambassador in Paris; and from 1854-58 at Florence.

NORMANDY. Old province of France. It was one of the largest of those into which France was divided before the Revolution, and takes its names from the Normans or Northmen. The name is still used to describe the district. Normandy lies along the English Channel between Picardy and Brittany. Its capital is Rouen, while Caen, Bayeux, Lisieux, and Evreux are interesting Norman towns. For many years the Channel Islands belonged to the duchy.

William the Conqueror, who became duke in 1035, was crowned king of England in 1066, and when he died in 1087 he left Normandy to his eldest son Robert, thus separating it from England. In 1106, however, Robert was beaten at Tinchebrai by his brother, Henry I, and the two countries were again united.

In 1202 Philip Augustus invaded Normandy, and when Rouen surrendered to him in 1204, it was all in his possession. It was formally surrendered to France in 1259.

The dialect of Old French spoken in Normandy and England was called Norman-French. Anglo-Norman is the name of the dialect spoken by the dominant class in England for about two centuries after the Conquest.

NORMANTON. Urban dist. and market town of Yorkshire (W.R.). It stands on the Calder, 10 m. from Leeds, and is an important rly. junction, as the L.M.S. and L.N.E. railways meet here. The principal building is the church of All Saints. There is a 16th century grammar school. There are coal mines and iron works. Market day, Mon. Pop. 16,130.

South Normanton is a market town near Alfreton, Derbyshire, also a coal-mining centre. Market day, Sat. Pop. 6,996.

NORN. In Scandinavian mythology, the three goddesses of fate. They cast lots over every infant and lay gifts in his cradle. One is malignant, the others are beneficent.

NORRIS, SIR JOHN (c. 1547-1597). English soldier. A son of Baron Norris, he fought for the Huguenots in France and was with the

English force that went to assist the Dutch in their struggle against Spain. Having been governor of Munster, he led an army to the Netherlands in 1585, and in 1588 was marshal of the camp formed at Tilbury. After the defeat of the Armada he went with Drake on the expedition against Spain. He died July 3, 1597, at Mallow. Known as Black Norris, Sir John left several sons who won reputations as soldiers. The family memorial is in S. Andrew's Chapel, Westminster Abbey. The harony of Norris is now held by the earl of Airedale.

NORSE. Adjective properly signifying Norwegian. It is applied usually to the older period of Norwegian history, including the age of the great migrations, often in a sense which includes the whole Scandinavian race.

NORTH, BARON. English title borne since 1554 by the family of North. Sir Edward North, a prominent lawyer and courtier in the time of Henry VIII, was made a haron in 1554. The 7th haron was a cousin, who was already Baron Guilford and in 1752 was made earl of Guilford. The two titles were held together until 1802, when the 3rd earl died. The harony

then fell into abeyance: in 1841 it was granted to Susan, daughter of the earl of Guilford. She and her husband, J. S. Doyle, took the name of North, and in 1884 their son William became the 11th haron. The family seat is Wroxton Park, Banbury.

Frederick, Lord North (1732-92), was a son of Francis, 1st earl of Guilford, whom he succeeded in 1790. Entering Parliament in 1754, he was chancellor of the exchequer, 1767, and premier from 1770 until 1782, when he formed a coalition with C. J. Fox, and held office as secretary of state, April-Dec., 1783. He died August 5, 1792.

North, CHRISTOPHER. Pseudonym adopted by John Wilson (q.v.).

NORTHALLERTON. Market town and urban dist. of Yorkshire (N.R.). It is 30 m. from York on the L.N.E.R., on which it is a junction, and is the capital of the north riding. The chief building is the cruciform church of All Saints. There is a hospital founded in the 15th century and a grammar school. Market day, Wed. Pop. 4,791.

NORTHAM. Urban dist. of Devonshire. It stands near the left bank of the Torridge, 1½ m. from Bideford, with a station on the G.W. Rly. Pop. 5,861. Another Northam is part of the county borough of Southampton.

NORTHAM. Town of Western Australia. It is 57 m. E. from Perth by rly., a junction for the S. line to Albany, and the centre of a rich agricultural district. Pop. 4,895.

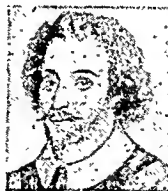
NORTH AMERICA. Northern part of the continent of America, sometimes regarded as a continent in itself. Covering an area of approximately 8,200,000 sq. m., it is bounded W. by the Pacific Ocean, E. by the Atlantic, terminates S. in a narrow isthmus connecting it with S. America, and extends N. to the Arctic. North America has a population of approximately 138,000,000. (See map, p. 71.)

Politically N. America is divided from E. to W. N. of 46° and the Great Lakes, except Alaska and Newfoundland, is the dominion of Canada. Alaska is a dependency of the U.S.A., which, stretching from the 46th parallel to the borders of Mexico, is the main centre of wealth and population, containing approximately four-fifths of the population of the continent. The republic of Mexico, which extends from the S. land borders of the U.S.A. to Guatemala, is a great plateau of amazing natural wealth.

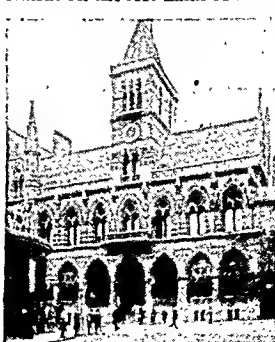
Geographically the lines of division in N. America run from N. to S. The W. comprises the highest land in N. America, the Cordilleras, extending inland from the Pacific from 300 to 1,000 m. The E. includes the Appalachian highlands and an Atlantic coastal plain. Between them the Central Plain reaches from N. to S., with an ill-defined watershed in the height of land near the U.S.A. boundary. See Canada; Mexico; United States, etc.

NORTHAMPTON. Borough and market town of Northamptonshire, also the co. town. It stands on the left bank of the Nene, 66 m. from

London, and is served by the L.M.S. Rly. The chief buildings in the borough are the four parish churches: S. Peter's, a fine building, mainly Norman; S. Giles', varied in style and of somewhat later date; All Saints', rebuilt after



Sir John Norris, English soldier After Zuccheri



Northampton. The Town Hall, built in 1864

NORTHWOOD. District of Middlesex. It is 14 m. N.W. of London, on the Met. and L.N.E. Rlys. With Eastcote. It forms part of the urban dist. of Ruislip-Northwood. The parish church of Holy Trinity, erected 1854, is of flint. Pop., urban dist., 9,113.

NORTON, CAROLINE ELIZABETH SARAH (1808-77). British poet and novelist. Born in London, she was a daughter of Thomas and grand-daughter of Richard Brinsley Sheridan. Her husband, the Hon. George Chapple Norton (d. 1875), whom she married in 1827, brought divorce proceedings against her in 1836, but her character was vindicated at the trial. Her pamphlet, *English Laws for Women*, written in 1853, with other writings, forms a landmark in the movement for women's emancipation. In 1877 she married Sir W. Stirling-Maxwell, but died on June 15 in the same year.



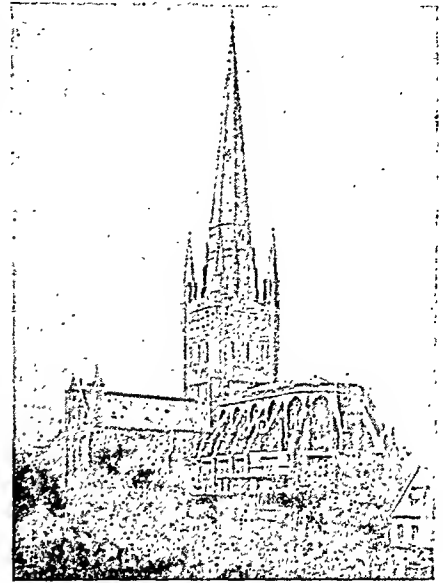
Caroline Norton,
British writer
After J. Haytér.

NORTON ST. PHILIP. Village of Somerset, 6 m. from Bath. Here is The George Inn, dating from the 15th cent., which claims to be the oldest licensed house in England. Pop. 448.

NORWAY. Kingdom of N. Europe. Occupying the W. and N. parts of the Scandinavian peninsula, it is bounded W. by the North Sea and Atlantic Ocean. N. by the Arctic Ocean. E. by Sweden and Finland, and S. by the Skagerrak. The capital is Oslo, other important towns being Bergen, Nidaros (Trondhjem),

and Stavanger. The area is 125,086 sq. m. Pop. 2,810,592, including some 20,000 Lapps. The coast, except in the extreme S., is rocky and indented by innumerable fiords. Inland the country is very mountainous. Lakes are numerous. The rivers are, as a rule, short and turbulent. The barren and mountainous surface affords little scope for agriculture, the arable soil being mainly confined to strips in deep and narrow valleys and around the fiords and lakes. Oats, barley, potatoes, rye and wheat are raised, but the chief natural sources of wealth are the forests and the fisheries. Minerals include silver, copper, and iron ores. The lack of coal is compensated for by the enormous water power resources. There are 2,383 m. of rly. and several wireless stations. Norway attained her greatest prosperity under Haakon IV, 1217-63. At different stages of her history she has been intimately associated with Denmark and Sweden. In Jan., 1814, Norway was ceded to Sweden by Denmark. In the following August Norway was proclaimed independent, but in union with Sweden. In 1905 this union was dissolved, and Prince Charles of Denmark was elected king of Norway, taking the name of Haakon VII. The constitution dates from 1814, but has been much modified. The legislative body, the Storting, is composed of 150 members, divided into two sections, the Odelsting and the Lagting. Norway is a member of the League of Nations. See Denmark; Haakon; Oslo; Sweden.

NORWICH. City and county borough of Norfolk, also the county town. It stands on the Wensum, near its junction with the Yare, and is 114 m. from London, on the L.N.E. and L.M.S. Rlys. Its chief magistrate has been known since 1910 as the lord mayor. The cathedral was begun in Norman times, but not completed until about 1500. Two old gateways lead to it. Other churches include the 15th century S. Peter Mancroft and the modern Roman Catholic cathedral. S. Andrew's Hall, originally the nave of a 15th century monastic church, is used for the musical festivals. The guildhall was built in the 15th century. The castle, with a Norman keep, is now used as a museum and art gallery. George Borrow's house is now a Borrow museum. The early 16th century Strangers' Hall is used as an English folk museum. In the Maddermarket Theatre, a reconstruction of an Elizabethan theatre, the Norwich Players act Shakespearean and classical plays.



Norwich. Cathedral of Holy Trinity, from the south-east. It dates from Norman times
Frith

Since 1921 the following buildings have been presented to the city: the Lazar House, now a branch public library; the Bredwell, containing a museum of local industries; and the 14th century Suckling House, a fine example of a burgess's mansion. Mousehold Heath is public property. The Carrow bridge over the Wensum was opened in 1923.

The industries include engineering works and the making of boots and shoes, crape, starch, mustard, etc. Pop. 120,661.

NORWOOD. District of London. It forms the S. part of the bor. of Lambeth, lying between Streatham W., Sydenham E., and Croydon S., and is chiefly residential. At West Norwood is the S. Metropolitan cemetery. The Royal Normal College for the Blind was established at Upper Norwood in 1874. In the 17th century Norwood was covered by an oak wood; a spa, called Beulah Spa, was opened here in 1831. See Gipsy Hill.

NOSE. Organ of the sense of smell, also used in respiration. In human beings it ends below in the nostrils, which mark the entrance to the two nasal cavities, separated by the septum, between the base of the skull and the roof of the mouth. The roof, sides, and floor of the cavities are formed of certain bones of the skull, the roof being composed of a bone perforated like a sieve to afford passage to the nerve of smell. The sides are each covered by three highly vascular bodies (the turbinates) which moisten and warm the air passing through.

The nerve of smell breaks up into many branches, which end in the upper parts of the septum and sides of the nose. Respiration should always take place through the nose in order that air may be warmed and moistened before reaching the throat and lungs. See Adenoid; Smell; also illus. p. 1022.

Nose ornaments are worn by certain primitive races. They consist of objects attached to the nose by perforation. Made of bone, shell, feather, quill, tooth, wood, pearl, or metal, sometimes engraved or jewelled, their purpose was originally amuletive.

NOTARY (Lat. nota, note). In England, originally an officer in the ecclesiastical courts. Notaries are still admitted by the archbishop of Canterbury through his representatives, but their duties are mainly secular. A notary attests or certifies documents, mainly in connexion with a failure to meet bills of exchange. In England a notary is usually a solicitor; in Scotland he must be a law agent.



Norway. Man and woman in the costumes of the country

and Stavanger. The area is 125,086 sq. m. Pop. 2,810,592, including some 20,000 Lapps.

The coast, except in the extreme S., is rocky and indented by innumerable fiords. Inland the country is very mountainous. Lakes are numerous. The rivers are, as a rule, short and turbulent. The barren and mountainous surface affords little scope for agriculture, the arable soil being mainly confined to strips in deep and narrow valleys and around the fiords and lakes. Oats, barley, potatoes, rye and wheat are raised, but the chief natural sources of wealth are the forests and the fisheries. Minerals include silver, copper, and iron ores. The lack of coal is compensated for by the enormous water power resources. There are 2,383 m. of rly. and several wireless stations.

Norway attained her greatest prosperity under Haakon IV, 1217-63. At different stages of her



Norway and Sweden. Map of the two kingdoms forming the Scandinavian peninsula

NOTATION. Musical term, meaning the use of signs to represent musical sounds. Three chief methods have been employed:

(1) representing scale relations, as in the phonetic systems of the Hindus and Chinese, the old Greek systems, and modern Paris-Galin-Chevé figure notation, and the Tonic Sol-fa notation; (2) representing the fingering of certain instruments, known as tablature; (3) representing fixed pitch, as in the ordinary staff notation of modern W. Europe. Each of these methods of showing pitch is aided by time symbols consisting of various kinds.

ARITHMETICAL NOTATION.

The progress of arithmetic was long hampered for lack of a suitable notation. The number which in the present Arabic system is written 888 was written by letters in the Greek system and *DDCCLXXXVIII* in the Roman system. The latter is obviously inconvenient for arithmetical work; the advantage of the Arabic system over the Greek is that while in the Greek one letter stands for eight hundred, another for eighty, and yet another for eight, the Arabic symbol 8 can signify eight or eighty or eight hundred, according to position, the symbol 0 serving as a means of discriminating between two numbers like 88 and 808. The medieval invention of decimals put the finishing touch to the Arabic system of notation. See *Decimal*.

NOTIFICATION. In English law, the compulsory notification of specified infectious diseases by medical practitioners to the local medical officer of health. At the present time the notifiable diseases are smallpox, cholera, diphtheria, membranous croup, erysipelas, scarlatina, scarlet fever, typhus, typhoid, enteric, relapsing, continued or puerperal fever, acute primary and acute influenzal pneumonia, dysentery, plague, cerebro-spinal fever, acute polio-myelitis, acute polio-encephalitis, ophthalmia neonatorum, and encephalitis lethargica. Tuberculosis is also notifiable, and malaria, if contracted in England or Wales. From time to time other diseases, such as measles, may be made notifiable.

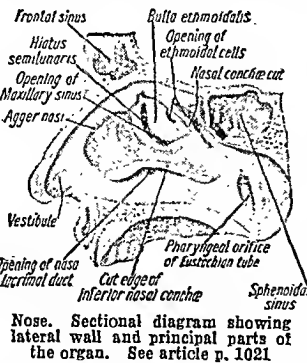


Notornis. Almost extinct bird of New Zealand

ous churches are thus dedicated in Paris and elsewhere, notably the cathedral, Notre Dame de Paris. Begun in 1163, and completed early in the 14th century, the existing building was a temple of reason in the years 1793-94. A magnificent example of decorated Gothic architecture, its length is 390 ft.

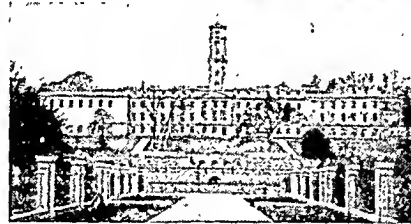
NOTTINGHAM. British light cruiser. She took part in the Dogger Bank (1915) and Jutland (1916) battles, and was torpedoed and sunk in the North Sea, Aug. 19, 1916, when 38 of her crew were lost. The Nottingham was of the Chatham class, and was completed in 1914. See *Birmingham*.

NOTTINGHAM. City, market town, and the co. town of Nottinghamshire. It stands on the N. bank of the Trent, 123 m. N.W. of



Nose. Sectional diagram showing lateral wall and principal parts of the organ. See article p. 1021

London, and is served by the L.M.S. and L.N.E. Rlys., and also by canals. Its area, since the extension of the boundaries in 1877, is 10,935 acres. It was made a city in 1897, and its chief magistrate is a lord mayor. Market days, Wed. and Sat. Pop. 262,624. The city's chief church is S. Mary's, a fine Perpendicular structure of the 15th century; S. Peter and S. Nicholas are old foundations; the others are modern. The Roman Catholic cathedral of S. Barnabas is a noble building, and the Nonconformists have many churches. The castle, acquired and rebuilt by the corporation after 1831, is now an art gallery. In Nov., 1928, the large open market place was closed, its place being taken by a new one. The old one has been laid out as an open space, and at one end are the new civic buildings which replaced the old exchange. Other buildings are the guildhall and the shire hall. A university college was opened in 1878. In 1928 much of its work was transferred to a fine range of buildings which are situated at the western end of the city.



Nottingham. New University building opened in 1928. Above, Civic Hall, which was opened in 1929

The city's staple industry is the making of lace, but others have been introduced. It has now large engineering works and factories for making hosiery, chemicals, bicycles and clothing. The city has a recorder, who holds here courts of quarter sessions, and is an assize town. It sends four members to Parliament, and has two daily papers, *The Guardian* and *The Journal*; also two evening papers. The airport at Tollerton was opened in 1930.

Nottingham is a famous football centre. Its two clubs, Notts County and Nottingham Forest, have both won the association cup; the former in 1894 and the latter in 1898.

NOTTINGHAM, EARL OF. English title borne by several families. In 1596 the seaman, Charles Howard, known as Lord Howard of Effingham, was made earl of Nottingham. The title again became extinct on the death of his grandson, the third holder, in 1681. In the same year it was revived for Heneage Finch (1621-82), a successful lawyer, who became lord chancellor. His son Daniel (1647-1730), the 2nd earl, was secretary of state under William III and Anne. In 1729 he succeeded to the earldom of Winchelsea, and his descendants have styled themselves earl

of Winchelsea and Nottingham. The earl's eldest son is called Viscount Maidstone.

NOTTINGHAMSHIRE. County of England. Wholly inland, its area is 844 sq. m. It is in the main a level region, much of it being the valley of the Trent, but there are wolds in the S. and some hills in the W. The chief river is the Trent; others are its tributaries, the Idle and the Erewash.

The county may be divided roughly into a coal-mining and industrial area in the S. and S.W., and an agricultural one in the N.E. and S.E. It is served by the L.M.S. and L.N.E. Rlys., and several canals pass through it. In the county are the remains of Sherwood Forest, including the district known as the Dukeries (q.v.). Other places of interest are Cresswell Crags, where traces of primitive men have been found, and the fine mansions of Welbeck, Thoresby, and Clumber. Nottingham is the county town; other boroughs are Mansfield, Newark, and Retford. Five members are returned to Parliament. Nottinghamshire is mainly in the diocese of Southwell. It has long been famous for its cricketers, and is a hunting centre. Pop. 641,149. See map, p. 1023.

The Nottinghamshire and Derbyshire Regiment is more usually known as the Sherwood Foresters (q.v.).

NOTTING HILL. District of London. Part of the borough of Kensington, it is N. of Holland Park, with Bayswater E. and Shepherd's Bush, W. At Notting Hill Gate was an old turnpike, removed in 1860. The district, built over 1828-48, was named from the manor of Knotting or Nutting Barnes.

NOVAIA ZEMBLIA. Archipelago of the Arctic Ocean, belonging to Russia, also known as Novaya Zemlya. It is composed mainly of two large islands. A large number of small islands, mainly off the E. coast, combine to make the archipelago. The total land area is estimated at 35,150 sq. m. See map, p. 118.

NOVA SCOTIA. One of the three maritime provinces of the Dominion of Canada. Its area is 21,428 sq. m., of which 360 sq. m. are water, and its population 550,000. The province consists of two parts. The larger is the peninsula of Nova Scotia, surrounded by the sea except where the isthmus of Chignecto, only 11½ m. wide, unites it to New Brunswick. The smaller is the island of Cape Breton (q.v.) to the N., the strait of Canso lying between the two. There are a number of lakes, including Rossignol in Nova Scotia, and the Bras d'Or lakes in Cape Breton. Many small islands lie off the coast. Halifax is the capital, the chief port, and the largest city. Sydney, on Cape Breton, a mining centre, is the next in size.

The affairs of Nova Scotia are managed by a ministry which is responsible to a parliament of one house, the House of Assembly, of 38 members, who are elected every five years, by the votes of all adults. The province sends 10 members to the Senate and 14 to the House of Commons of the Dominion. Its second chamber was abolished in 1928.

Nova Scotia is mainly an agricultural area. Cape Breton has a rich coalfield, and in Nova Scotia coal, iron, gold, copper, etc., are mined. The fisheries are valuable. The prov. is well served by rlys., which converge on Halifax.

Nova Scotia was colonised by the French, who called it Acadie. In the time of James I it was taken by the English, and, as those sent out at this time were chiefly Scotsmen, it was named Nova Scotia. The French regained it, but in 1713 it was ceded formally to Great Britain. See *Canada*.

NOVEL. Work of fiction written in prose and presenting dramatically the interplay of human emotions upon a stage of real life. The origin of the novel, like that of the word, was Italian. The short, racy fabliau of France was appropriated and perfected by Italian genius

of the Cinquecento, and as the novella of Boccaccio, Masuccio, Ser Giovanni, and the other novellieri was carried on the tide of the Renaissance all over Europe. The authors of these early novelle gave a true picture of life as they saw it, and this is still the first distinguishing note of the novel. In the 150 years that were the flowering time of English prose fiction, between the publication of Fielding's first novel and Meredith's and Hardy's last, the novel has been adapted to an infinity of different shapes.

NOVELLO, VINCENT (1781-1861). British composer. Born in London, Sept. 6, 1781, of mixed Italian and English parentage, he became a chorister in the Sardinian Chapel and later an organist. He was a founder of the London Philharmonic Society, composed church music, masses, etc., and edited collections of sacred music. His publication of these was the beginning of the business of Novello and Co., founded by his son Joseph in 1811. One of his daughters, Clara Novello (1818-1908) achieved great distinction as a vocalist. He died Aug. 11, 1861.

NOVOCAINE. Local anaesthetic. A paramino-henzoyldiethylamino-ethanol hydrochloride, it is used in surgery in a similar

NOYAU (Fr. kernel). Liqueur made from the kernels of peach stones or bitter almonds, brandy, and sugar. It is made in Martinique, and exported from Bordeaux.

NOYES, ALFRED (b. 1880). British poet. Born Sept. 16, 1880, he published his first book of verse, *The Loom of Years*, 1902. It was followed by many others which showed the easy flow of his coloured and resonant verse, including *Drake*, an English Epic, 1906; and *Forty Singing Seamen*, 1907. His collected poems were issued in 2 vols. in 1910, and a third vol. in 1920. He published a study of William Morris in 1908. Later works include *Tales of the Mermaid Tavern*, 1912, the *Torchbearers*, 1922 and 1925, and *Ballads and Poems*, 1928. He published two volumes of essays: *Aspects of Modern Poetry*, 1924, and *The Opalescent Parrot*, 1929; and a novel, *The Return of the Scarecrow*, 1929.



Alfred Noyes,
British poet

NOYON. City of France. It stands on the Verre, near its junction with the Oise, 67 m.

from Paris. Its famous cathedral of Notre Dame was badly damaged in the Great War. Noyon was one of the Frankish capitals, but from about 900 to the Revolution was only important as a bishopric. Noyon was the birthplace of Calvin. It was almost completely destroyed in the Great War. Pop. 6,025.

NUBIA. Name formerly applied to a large region of N. Africa. Nubia formed part of the ancient kingdom of Ethiopia, and was divided into Nubia Proper or Lower Nubia, extending from near Assuan to Dongola, and Upper Nubia. See Africa; Ethiopia; Sudan.

NULLITY (Lat. nullus, none). State of being null or void. In England the term is chiefly used in a legal sense. A nullity of marriage is a proceeding in the divorce court to declare a marriage null and void from the beginning on one of the following grounds: absence of real consent, by reason of one party being insane, or by reason of fraud or duress; consanguinity or affinity of the parties; or impotence of either party. The existence of a prior marriage is also ground for a decree of nullity.

When the decree has been pronounced, it is as if no marriage had ever been celebrated, and the wife resumes her maiden name. See Divorce.

NUMA POMPELIUS. Second of the seven legendary kings of ancient Rome. He is reputed to have reigned from 715 to 673 B.C. He first established the priestly offices of the Roman state. He also divided the land among

the people, and the craftsmen into guilds according to occupation.

NUMBERS. Fourth book of the Pentateuch, or, rather, Hexateuch. It takes its title from the Septuagint, the book being so called because it contains accounts of two numberings of the children of Israel. The Hebrew title is *In the Wilderness*. Three divisions may be distinguished: (a) the first census and other events preparatory to the departure from Sinai, Num. 1-9, 28; (h) the journey from Sinai to Moab, Num. 10, 29 to 25, 18; (c) the second census, the appointment of Joshua as Moses' successor, and other events, Num. 26-36.

NUMIDIA. Roman province in N. Africa. The name means land of nomads, and the country corresponded roughly with the eastern part of Algeria. Masinissa united it with Roman aid, 201 B.C. On the overthrow of Jugurtha the Romans conquered Numidia, but left it under its own kings. Juba I having sided with Pompey, Julius Caesar made Numidia a Roman province, 46 B.C., but in 25 B.C. Augustus gave the W. part to Juba II. The Numidians provided light cavalry for the Carthaginian, and later for the Roman army.

NUMISMATICS (Gr. nomisma, a coin). Science of coins and other similar objects, such as medals. The Greek colonies, especially in the south of Italy and Sicily, had their coinage from the 6th century onwards. The Sicilian series ranks in artistic value above any other in the whole history of coinage, the 10-drachm pieces of Syracuse, first struck at the end of the 5th century, being perhaps the most famous example of the art. The Roman coinage begins in the second half of the 4th century, with the as and its parts in bronze; the silver denarius, for long the standard denomination in the ancient world, was instituted in 269 B.C., at a weight of 4.55 grammes. The decay of the Roman Empire, and the rise of the modern nationalities, are faithfully reflected in the style of their coinages. In the 7th century the first Mahomedan coins made their appearance; although, as the representation of living objects was forbidden, they had little influence on the artistic side, they were soon serious rivals to the Byzantine gold in international currency.

It was not until the 13th century that the nations of western Europe began to possess a regular gold currency, and this began with the florin of Florence, first coined in 1252, and the ducat of Venice, first coined in 1280. The first English regular currency of gold, the noble, was begun in 1344. Among the northern nations the best period of the coinage is the 14th century, although the practical absence of portraiture robs it of one source of interest. In Italy the highest level is reached in the portrait coins of the end of the 15th century, but the noblest contribution of Italy to numismatic art is in the cast medal. Antonio Pisano of Verona (first half of the 15th century), the founder and greatest exponent of modern medallist art, was a master of dignified portraiture and fine design. Germany in the 16th century developed a characteristically vigorous but unimaginative school of portraiture; and in the 17th century France in Guillaume Dupré and England in Thomas Simon could boast of portrait medallists of very high rank.

During the 16th century the technique of striking, as distinct from casting, medals was rapidly developed. The old method of striking the metal between dies with a sledgehammer was gradually replaced by a press worked with a screw, which was firmly established in most countries in the second half of the 16th century, and by the second half of the 17th century superseded the primitive method. The 18th and 19th



Nottinghamshire. Map of the midland industrial county. See p. 1022

manner to cocaine, being employed in the form of a 0.5 p.c. solution as a local anaesthetic, particularly in the operation of tooth extraction. See Anaesthesia.

NOWRA. Town of New South Wales. It is the terminus of the coast rly., 94 m. in length, S. from Sydney, at the mouth of the Shoalhaven river. Pop. 1,900.

centuries show for the most part a deplorable falling off in the art of coinage, which is hardly redeemed by 20th century attempts at revival made chiefly in France. See Frane; Mark; etc.

NUMMULITE. Genus of fossil foraminifera. The shells are remarkable for being flattened and circular, resembling coins, and yet containing a large number of chambers arranged in a spiral. The genus was abundant during the Eocene, and limestones of that period composed chiefly of nummulites are sometimes several hundred feet in thickness. Such limestone formations are noticeable in the Alps, N. Africa, Asia, and Central America.

NUN (Lat. nouna, an elderly woman, mother, or nurse) Word adopted by the early Church for a woman consecrated to a life of devotion. The habit, veil, etc., forming the characteristic garb of a nun are of early date and a modification of the ordinary dress of women in ancient times. The term nun is only correctly applied to a female member of the Benedictine order, or of one of the orders springing from it. Women belonging to the orders of friars—as the Carmelite, Franciscan, and Dominican—are known as Sisters. See Mercy, Sisters of; Monasticism; Poor Clares.

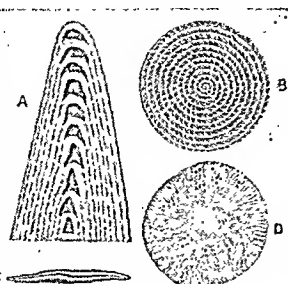
NUNC DIMITTIS. Opening words used as the title of a Latin canticle or hymn (Lord, now lettest Thou Thy servant depart in peace) in the Book of Common Prayer. It is the Song of Simeon (Luke 2, 29-32), and in the Anglican Church is sung after the second lesson at Evensong.



Nuremberg. 1. Schöne Brunnen, a Gothic fountain built in 1380. 2. Derrer Brücke, the 15th cent. bridge from the island of Trödelmarkt

NUNEATON. Mun. bor. and market town of Warwickshire. It is on the little river Anker, 97 m. from London and 9 m. from Coventry, and is served by the L.M.S. Rly. and also by a canal. The chief buildings are the churches of S. Nicholas and S. Mary, and there is a grammar school dating from the 16th century and a free school of 1712. The town is a railway junction, and has manufactures of bricks, tiles, etc. Market days, Tues. and Sat. Pop. 41,901. See Eliot, George.

NUNHEAD. District of S.E. London. It is E. of Peckham Rye, and forms part of the bor. of Camberwell. It contains Nunhead cemetery, as well as the underground Beacroft reservoir of the Met. Water Board.



Nummulite. Diagrams illustrating formation of fossil shell. A. High-magnified vertical section of part of shell showing construction of air chambers. B. Horizontal bisection, showing spiral of chambers. C. Vertical bisection. D. Shell viewed from above

imperial castle of the 11th and 12th centuries has been largely modernised. The streets contain many fine houses of the 16th and 17th centuries, with richly ornamented fronts, among them being the house of Albert Dürer. Of the fountains the chief is the Schöne Brunnen (Beautiful Fountain), adorned with statues. There are many fine churches.

The grammar school was founded by Melancthon, 1526. The town hall, in Italian Renaissance style, dates from 1622. The Germanic Museum, established 1857 in a medieval Carthusian monastery, contains a large collection of German art. Watches, called Nuremberg eggs, are said to have been invented here. Pop. 392,494. Consult The Story of Nuremberg, C. Headlam, 1899.

NÜRNBERG. German light cruiser. Completed in 1908, she was sunk by the Kent in the battle of the Falkland Islands (q.v.), Dec. 8, 1914. Another German light cruiser of this name, launched in 1916, was surrendered to Britain in Nov., 1918, and scuttled at Scapa by her crew, June, 1919.

NURSING. Science of tending the sick. In olden days the laws of health were well understood both in Egypt and in India, while the highest standard of all was attained by the Jews. Hippocrates (460-377 B.C.) inculcated principles of good nursing, while in ancient Rome the best care available was given to wounded soldiers. From the beginning of the Christian era the chief orders of women concerned with nursing were the deaconesses, widows, and nuns.

With the dissolution of the monasteries by Henry VIII and the expulsion of the religious sisters from the English hospitals, lay nurses of the servant class were introduced. From the late 17th century to the middle of the 19th was the darkest period of nursing history, both in Great Britain and abroad. In 1836 Theodor Fliedner and his wife founded at Kaiserswerth the first deaconess institute, and from here Elizabeth Fry, Florence Nightingale, and others carried ideas and methods into Great Britain.

The movement for the organization of nursing as a profession was inaugurated in 1887 with the formation of the British Nurses' Association. To-day the training of nurses is regulated by the state through the Nurses Registration Act of 1919. A General Nursing Council was established for England and Wales and another for Scotland. General training

NUREMBERG or **NÜRNBERG.** City of Bavaria. It stands in a plain on the river Pegnitz, 95 m. N. of Munich. It is an important rly. junction, and is served by the Ludwigs Canal, connecting the Main and Danube. Its specialties are hops and toys. There are also chemical works, machine shops, lithographic and printing works, and manufactures of railway stock, electrical apparatus, pencils, matches, etc.

The old city is remarkably picturesque, most of its lofty walls and towers of the 14th-16th centuries being preserved. The

occupies three or four years, and there are five supplementary registers for male, mental, fever, mental defectives, and sick children's nurses, with varying periods of special training.

The most important branches of nursing to-day are: district nursing, including the highly skilled and specialised work of Queen's nurses; public health work, in which nurses are employed under county, borough, or city schemes; private nursing; nursing of mental disorders; midwifery and maternity nursing, controlled by a Central Midwives Board; and nursing in the services, army, navy, and R.A.F. See Hospital; Nightingale, F.; Red Cross.

The College of Nursing was founded in 1918 as a central organization to promote the interests of the profession.

NUT. Strictly, the dry fruit developed from the carpels of the flower. The carpel contains two or more ovules, but, as a rule, only one develops into a seed—the kernel of the nut. This is invested by a shell of hard or leathery tissue, which does not split until the seed germinates. The term as used popularly has a wider meaning; a ground-nut

is not a nut, but a pod; and walnut is the "stone" of a fruit formed like a plum or cherry (drupe). Types of true nuts are found in acorn, hazel, beech mast, and sweet chestnut.

NUTCRACKER. Bird belonging to the crow family. An occasional visitor to Great Britain, it is rather smaller than a jackdaw, and has brown plumage spotted with white, except the wings and



Nutcracker. Specimen of the species of crow

tail, which are black. It occurs in woods, where it feeds mainly on seeds of conifers and insects.

NUTHATCH (Sitta). Genus of birds of the family Sittidae. The common nuthatch, S.

caesia, is fairly common in the S. and midland counties of England. It is about 5 ins. long; and runs upwards or downwards over the branches and trunk of a tree like a mouse. It feeds upon the insects and grubs that it finds in crevices in the bark, in search of which it taps the tree like a woodpecker.

NUTMEG (Myristica fragrans). Seed of a tree of the order Myristicaceae, a native of Malaya. The tree attains a height of about 30 ft., has large, aromatic, leathery, alternate, evergreen leaves, and small, pale yellow flowers. Its seeds, in the form of nutmeg and mace, are used in cookery as a flavouring, and in medicine as an aromatic, stimulant, and carminative, but chiefly to mask the taste of less pleasant drugs.

NUX VOMICA. Seeds of a small tree, Strychnos nux-vomica, of the order Loganiaceae. A native of India and N. Australia,

it has strongly veined, oval, opposite leaves, and panicles of greenish-white tubular flowers. The fruit is a large berry, resembling an orange, with numerous silky-haired, disk-like seeds. The dried seeds yield the alkaloids strychnine (q.v.), brucine, loganin, and igasuric acid.



Nux Vomica. Foliage, flowers, and fruit (A)



Nutmeg. Seed of Myristica fragrans.



Nuthatch searching a tree trunk for insects



Oak. Specimen of the British oak tree, *Quercus robur*, in full leaf

NYANZA. Central African word for lake. Examples are found in the names of the three lakes which form the main sources of the Nile—Victoria Nyanza, Albert Nyanza, Edward Nyanza, now more often called Lakes Victoria, Albert, and Edward.

NYASA. Lake of Central Africa. About 300 m. long and from 15 to 60 m. wide, at an alt. of 1,645 ft., it occupies part of the Great African Rift Valley. The only outlet is the Shire river. Fort Johnston, Kota-Kota, and Karonga are important ports on its shores.

NYASALAND. British protectorate in Central Africa. It lies along the W. shores of Lake Nyasa and to the S. of that lake, and covers 37,890 sq. m. The administrative capital is Zomba, but the chief settlements are Blantyre and Limbe in the Shire Highlands. Pop. 1,877 Europeans, 1,085 Asiatics, and 1,326,165 natives.

A large portion of the protectorate is mountainous. The only important river is the Shire. There is a rly. from Chindio on the Zambezi to Blantyre (174 m.). Another, opened in 1922, runs from Murruga, on the S. bank of the Zambezi, to Beira, a distance of 175 m. This establishes direct rly. connexion between Blantyre and Beira.

The Nyasaland Protectorate was constituted in 1891. Before that date it was part of British Central Africa, from 1893 to 1907 being known as the British Central Africa Protectorate. It is administered by the Colonial Office. See Africa.

NYMPH. In classical mythology, a localised nature spirit, regarded as a minor deity. There were sea and water nymphs, such as the Oceanids, the Nereids, and the Naiads; Oreads, or mountain nymphs; Dryads and Hamadryads, or tree nymphs. They had no temples, but offerings were made to them of milk and honey in grottoes, at fountains, trees, etc.

NYREN. Name of two English cricketers. Richard Nyren came of a Scottish family, originally Nairn. He was settled in Hampshire by about 1750, when he founded the Hambleton club. Left-handed and one of the finest bowlers of his day, he was also a good batsman.

His son John (1764-1837), besides being a cricketer of repute, wrote *The Young Cricketer's Tutor*, comprising full directions for playing the Elegant and Manly Game of Cricket. John died at Bromley, June 30, 1837.

NYSTAGMUS. Oscillating movement of the eyeball, usually lateral, but sometimes vertical or rotatory. The most frequent form is coal-miner's nystagmus, due primarily to working in a dim light. It is also a symptom of various nervous disorders, particularly that known as disseminated sclerosis, and is then virtually incurable. See Eye.

NYX. In Greek mythology, the personification of night, called *Nox* by the Romans. She was the daughter of *Chaos*, and is represented as a winged goddess in a chariot.

O. Fifteenth letter and fourth vowel of the English and Latin alphabets. Its two chief values are long o, as in *dote*, and short o as in *dot*. It equals short u in another, and oo in *prove*. It combines freely with other vowels. *Oa* equals long o in *boat*, *moat*, but not in *abroad*, *board*; *oe* equals c in words of Greek origin, and is now generally so spelt, as in *economy*; in other words it equals long o as in *hoe*, *roe*. *Oo* is long in *boon*, and short in *wood*, and in *blood*, *food* equals short u. See Alphabet; Phonetics.

OAK (*Quercus*). Large genus of trees of the order *Amentaceae*, natives of the N. temperate regions, Indo-Malaya, the Pacific coasts, etc. The typical species is the British oak (*Q. robur*) whose trunk may be 120 ft. high, with a girth of 60-70 ft., covered with thick rugged bark. It lives to a great age, and does not produce acorns until between 60 and 70 years old. It does not pay to cut for timber until in its second century. The holm oak (*Q. ilex*) (q.v.) and the Turkey oak (*Q. cerris*) often to be seen in parks and gardens, are both from S. Europe. Another S. European species met with is the cork oak (*Q. suber*), and a well-represented N. American species is the dyer's oak (q.v.), whose large leaves turn an orange or dull red colour in autumn.

The fine-grained, hard oak timber is employed largely in structural work where endurance and the bearing of heavy strains are concerned. **OAK GALL.** Abnormal growth of the surface tissues of the oak, caused by the attacks of gall-wasps. Oak galls were formerly used in ink manufacture and are still used in dyeing.



Oak Gall. The marble or bullet gall

OAK-APPLE DAY. Name given in England to May 29. The birthday of Charles II in 1630, and the day in 1660 on which he set foot in England at the Restoration, it was celebrated by royalists, who decorated their houses with branches and leaves of oak, so commemorating also the king's escape when he hid in the oak at *Boscobel*.

OAKENGATES. Urban dist. and market town of Shropshire. It is 13 m. from Shrewsbury, and is served by the L.M.S. and G.W. Rlys. It is a coal mining centre. Market day, Sat. Pop. 11,349.

OAKHAM. Market town and co. town of Rutland. It is 94 m. from London on the L.M.S. Rly. The church of All Saints has interesting carved capitals. The banqueting hall of the castle is used for the assizes. Of interest, too, are *Flore's House* (13th and 14th centuries) and the butter cross. The main industries are the manufacture of boots and shoes. Oakham is also a hunting centre. Market days, Mon. and Sat. Pop. 3,327.

Oakham school was founded in 1584 by Rev. Robert Johnson. It is now a public school with accommodation for about 250 boys.

OAKLAND. City of California, U.S.A. A residential city opposite San Francisco, on the E. shore of San Francisco Bay, it has shipbuilding yards, fruit canneries, flour and planing mills, carriage works, and

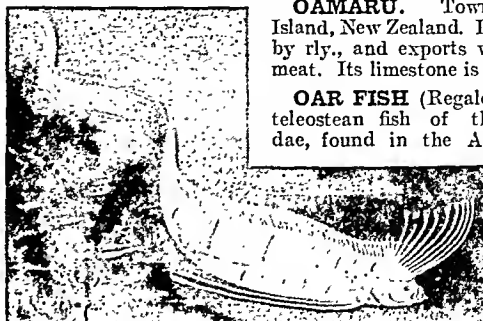
cotton, iron and steel, and leather manufactures. Pop. 253,700.

OAKS, THE. English horse race. It is run at Epsom on the Friday of Derby week, and the race is for fillies of three years old. The Oaks is the name of a house near Epsom. See Horse Racing.

OAKWORTH. Urban dist. of Yorkshire (W.R.). It is 3 m. S.W. of Keighley, on the L.M.S. Rly. The industries are the manufacture of cotton and worsted goods. Pop. 4,171.

OAMARU. Town and port of South Island, New Zealand. It is 78 m. N. of Dunedin by rly., and exports wool, grain, and frozen meat. Its limestone is useful. Pop. 5,499.

OAR FISH (*Regalecus glesne*). Deep-sea teleostean fish of the family *Trachyteridae*, found in the Atlantic, Mediterranean, and North Sea.



Oar Fish. Specimen of the deep-sea fish called by North Sea fishermen King of the Herrings

The compressed, elongated, and scaleless body may be as much as 20 ft. long, with a small mouth, and a dorsal fin that extends from behind the head to the imperfect tail. The first few rays of this fin

are very long, with dilated tips, forming a conspicuous crest. The name was suggested by the long, slender ventral fins expanded at their extremity.

OATES, LAWRENCE EDWARD GRACE (1880-1912). British explorer. He served in the South African War, 1901-2, where he was severely wounded, and in India and Egypt. He joined the Antarctic Expedition in 1910, and was one of those who accompanied Scott in his final dash for the South Pole. On returning the party was storm-bound, and on March 17, 1912, Oates, crippled by frostbite, went out alone into the blizzard to die rather than be a burden to his starving comrades. See Antarctic Exploration.



L. E. G. Oates, British explorer

That part of South Victoria Land, Antarctica, between King George V Land (q.v.) and Cape Adare, in lat. 70° S. and long. 16° E., is called *Oates Land* after Captain Oates.

OATES, TITUS (1649-1705). British conspirator. Born at Oakham, Rutland, in 1677, he joined the Roman Catholic Church, and went to the English Jesuit College at Valladolid, whence he was expelled. In June, 1678,

Oates was in London concocting details of a Roman Catholic plot. He revealed it to Sir Edmund Godfrey, who was found dead shortly afterwards. For a time Oates was a popular idol. Nearly three dozen people were executed through his machinations. In May, 1684, he was arrested for calling the duke of York a traitor, and after the duke's accession as James II was tried, and sentenced to a heavy fine, to whipping, and to imprisonment for life. He was released after William III came to the throne. He died July 12, 1705.

OATH. In law, an appeal to God to witness the truth of evidence given. In English courts a witness must, before he gives evidence, take an oath that what he is about to say shall be the truth, the whole truth, and nothing but the truth. If any witness does not believe in the oath, or if to take an oath is contrary to



Titus Oates, British conspirator after R. White

his religious belief, he is allowed to affirm, i.e. to make solemn promise that he will speak the truth, etc. The old form of Christian oath was when the swearer placed his right hand on the Holy Evangelists (i.e. the Four Gospels). By the Oaths Act, 1909, the English form is for the witness to take the book in his uplifted hand and repeat the words of the oath. See Affirmation; Perjury.

OATLANDS. Estate near Weybridge, Surrey, England. Here Henry VIII built a magnificent palace, surrounded by a hunting park. The estate came later to the earl of Lincoln, who, about 1720, built another house in the park. This was sold in 1794 to the duke of York, son of George III, who rebuilt the house. In 1857 it became an hotel.



Oats. Heads of Avena sterilis

OATS (*Avena sativa*). Cultivated cereal of the order Gramineae, probably derived from the wild oat (*A. fatua*), which is found throughout Europe, in Siberia, N.W. India, and N. Africa. Cultivated in Europe up to about 70°N., oats are sown usually in spring. The crop is cut before the grains are ripe. An average yield per acre is 40-60 bushels of grain and 30 cwt. of straw. The percentage both of fat and albuminoids is much higher for oats than for wheat. The total world output of oats, excluding Russia, in 1928 was 860 million bushels. See Crops.

Obadiah. Minor prophet. His book in the O.T. predicts the utter ruin of Edom and the coming of the Day of the Lord.

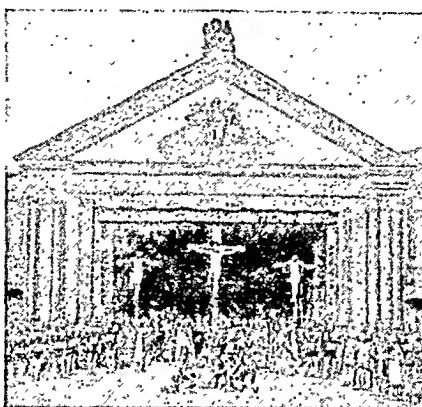
OBAN. Burgh, seaport, and watering place of Argyllshire, Scotland. It is 113 m. from Glasgow, on the L.M.S. and L.N.E. Rlys. It is a tourist centre, and has a splendid harbour, protected by the island of Kerrera. Near is the ruined castle of Dunstaffnage. Pop. 6,344.



Oban. Town and harbour from the south-west

OBELISK (Gr. spit for roasting). Tapering pillar-stone, especially in ancient Egypt. Usually a four-sided monolith of pink scynite, with a base width one-tenth of its height and a copper-sheathed pyramidal apex, it bore incised hieroglyphs upon each face. Obelisks stood in pairs before the temple portals, indicative of sun worship. One remains at Heliopolis (Jeremiah 43); others, once there, are now in New York and London. One of Hatshepsut's at Karnak still stands. The tallest extant, 105½ ft., is in Rome. See Cleopatra; Karnak.

OBERAMMERGAU. Village of Upper Bavaria. It is prettily situated in the valley of the Ammer, 45 m. S.S.W. of Munich, with which it is connected by an electric rly. The village is famous for the Passion Play (q.v.) which was held here periodically since the



Oberammergau, Bavaria. Stage and Crucifixion scene of the Passion Play

middle of the 17th century until 1910. Owing to the Great War it was not given again until 1922. The affairs of the village are controlled by a burghmaster and council elected by the householders. The inhabitants are mostly peasants and carvers in wood. On a knoll behind the village rises The Group of the Crucifixion, presented by Louis II in memory of his visit in 1871. Nearby is the Benedictine monastery of Ettal, founded in 1330, dissolved in 1803, and rebuilt after a fire in 1844. Situated on the old trade route between Venice and Augsburg, Oberammergau was once of considerable importance. Pop. 2,281.

OBBERON. King of the Fairies. As Auberon he appears in the Charnelagne romance of Huon of Bordeaux, and as the dwarf, Alberich, of the Nibelungenlied, long before he was re-created by Shakespeare in A Midsummer Night's Dream.

OBLATES (Lat. oblatum, offered, part. of offerre, to offer). Word used in various monastic senses. Originally oblates were children brought to the monastery by their parents and dedicated to the religious life. Later they were lay brothers; still later, associate members who observed a simple rule of life, and devoted themselves and their fortunes to the service of the community. In the Roman Catholic Church the title oblates has been assumed by congregations of priests devoted to preaching, conducting missions, and education.

Oboe. Italian name for the double reed musical instrument, the hautboy (q.v.).

OBOLUS. Ancient Greek silver coin alloyed with copper. It was equal to about 1½d. in English money, and six obols made a drachma (q.v.).

O'BREGON, ALVARO (1880-1928). Mexican president. Born in Sonora, he became a prosperous agriculturist with advanced ideas and marked sympathy with the Indians. In command of the constitutionalist army, he won several battles, and entered Mexico City, Aug. 15, 1914. He carried out successful campaigns against Villa in 1915, and took part in the negotiations with the U.S. government in 1916. Obregon was elected president in Sept., 1920, and he remained in office until 1924, when Calles became president for four years. Obregon was chosen to succeed him, but was murdered, July 17, 1928.



Alvaro Obregon, Mexican president

O'BRIEN, WILLIAM (1852-1928). Irish journalist and politician. Born Oct. 2, 1852, in 1880 he founded United Ireland, a paper of advanced Nationalist views. In 1883 he was elected M.P., and for the next 12 years was a

leading member of the Nationalist party. In 1903 he came forward as an advocate of conciliation and toleration and founded the All for Ireland League. From 1910 to 1918 he was M.P. for Cork City. He died Feb. 25, 1928.

O'BRIEN, WILLIAM SMITH (1803-64). Irish leader. Born Oct. 17, 1803, son of Sir Edward O'Brien, a landowner of co. Clare, he became M.P. for Ennis in 1828, and represented the county of Limerick 1835-48. In

1843 he joined O'Connell's association for the repeal of the Union. When the Habeas Corpus Act was suspended in Ireland in 1848, O'Brien led an armed rising. He was tried and sentenced to death, but the penalty was commuted to transportation to Tasmania. Released in 1854, he died June 18, 1864.



W. S. O'Brien, Irish leader

OBSERVATORY. Building constructed for the purpose of making astronomical, meteorological, or other kindred scientific observations. Astronomical observatories were founded in China in very early times, and one was built at Alexandria about 200 B.C.

The Lick Observatory is built in the pure, dry atmosphere of Mt. Hamilton, at an alt. of 4,250 ft. The Boyden Observatory is established at Arequipa, Peru, at an alt. of 8,060 ft. The Lowell Observatory was established in 1894 at Flagstaff, Arizona, at a height of 7,000 ft. The Carnegie Solar Observatory was built in 1905 on Mt. Wilson, California. The Royal Observatory at Greenwich was founded in 1675. The observatories at Edinburgh and Cape Town are also royal observatories. There are also astronomical observatories at Armagh, Cambridge, Ottawa, Oxford, Johannesburg, and elsewhere.

In Great Britain there are important meteorological observatories at Kew, Greenwich, Falmouth, Oxford, Stonyhurst, Glasgow, and Manchester. See Astronomy; Lick; Meteorology; Telescope.

OBSERVER. Official term in use in the Royal Air Force to denote any member of the crew of an aircraft whose duties are distinct from those of the pilot, and who is charged generally with making aerial observations. They receive a thorough training.

OBSIDIAN. Volcanic vitreous rock consisting of a combination of silica, aluminium, calcium, iron, potassium, and sodium. The mineral, which resembles dark glass, is extremely hard and brittle, and is usually black or dark grey, although occasionally brown or green. It is found in most volcanic regions.

OBSTETRICS (Lat. obstetrix, midwife). Branch of medicine dealing with the care of women during pregnancy, labour, and the puerperium. Of recent years a great advance has been made in obstetrics, particularly with regard to ante-natal supervision and treatment, with the result that many serious complications liable to arise in the later months have been eliminated. The use of chloroform and the practice of aseptic methods have robbed childbirth of most of its discomforts and many of its dangers. The British College of Obstetricians and Gynaecologists was founded in 1929.

O'CASEY, SEAN (b. 1890). Irish dramatist. Born in Dublin, he became a builder, wrote essays on labour questions, short stories, and political ballads, and then came into prominence as the writer of a play called The Shadow



William O'Brien, Irish journalist

of a Gunman. Of its successors Juno and the Paycock was awarded the Hawthornden prize in 1926. It was followed by The Plough and the Stars and The Silver Tassie.

OCEANOGRAPHY. Science which deals with the form of the ocean floor, the nature of the sediments covering it, and the composition, temperature, and movements of the contained waters.

The primary feature of the earth's relief is the existence of depressions, the ocean basins, and of elevations, the continental platforms. But the latter do not, in their entirety, form land areas, for their margins tend to be submerged, producing the so-called continental shelves. The width of the shelf varies in different parts of the world; broadly speaking however, 50 m. marks the limit of breadth.

In most cases the ocean floor over vast areas seems to be an almost regular plain, but in places, especially in the Pacific Ocean, there are depressions, known as deeps, which sink very notably below the general level. A deep is defined as an area in which the depth exceeds 3,000 fathoms. Elsewhere, especially in the Atlantic, great swells rise from the ocean floor, forming areas of relatively shallow water. Such elevations are called rises, and are defined as areas in which the depth is 2,000 fathoms or less.

Active volcanoes often occur on the ocean floors. Since volcanoes, whether on land or in the sea, are associated with earth movements, the present oceans must be regarded as areas of subsidence, due to the collapse of earth blocks, while the present continents are areas which have either been left standing when other parts collapsed, or have been directly uplifted. See Atlantic; Pacific, etc.

OCEANIA. Collective name for the groups of islands in the South Seas, or S. and central Pacific Ocean. Physically, Oceania includes five groups of islands. The most important is the Australian festoon which stretches from New Guinea to Macquarie Island and includes the Papuan Islands and New Caledonia. Fiji and Samoa are in another group, while a third forms a link between Japan and the E. Indies. The islands are also loosely grouped in relation to their inhabitants into Melanesia, Micronesia, and Polynesia (q.v.). Oceania is divided among Britain, France, Japan, Chile, and the U.S.A.

OCEANUS. In Greek mythology, the god of the ocean, the father of all things. The name was also given to the river supposed to encircle the whole earth, which was regarded as being flat.

OCELOT (*Felis pardus*). Species of wild cat occurring in tropical America. It has tawny fur, beautifully marked, and is usually nearly 3 ft. long. It spends its time in trees, and preys upon birds and small mammals. Ocelot is the Europeanised form of the Mexican name for jaguar. Pron. Ō-selo.

OCHIL HILLS.

Range of hills in Scotland, principally in Perthshire, but also occupying parts of the cos. of Clackmannan, Kinross, and Fife. They trend 25 m. N.E. from Bridge of Allan, in Stirlingshire, to the Firth of Tay, and enclose valleys and glens of great beauty. The highest summit is Ben Cleuch (2,363 ft.).

OCHRE. Mineral paint consisting chiefly of hydrated iron oxide. From red to yellow in colour, it is a clay, and the variation in colour depends largely on the proportion of iron oxide present. For commercial purposes the ochre is dried, ground, and mixed with oil. Calcination produces a deeper tone. Many ochres are now artificially prepared.

O'CONNELL, DANIEL (1775-1847). Irish leader, known as the Liberator. Born near Cahirciveen, co. Kerry, Aug. 6, 1775, he was called to the Irish bar in 1793. Starting in 1803 on his long struggle for Catholic emancipation, by 1808 he had become the virtual leader of the movement in Ireland. In 1823 he founded the Catholic Association.



Daniel O'Connell,
Irish leader
After T. Carriek

O'Connell's election as M.P. for co. Clare, 1828, and his refusal to take the oath, had their influence in the passage of the Catholic Relief Bill, 1829, and, re-elected unopposed, he took his seat in Feb., 1830. Before long he started his struggle for the

repeal of the legislative union, and came to a working arrangement with the Whigs in 1835. The Repeal Association was founded in 1840. The Nation newspaper in 1842, and in 1843 came O'Connell's famous monster meetings all over Ireland. A great gathering fixed for Clontarf was proclaimed, and O'Connell was arrested and tried for sedition. He was fined £2,000 and sentenced to one year's imprisonment, but the sentence was reversed by the House of Lords, 1844. O'Connell died in Genoa, May 15, 1847. See Catholic Emancipation; Ireland.

O'CONNOR, THOMAS POWER (1848-1929). Irish journalist and politician. Born at Athlone, Ireland, Oct. 5, 1848, he became a reporter on Saunders's Newsletter, Dublin, in 1867. He joined the staff of The Daily Telegraph in 1870, and founded and edited The Star, The Sun, The Weekly Sun, M.A.P., T.P.'s Weekly, and other journals. In 1880 he was elected Nationalist M.P. for Galway. He was returned for the Scotland div. of Liverpool in 1885, and represented that constituency until his death. President of the United Irish League of Great Britain from 1896, he became chairman of the censorship board of British film makers in 1917. He was made a privy councillor in 1924, and died Nov. 18, 1929. In 1928 he published his memoirs.



T. P. O'Connor,
Irish journalist
Russell

OCTAVIA (d. 11 B.C.). Sister of Octavian, afterwards the Roman emperor Augustus, and wife, first of C. Marcellus, by whom she was the mother of

Marcus Marcellus, and secondly of Antony, the triumvir. The desertion of Octavia by Antony for Cleopatra was an important factor in causing the war between Octavian and Antony. See Mark Antony.

OCTOPUS. Genus of cephalopod molluscs. There are many species, the common octopus (*O. vulgaris*) occurring round the S. British coasts. It has a rounded hag-like

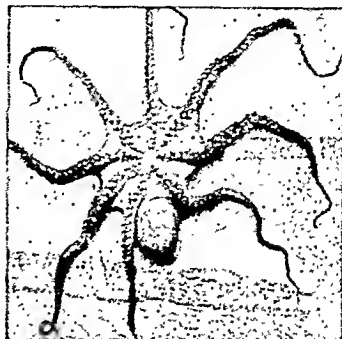
body, with a large head bearing eight long arms or tentacles thickly studded with suckers. By discharging sepia from its ink bag it can discolour the surrounding water. The month is provided with a horny beak resembling that of a parrot. The round eyes are prominent and staring. The octopus lurks in holes in the rocks and crawls on the sea bottom in search of crustaceans, its chief food. See Cuttle.

ODENATHUS. Prince of Palmyra. After the defeat of the army of the Roman emperor Valerian by the Persians, he organized a successful resistance, and in a series of campaigns from 262 to 264 restored Mesopotamia to Rome, and carried his arms as far as Ctesiphon. After his death by assassination, his widow, Zenobia, reigned as queen.

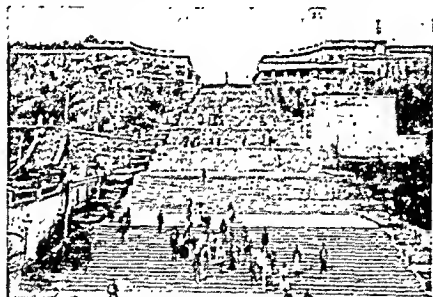
ODENSE (Odins-ø, i.e. Odin's Island). City of Denmark, capital of Fünen. Near the mouth of the river Odense, and connected

with Odense Fjord by a ship canal, it has a good harbour. The cathedral of S. Knud, founded 1086, is one of the finest Gothic buildings in Denmark; the church of Our Lady dates from the 13th century. Odense was the birthplace of Hans Andersen, whose house has been converted into a museum. Pop. 52,376. See Andersen, H. C.

ODER. River of Central Europe. It rises in Czechoslovakia, and flows to the Baltic Sea at the Stettiner Haff. It has been canalised to a depth of at least 5 ft. for 480 m. to Ratibor, although boats of 400 tons stop at Kosel, the river port for the mining region of Upper Silesia. The chief tributary is the Warta (Warthe), with its affluent the Netze. There are canal connexions to the Elbe and the Vistula. Its length is 550 m. The river is controlled by an international commission.



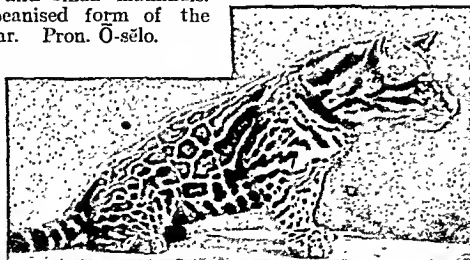
Octopus vulgaris, showing suckers on arms



Odessa, Russia. Richelieu stairs descending from the Nicholas Boulevard to the harbour

ODESSA. City and seaport of the republic of the Ukraine. It is 25 m. N. of the mouth of the Dneister, 90 m. S.W. of Kherson. Cut off from communication with the Allies when Turkey closed the Dardanelles, in 1914, Odessa was bombarded by the Turkish fleet on several occasions. It was occupied from the land side by the Germans on March 12, 1918, and was taken by the Bolsheviks in 1920. Soviet Russia made it an open port. Pop. 411,416. See Russia.

ODIN. In Norse mythology, the greatest of the gods. He is the Anglo-Saxon Woden and German Wotan. Contrasted with the rough peasants' god Thor, he was worshipped specially by the noble families, many of whom claimed descent from him, and was a patron of culture, inventor of runes, and god of wisdom, poetry, magic, and prophecy. As a war god Odin was lord of the Valkyries, and those who fell in battle, regarded as sacrificed to him, were received by him into Valhalla.

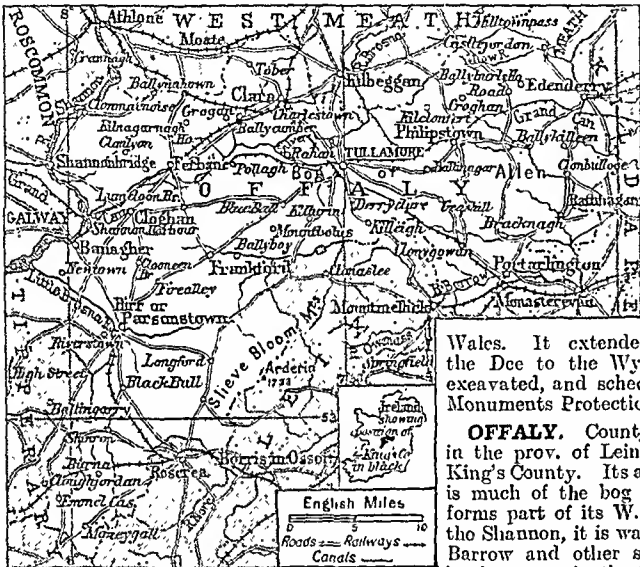


Ocelot. Specimen of the American species of wild cat
W. S. Berridge, F.Z.S.

ODOACER, ODOVAKAR OR OTTOGAR (c. 435-493). German soldier. He entered the Roman army and became one of the imperial bodyguard. He overthrew the emperor Romulus Augustulus, and became ruler of the West, nominally as a representative of Zeno, emperor of the East. Zeno, jealous of his success, persuaded Theodoric the Ostrogoth to attack him. Odoacer was besieged in Ravenna for three years, was forced to capitulate, and later was treacherously slain.

Odonata. Order of insects including the net-winged insects such as dragon flies. See Dragon Fly; Insect.

ODONTOGLOSSUM. Large genus of orchids of the order Orchidaceae, natives of tropical America. They have pseudo-bulbs and sword-shaped, more or less leathery leaves. The large, showy flowers are in handsome sprays. They are distinguished by the column being long and narrow, and by the base of the lip being parallel with the face of the column. See Orchid.



Offaly. Map of the inalaad county of the Irish Free State, in the province of Lelaster

ODYSSEUS. Greek form of the name of the hero called in Latin Ulixes and later Ulysses. In Greek legend, he was king of Ithaca, one of the leading heroes on the Greek side in the Trojan war, and the type of a resourceful and versatile leader. His wanderings after the fall of Troy are the theme of the *Odyssey*, an epic poem in 24 books, reputed to be by Homer. After relating his many surprising adventures, the poem ends with his return to Ithaca. Here he found that his wife Penelopé had been plagued by suitors. Disguised as a beggar, he made his way to the palace. Penelopé, apprised of his return, agreed to give her hand to the suitor who could bend the great bow of Odysseus. He alone succeeded, and then turned its arrows upon the suitors. He was unwittingly slain by Telegonus, his son by Circe. See Homer.

OEDIPUS (Gr. swollen foot). In Greek legend, son of Laius, king of Thebes, and Jocasta. An oracle having declared that Laius would perish at the hands of a son born of Jocasta, Oedipus, at birth, was exposed on the mountains with his feet pierced. There he was found by shepherds. Grown to manhood, Oedipus happened to meet Laius, and killed him without suspecting his identity.

Oedipus delivered Thebes from the Sphinx, and as reward received his own mother in marriage. A plague then ravaged the land, and an oracle having declared that this would

continue until the slayer of Laius was found, Oedipus set himself to discover the murderer, and learnt the truth from the prophet Tiresias. Jocasta hanged herself, and Oedipus put out his own eyes.

Oenone. In Greek legend, a nymph of Mt. Ida and wife of Paris, who deserted her for Helen. See Helen; Paris.

OERSTED, HANS CHRISTIAN (1777-1851). Danish physicist. Born at Rudkjöbing, Langland, and educated at Copenhagen, he won a travelling scholarship and visited Holland and Germany and Paris. In 1819 he made the discovery that a magnetic needle was deflected by a current in a wire passing below or over it, the initial discovery in electro-magnetism. He died March 9, 1851. See Electricity.

OFFA (d. 796). King of Mercia. A member of the royal

OFFSET. In printing, a method of transferring an image or design from the surface upon which it is impressed to a rubber sheet or cylinder, this becoming the printing surface, which in turn transfers the image to the paper. Decorations on tin boxes are produced in this way, and the tin-plate printing process was the pioneer of the modern use of offset printing, which is specially adaptable for rough papers. See Lithography.

OGAM OR OGHAM. System of writing employed in early Britain and Ireland. The alphabet comprised 21 characters, composed of straight incised lines or notches on one side of or across a stem line (see above). Perhaps invented

at the end of the Roman occupation, ogam-writing continued in use until the 10th century. Of the 300 examples known, about 30 are from E. Scotland, Orkney, Shetland, and Man, and an equal number from Wales, Devon, and Cornwall. The remainder were found in Ireland. The key to their decipherment was furnished by the 14th century MS. Book of Ballymote.

OGLETHORPE, JAMES EDWARD (1696-1785). English soldier and philanthropist. Born Dec. 21, 1696, he served under Prince



James E. Oglethorpe, English soldier

Eugene, and entered parliament in 1722. He did much to alleviate the sufferings of debtor prisoners, formed an association for the establishment in America of a colony of released debtors, and in 1733 founded Georgia, acting as governor there for 13 years. In 1745 he was sent against the Scottish rebels,

but was court-martialled on a charge of Jacobite sympathies, and though acquitted he resigned. He died July 1, 1785. See Georgia.

OGMORE. Dist. of Glamorganshire, part of the urban dist. of Ogmores and Garw. It is 9 m. from Bridgend, on the G.W. Rly., and is a coal-mining centre. Ogmores-by-the-Sea is 3 m. from Bridgend. Here are remains of a castle. Pop. urban dist., 32,120.

Oggu. Short name of a Soviet political department. Its work is to combat counter-revolution and espionage. See Cheka.

O'HIGGINS, AMBROSIO (c. 1720-1801). S. American administrator and soldier. Born in Ireland, he was despatched to S. America, and made his way across the Andes to Chile and then to Lima, where he kept a stall and trafficked in mules. Driven thence by the Inquisition, he returned to Santiago, where he obtained a government contract to build rest-houses on the mountain roads. In 1770 O'Higgins suppressed a rising of the Araucanian Indians, but he won their goodwill after peace was concluded. He was made intendent of Concepción in 1786, and two years later captain-governor of Chile. Promoted viceroy of Peru in 1796, he thus became the king of Spain's representative in S. America. He died Feb. 18, 1801.



Ambrosio O'Higgins, S. American administrator

His son, Bernardo O'Higgins (1778-1842), participated in the movement in Chile for independence. In 1813 he was made commander-in-chief, and in 1817 dictator of the country, in which capacity he formally declared its independence of Spain in 1818. He resigned in 1823, and died Oct. 24, 1842.



Jacques Offenbach, French composer

OFFALY. County of the Irish Free State, in the prov. of Leinster, formerly known as King's County. Its area is 773 sq. m. Herein is much of the bog of Allen. The Shannon forms part of its W. boundary. Apart from the Shannon, it is watered by the Brosna, the Barrow and other streams. The surface is level, except in the S., where are the Slieve Bloom Mts. The G.S. Rlys and the Grand Canal afford transport. Tullamore is the county town; other places are Birr (Parsonstown), Clara, Philipstown, Banagher, and Edenderry. In early times the county formed part of the kingdom of Offaly. Pop. 52,592.

OFFENBACH, JACQUES (1819-80). French composer. Of Jewish family, he was born at Cologne, June 21, 1819. His musical gifts led him to become a student in Paris, and after some preliminary experience he was made conductor at the Théâtre Français. Soon he began to compose, and in 1853 his *Pépito* was produced. His great successes were made in operettas of the type known as opera bouffe. In all he wrote over 70, the best known including *Madame Favart* and *Geneviève de Brabant*. Offenbach died Oct. 5, 1880.



Jacques Offenbach, French composer

OFFICIAL RECEIVER. Public official who manages the affairs of bankrupts, taking over their property, realizing the assets, and distributing the money to the creditors. England and Wales are divided into bankruptcy districts, each with a receiver appointed by the board of trade, while others are attached to the bankruptcy department of the high court of justice in London. See Bankruptcy.

OHIO. River of the U.S.A., a tributary of the Mississippi. It is formed by the union of the Monongahela and the Allegheny rivers at Pittsburg. It flows generally S.W. for 975 m., and joins the Mississippi at Cairo. The Ohio, except for a short distance at Louisville, where there is a canal, is navigable throughout its length.

OHIO. North-central state of the U.S.A. Its area is 41,040 sq. m. The Maumee, flowing into Lake Erie, is the chief northern river; the S. part of the state is watered by many affluents of the Ohio. The state produces maize, wheat, and oats, besides tobacco, hay, potatoes, fruit, etc.; stock-raising is a valuable interest. Coal, natural gas, petroleum, limestone, and other minerals are obtained. Columbus is the capital and Cleveland and Cincinnati the largest cities. The rly. mileage is 8,881. Pop. 6,826,000.

OHM. Unit of electrical resistance. The resistance of a circuit is 1 ohm when a pressure of 1 volt is required to cause a current-flow of 1 ampere. A megohm is equal to 1,000,000 ohms, and a microhm is one millionth of an ohm. An ohmmeter is an apparatus for measuring the electrical resistance of a conductor in ohms or megohms. See Mho.

OHM'S LAW. In electricity, a law first investigated by a German physicist, G. S. Ohm (1787-1854), who stated the law that in any given circuit the ratio of the electromotive force (E.M.F.) producing a current to the current produced depends on the resistance of the circuit. See Current; Electricity.

OICH, Loch. Lake of Inverness-shire, Scotland. It is 4 m. long and about ½ m. broad, and is the summit level (105 ft.) of the Caledonian Canal. The Glengarry flows into the loch, which is drained by the river Oich into Loch Ness at Fort Augustus. Trout and salmon are plentiful in its waters.

OIL. Oils may be divided into three groups: mineral oils (dealt with in the article on Petroleum) and those natural substances present in animal and vegetable organisms. Animal and vegetable oils form a homogeneous group, those which are solid above 68° F. being called fats, the remainder being liquid fats, or oils. They are neutral bodies with an unctuous feel and are tasteless and odourless.

These fatty or fixed oils differ from essential oils and volatile mineral oils in not being volatile without decomposition. They are essential for human food, are of great importance as medicines and unguents, and furnish raw materials for soaps, candles, burning oils, lubricants, paints, varnishes, leather-dressing, linoleum manufacture, and the like.

The extraction of oils is effected in three ways. Rendering, chiefly applied to animal fats, consists in heating the sodden material, with or without an acid, in open kettles or closed autoclaves. Pressure is chiefly applied to oil seeds and nuts, which are crushed and ground to meal. Cold-pressed or cold-drawn oils are pale, and furnish the salad and virgin oils of commerce. Hot pressing may follow, and the residual meal-cake makes cattle food. The highest possible oil yield is attained by employing hot or cold solvents. Further processes include filtering, refining, bleaching, and deodorising. See Petroleum.

OILCLOTH. Name given to a type of floor covering. It consists of coarse canvas coated on both sides with a thick oil paint. The quality of the oilcloth depends chiefly upon the number of separate coats of paint applied. See Linoleum.

OIL ENGINE. Type of internal combustion engine. The term is chiefly used for those engines which burn heavy oil. All heavy oil engines work on principles similar to those described under internal combustion engine, the chief difference being in the methods necessary to vaporise the oil before an explosive mixture can be formed in the cylinder. See Diesel Engine; Internal Combustion Engine; Locomotive.

OIL PALM (*Elais guineensis*). Tree of the order Palmae, native of W. Africa. It grows to a height of about 30 ft., and bears a crown of feather-like leaves, 15 ft. long. The male and female flowers are borne usually by separate trees. The bright red fruits form large oval heads. The oil is obtained by boiling the fruits in water and skimming the orange-red butter-like fat off the surface. The seed also yields oil. Palm oil is used as a lubricant and also in the making of margarine and soap.

OISE. River of France. Rising near Chimay, in the Ardennes, it enters France, and after flowing past Guise receives the Serre and the Ailette. Near Compiègne the Aisne flows into it. It falls into the Seine, 40 m. below Paris, after a course of 186 m. For about 60 m. the river is canalised and linked up by canals with the waterways of Belgium and N. France. It figured prominently in the Great War.

OKAPI (*Oeapia johnstoni*). Ruminant mammal related to the giraffe. It is about as large as a mule, and the general colour is blackish brown, with yellow legs striped horizontally with black. The neck is long in proportion to the body, and the head is giraffe-like, with large, up-standing ears. The okapi lives in the densest parts of the Central African forests.

OKAYAMA. Town of Japan, in Honshu. Situated 240 m. by rly. from Shimonoseki, it stands on a wide alluvial plain in the lower course of the Asahi river, 7 m. from its mouth. Branch rlys. run to Uno, Tatoi, and Tsuyama, the Uno line connecting with Shikoku. The park, one of the most beautiful in the country, extends over 22 acres. Cotton and silk yarns, cotton goods, and rice are the chief products. Pop. 124,521.

OKEHAMPTON. Borough and market town of Devonshire. On the N.W. edge of Dartmoor, where the rivers East and West Okement meet, it is 26 m. from Exeter by the Southern Rly. There are the remains of a 15th-century castle. Outside the town are artillery ranges. Market day, Sat. Pop. 3,456.

OKLAHOMA. State of U.S.A. It lies between Texas and Kansas, E. of Arkansas. Part of the basin of the Mississippi, it is a rolling plain. Much of the state is arid, and the rivers, of which the chief are the Arkansas, Cimarron, Canadian, and Red, are frequently dry during hot summers.

Maize, wheat, oats, cotton, and potatoes are the principal crops; horses, cattle, and sheep are reared; petroleum, coal, natural gas, lead, and zinc are the chief minerals. Part of their territory was ceded by the Indians to the U.S.A. in 1866. Oklahoma Territory was created as an administrative unit in 1890, and with Indian Territory became

a state in 1907. The area of Oklahoma is 70,057 sq. m. Pop. 2,426,000.

OKLAHOMA, City of Oklahoma, U.S.A., the state capital. It stands on the North Fork of the Canadian river, 31 m. S.S.W. of Guthrie, and is served by the Missouri, Kansas, and Texas, and other rlys. A trade in cattle, fruit, cereals, cotton, and oil is carried on, and there are some manufactures. Pop. 91,295.

OLAF. Name of five kings of Norway. The most famous was Olaf II, who became king in 1015 after spending some time in England. He became a Christian, and his desire to make his people Christians led to trouble. A league formed against him was joined by the king of Denmark, and in 1028 Olaf fled to Russia. On July 29, 1030, he was killed in battle. In 1164 he was canonised, and he is regarded as the patron saint of Norway. Olaf is the name of the crown prince of Norway, the only son of King Haakon VII. Born July 2, 1903, he was married in March, 1929, to Marthe, princess of Sweden. A daughter was born to them in 1930.



Oil Palm. Crown of feather-like foliage. Inset, part of fruit head.

OLD AGE PENSIONS. Grant made to aged persons by the state. In Britain, the first act authorising the scheme was passed in 1908, and since then others have been passed, notably those of 1924, which dealt with sources of income, and of 1925, giving pensions to widows and orphans, and also to insured persons over 65. Old age pensions are paid to all persons at the age of 70 subject to income qualifications, to certain persons and their wives at the age of 65 as insured workers, and to blind persons at the age of 50.

To qualify for a pension the recipient must be a British subject of at least 10 years' standing. If a natural-born British subject, he or she must have been a resident in the U.K. for 12 years since attaining the age of 50. If not natural born he or she must have been resident for 20 years in the aggregate. To qualify for the maximum pension of 10s. a week, the applicant's means from all sources must not exceed £26 5s. a year. A married couple living together who are qualified can receive 10s. a week each. As the means increase in scale the pension diminishes. To obtain a pension the applicant should apply at a post office for a form of application. The applicant's claim and the amount payable rest with the local Pensions Committee.

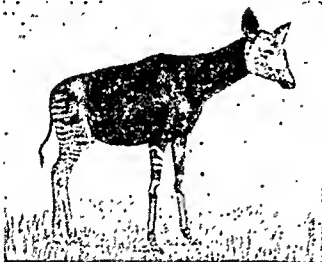
In 1930 the scales of pensions in relation to income were:

Pension	Income
10s. per week.	does not exceed £26 5s.
8s. "	is between £26 5s. and £31 10s.
6s. "	" £31 10s. and £36 15s.
4s. "	" £36 15s. and £42
2s. "	" £42 and £47 5s.
1s. "	" £47 5s. and £49 17s. 6d.

On Mar. 31, 1928, there were in England, Wales, and Scotland 995,978 pensioners, of whom 328,077 were men and 667,901 women. Since 1922 the Irish Free State has been responsible for its own pensions.

Pensions are also paid in Australia and New Zealand, and Germany, France, and Denmark have each a pension system. See Health Insurance; Pensions; Unemployment; Widow.

OLD BAILEY. London thoroughfare. It runs S. from Newgate Street to Ludgate Hill, E.C. At its N.E. corner is the Central Criminal Court (q.v.) on land occupied by old Newgate prison, opposite which were set up the pillory, whipping post, and gallows. There was a prison here in the 12th century.



Okapi. Specimen of the Central African ruminant

OLDBURY. Urban dist. and market town of Worcestershire. It is 5 m. from Birmingham, with a station on the L.M.S. Rly., and is on the Birmingham canal. Standing on the coalfield of the Black Country, its industries include steel works iron foundries, and the manufacture of nails, tools, chemicals, etc. Market day, Tues. Pop. 36,902.

OLDCASTLE, SIR JOHN (d. 1417). English Lollard, known also as Lord Cobham. In 1409 he married Lady Cobham, of Cooling, Rochester, and was summoned to Parliament as a baron. He was high in the favour of Henry, prince of Wales, afterwards Henry V, but in 1413 was charged and arrested for heresy, tried, and sentenced to death. Escaping from the Tower, he was engaged in a Lollard conspiracy which nearly brought about a rebellion. Captured, he was taken to London, and hanged Dec. 14, 1417.

OLD CATHOLICS. Roman Catholic congregations, separated from the Church of Rome mainly on the question of papal infallibility. The movement originated in a conference at Munich in 1863 under the presidency of Dr. Döllinger. In 1873 Dr. Reinkens was consecrated the first bishop of Deventer, according to the Roman rite. They are chiefly found in Germany and the Netherlands. See Jansenism; Papacy.

OLDENBURG. Free state of Germany. It consists of three portions, Oldenburg, Birkenfeld, and Lüneburg, and its total area is 2,480 sq. m. Oldenburg is the capital; other places are Varel and Delmenhorst. Birkenfeld and Eutin are the capitals of the two smaller parts of the republic. The republic is governed by a landtag of 48 members, elected for three years. Pop. 545,172.

In 1871 Oldenburg joined the new German empire, and in Nov., 1918, the grand duke abdicated and the state became one of the German republics. See Birkenfeld.

OLDFIELD, ANNE OR NANCE (1683-1730). English actress. Introduced to the stage by Farquhar and Vanbrugh, she first attracted attention at Drury Lane by her creation of two comedy rôles, Lady Betty Modish in Colley Cibber's *Careless Husband*, and Biddy Tipkin in Steele's *Tender Husband*. She played original parts in Addison's *Cato*. She died Oct. 23, 1730.



Anne Oldfield,
English actress

OLDHAM. County borough of Lancashire. It stands on the Mersey, 6 m. from Manchester, with stations on the L.M.S. and N.E. Rlys. It is also served by a canal. The buildings include the parish church, town hall, art gallery and museum. Among the schools is the Hulme Grammar School. Alexandra Park is a recreation ground. The town is a centre of the cotton manufacture, specially the spinning branch. Machinery, cloths, silks, satens, and other textiles are made. Around are coal mines. The Oldham Vales are a feature. Market days, Mon. and at. Pop. 144,983.

OLDHILL. District of Staffordshire. It is 3 m. from Dudley, on the G.W. and L.M.S. Rlys. It stands on a coalfield and is in the Birmingham area. The chief industry is the manufacture of hardware.

OLD RED SANDSTONE. Series of Palaeozoic rocks lying below the carboniferous strata. They are named from their commonest constituent, red sandstone, but the series also contains grey, yellow, and green sandstones, and limestones and clay beds. The rocks of the group are of immense thickness, and are called Old to distinguish them from similar deposits of a later geological

period. The series is found in Scotland, Wales, Ireland, Russia, Scandinavia, and N. America. See Devonian; Geology; Triassic.

OLD TESTAMENT. Name given to the collection of books which form the first part of the Bible and give an account of the history and religion of the Jewish people.

There are three well-defined stages in the growth of the O.T. (1) The earliest canon, which was formed about 440 B.C., contained the Pentateuch, or rather the Hexateuch—for the book of Joshua was included. It contains the Law of God, on which the whole national life was centred. (2) About 200 years later the first edition of the O.T. was expanded by the addition of the prophetic writings, among which were included the historical books known as Samuel and Kings. (3) During the last two centuries B.C. various other additions were made, known as "the writings," including Job, The Psalter, the Minor Prophets, Proverbs, Ecclesiastes, Chronicles, etc. The process of enlarging the canon was continued in Alexandria, where a fourth addition was made, consisting of the books now in the Apocrypha (q.v.). This addition is recognized as canonical by Roman Catholics, but not by Protestants. See Bible; Hexateuch; and the articles on the books and characters.



Oleander. Flower
and leaf of the
evergreen shrub

OLEASTER (Elaeagnus). Genus of shrubs of the order Elaeagnaceae, natives of Europe, Asia, and N. America. The shrubs range in height from 5 to 20 ft., and thrive in any ordinary soil, especially in S. or W. positions. The flowers are yellow, white, and occasionally green in colour.

OLEIN or **TRIOLEIN.** Name given to the glyceride of oleic acid, and to any liquid oil obtained from fats by pressure. Olein is a colourless oily liquid, and can be prepared by heating glycerin with oleic acid. It is made on a large scale for the manufacture of margarine.

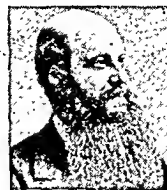
OLIBANUM TREE (*Boswellia serrata*). Small evergreen tree of the order Burseraceae, native of the East Indies. Its leaves are divided into two rows of oval-oblong leaflets with saw-toothed edges. The small white flowers are borne in sprays. From the bark exudes a resinous gum, olibanum, said to be the frankincense of the ancients. Olibanum is astringent and stimulant, but is chiefly employed as incense.



Olibanum Tree. Foliage
and fruit of the East Indian tree

OLIGOCENE SYSTEM. Subdivision of the Tertiary period of time, the epoch which followed the Eocene and preceded the Miocene. Oligocene rocks are found in wide areas in Central and S. Europe, and in the Isle of Wight and Hampshire. See Eocene; Miocene.

OLIPHANT, LAURENCE (1829-88). British author. He was born at Cape Town, a son of the attorney general of Cape Colony. In 1853



Laurence Oliphant,
British author

he became private secretary to the earl of Elgin, governor-general of Canada, and took part in the negotiations leading up to the reciprocity treaty with the United States. In 1867 he fell under the influence of Thomas Lake Harris, and for a short time joined his religious community at Brocton, N.Y. Oliphant afterwards acted as correspondent for *The Times* in the Franco-Prussian War, and interested himself in a scheme for settling the Jews in Palestine. He died Dec. 23, 1888.

OLIPHANT, MARGARET OLIPHANT (1828-97). British author. Born April 4, 1828, she made her reputation with her first book, *Passages in the Life of Mrs. Margaret Maitland*, 1849, and thereafter produced more than a hundred books, remarkable for their high level of merit and unflagging freshness. Among her best-known novels are *Calch Field*, 1851; *Lilliesleaf*, 1855; *Zaidee*, 1856; *Salem Chapel*, 1863; *The Rector and the Doctor's Family*, 1863; *The Minister's Wife*, 1869; *The Wizard's Son*, 1884; and *Kirsteen*, 1890. She also wrote historical works and popular biographies of Edward Irving, 1862, and S. Francis of Assisi, 1871. Mrs. Oliphant died at Windsor, June 25, 1897.



M. O. Oliphant,
British author

OLIVE (*Olea europaea*). Small evergreen tree of the order Oleaceae, native of the Mediterranean region. It attains a height of



Olive, a South European tree;
spray of foliage

about 20 ft., has almost four-sided spiny branches and opposite oblong leaves. The small, white, funnel-shaped, fragrant flowers are produced in panicles, and the fruit is a small plum. This is the wild form. Pickled olives and olive

oil are the produce of the cultivated variety, *sativa*. It differs from the wild form in the branches being less square, without spines, the leaves more lance-shaped, and the fruit larger and more fleshy. Much of the "olive oil" of commerce is adulterated with other vegetable oils.

OLIVES, MOUNT OF, OR OLIVET. Mt. about 2,700 ft. high, E. of Jerusalem, from which it is separated by the valley of the Kidron. Its chief associations are with the life of Christ. On the brow of the mountain He wept over Jerusalem; and from its summit He ascended into heaven. See Bethany.

The Olivetans are a branch of the Benedictine Order, known as the Congregation of Our Lady of Mount Olivet. It was founded in 1313 at Siena by Giovanni de' Tolomei, who became their first abbot-general in 1319.

OLIVINE. In mineralogy (q.v.), a ferrous and magnesian orthosilicate. So called from its usual olive-green colour, the mineral is a common constituent of igneous rocks, especially basalts, and is often found in meteoric stones. Cut and polished, it is used as a gem stone under the names of chrysolite and peridot. Olivine easily weathers into serpentine.

OLLERTON. Parish of Nottinghamshire. It stands on the river Maun, 9 m. N.E. of Mansfield, and has a station on the L.N.E.R. It is a centre for visitors to Sherwood Forest and the Dukeries (q.v.). Pop. 676.

OLNEY. Market town of Buckinghamshire. It stands on the Ouse, 11 m. from Bedford and 59 m. from London on the L.M.S. Rly. Its large and beautiful church of S. Peter and S. Paul is a fine example of the Decorated style. Olney is known for its associations with William Cowper and John Newton. Cowper's house in the market place is now a museum housing relics of both men. Olney was once a centre of the lace industry. Market day, Thurs. Pop. 2,651.

OLSSON, JULIUS (b. 1864). British artist. Born in London, he specialised as a marine painter. His pictures of the Cornish coast and the open sea are marked by skilful blending of colours in reproducing the play of light on water. Elected A.R.A., 1914, he became R.A. in 1920, and president of the Royal Institute of Oil Painters and medallist of the Paris Salon.

OLYMPIA. Small plain in the Peloponnese, Greece, in ancient times the scene of the Olympic Games (q.v.).

A London place of entertainment is also called Olympia. Situated near Addison Road station, in the bor. of Hammersmith, it was opened in 1886 for agricultural shows, but has been chiefly used for spectacular shows, horse shows, military tournaments, industrial exhibitions, etc. In 1930 the building was much enlarged and improved.

OLYMPIC. White Star liner. Launched at Belfast in 1911, she displaced 46,359 tons, and during the Great War was employed as a troopship. In 1914 she rescued the crew of the Audacious. Attacked by submarines, she escaped, and herself rammed at least one German U-boat. In 1920 the vessel resumed her normal cross-Atlantic passenger service, having meantime been adapted to burn oil.

OLYMPIC GAMES. In ancient Greece a great athletic festival held at Olympia; also a modern international athletic festival. The ancient festival, which was in honour of Zeus, lasted five days, and took place every four years; a period of four years was called an Olympiad. There was a record of victors from 776 B.C., but the games were regularly held long before that date. They were abolished in A.D. 394. The centre of the festival was the precinct consecrated to Zeus and known as the altis, an enclosure 750 ft. by 550 ft. Outside stood the palaestra or wrestling ground, the stadium or racing track, the hippodrome where the chariot racing took place, and the gymnasium.

The Olympic Games were revived in 1896, the first meeting being held at Athens in that year. In 1900, 1904, 1908, 1912, 1920, 1924 there were meetings in Paris, St. Louis, London, Stockholm, Antwerp, and Paris respectively. In 1928 the Games were held in Amsterdam, and it has been decided to hold the 1932 meeting in the U.S.A. See Marathon Race.

OLYMPUS. Name of several mts., or mt. ranges, in ancient Greece. The best known formed the boundary between Macedonia and Thessaly, the highest peak of which reaches an alt. of 9,794 ft. On its snow-capped summit the ancient Greeks placed the home of the gods, whence Olympus came to be used as a synonym for heaven, and later for the sky. Other mts. of the same name were in Asia Minor and Cyprus.

OMAGH. County town of Tyrone, Northern Ireland. It stands on the Strule, 34 m. from Londonderry on the G.N. of I. Rly. and has remains of a castle. Pop. 4,836.

OMAHA. City of Nebraska, U.S.A. It stands on the Missouri river, about 500 m. N.W. of St. Louis, and is served by the Chicago, Milwaukee and St. Paul and other rlys. The river is here spanned by bridges communicating with Council Bluffs. The Union Pacific Rly. has extensive workshops, and here, also, is one of the best equipped plants in the world for the smelting of gold, silver, copper, lead, and zinc. Before 1867 Omaha was the state capital. South Omaha was incorporated with it in 1915. Pop. 211,768.

The Omaha Indians lived in what is now the state of Nebraska. The remnants of the tribe live on a reservation in Nebraska. The name means people of the upper stream.

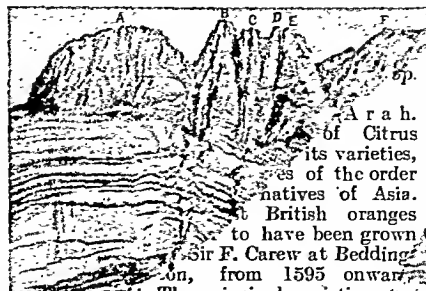


Omnibus. Side view of type of omnibus with inside staircase, introduced in 1930
Courtesy of London General Omnibus Co.

OMAN. State of Arabia. It stretches for about 1,000 m. along the Gulf of Oman, a N.W. extension of the Arabian Sea, and is bounded on the land side by the desert. Its area is about 82,000 sq. m. Muscat is the capital. About 1741 an Arab chief seized Muscat, and his descendants have since kept their authority. The government of India has a resident at Muscat (est. pop. 20,000). Pop. about 500,000, chiefly Arabs, but some negroes.

OMAR KHAYYAM, HAKIM (c. 1071-1123). Persian poet, astronomer, and mathematician. Born at Nishapur, Khorassan, Omar helped to revise the Persian calendar, compiled astronomical tables, and wrote on mathematics. In Europe he was chiefly known as author of a work on algebra until attention was drawn to his value as a poet by the rendering into English, by Edward Fitzgerald (q.v.), of part of his Rubáiyát or quatrains. In this the Rubáiyát is frankly an expression of hedonism touched with a certain melancholy that attunes with western as well as eastern pessimism.

The Omar Khayyám Club was founded out of enthusiasm for Edward Fitzgerald's translation of the Rubáiyát in 1892, when three friends, Frederic Hudson, George Whale, and Clement King Shorter brought it into existence at Pagani's Restaurant, London. Among the first members were Edward Clodd, Justin Huntly McCarthy, Sir Henry Norman, Sir William Watson, and Arthur Haeker, who designed the first menu card.



Olympus. History of Throne, war, and Deception

The principal varieties grown are the sweet Michael's, the bitter the Jaffa, the Maltes

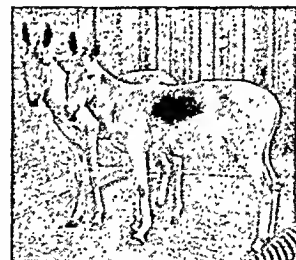
OMDURMAN. City of the Anglo-Egyptian Sudan. It is on the left bank of the Nile, facing Khartoum, and stretches for 7 m. along the river. During the regime of the Mahdi (q.v.) it became the capital of his empire. The ruins of his tomb are in the centre of the city. Pop. 102,648.

The battle of Omdurman was fought between the British and Egyptians and the forces of the Khalifa, Sept. 2, 1898. The battle began with a dervish attack, easily repulsed. The British marched forward to seize Omdurman before the enemy could return to it, and after some sharp engagements entered the city. The British and Egyptians lost about 500. See Athara; Egypt; Kitchener; consult also The River War, 2 vols., W. L. S. Churchill, 1899.

OMNIBUS (Lat. for all). Four-wheeled public conveyance. They are licensed to carry passengers for hire at stated times over a regular route, and to take up or set them down as required. The word is in popular speech shortened to 'bus. Vehicles, carrying 22 inside passengers and drawn by three horses abreast, were introduced into London on July 4, 1829, by a coach proprietor named Shillibeer. Later, two-horsed types gave accommodation for outside passengers, the roof being reached by a ladder from the conductor's step. A narrow seat, called the knife-board, ran lengthwise along the centre of the roof, and the passengers sat back to back. Development of the 'bus came with the advent of the internal combustion motor, and though steam omnibuses had some success, they were abandoned for petrol-driven vehicles.

OMPHALÉ. In Greek legend, wife of Tmolus, a Lydian king, whose kingdom she ruled after his death. When Hercules was condemned to a period of slavery as a punishment for the murder of Iphitus, Omphalé bought him, and they became deeply enamoured of each other.

OMSK. Town of the Siberian area of Soviet Asia. It is 265 m. N.E. of Akmolinsk, at the junction of the Om and Irtysh, and on the Trans-Siberian rly. Pop. 161,475.



Onager. Specimens of the race of wild ass. Gambler Bole, Asiatic and Occanee. Interior. F.Z.S. a black stripe down the centre of the shoulder showing the

ORANGE. The down the centre of the t situated 3,000 ft. above sea level. It is a W. of Sydney and legs. See Ass. area, yield **ONEGA.** River of Russia. Rising in town has Lacha, it flows N.E. and then N.W. in the Gulf of Onega. In length about 245 miles. It runs parallel with Lake Onega, about to the E. There are also a town and this name. The town is at the mouth of the river, and the bay is an arm of the V

ONEHUNGA. Town and port Island, New Zealand. On Manukau it is the W. outlet for Auckland, 7 Woollen mills, shipping, and the timber and farm produce are it industries. Pop. 6,000.

ONEIDA. City of New York Oneida Creek, 26 m. W. of iron w

wagon, furniture, and cigar factories, and flour mills. Pop. 10,541.

Lake Oneida, about 12 m. N. of Syracuse, is 24 m. long and 5 m. broad. The Oneida river drains it to the Oswego river.

The Oneida Community was a communistic society originally founded in Vermont, U.S.A., by John Humphrey Noyes, and re-started at Oneida in 1847. It has a religious basis. Noyes advanced N.T. authority for the doctrine that selflessness could be attained by holding all things in common. In 1879 the community was dissolved, but in 1881 it was revived.

O'NEILL, EUGENE GLADSTONE (b. 1888). American playwright. Born in New York, Oct. 16, 1888, he engaged in business in the U.S.A. and S. America, and spent two years at sea, an experience which provided much material for his dramatic work. He became known as a dramatist by his play *Thirst*, 1914. His other works include *In the Zone*, 1918; *The Moon of the Caribbees*, 1919; *Beyond the Horizon*, 1919; *The Emperor Jones*, 1920; *Anna Christie*, 1923; *The Great God Brown*, 1927. *Strange Interlude*, 1928; and *Lazarus Laughed*, 1929.

ONESIMUS. Christian convert. He was a slave who ran away from Philemon at Colossae and made his way to Rome. There he met S. Paul, who converted him to Christianity and sent him back with a letter, the Epistle to Philemon, and also mentioned him when writing to the church at Colossae.

ONE-STEP. American dance, popular also in England, where it was introduced about 1910, and in France. It is virtually a running walk, performed to rag-time music.

ONGAR. Market town of Essex. In full Chipping Ongar, it is on the Roding, 23 m. from London, with a station on the L.N.E. Ry. There are a few traces of an old castle. Market day, Sat. Pop. 1,142.

ONION (*Allium*). Hardy bulbous plant of the order Liliaceae. The plants are perennial, though onions and leeks for edible purposes are raised annually from seed. Native of Asia, *A. cepa* is the parent species of the garden onion, and has been cultivated for ages. Of the onions grown outside the British Isles, the Tripoli, Madeira, and Brittany varieties are the most popular in Britain. They are more delicate in flavour and less coarse of texture than the latter common Spanish onion.



Onion. Two common varieties.
1. Long-keeping 2. White Spanish
By courtesy of Sutton & Sons

It stands on the eastern bank of the Great Manchester, with a view of the city. Its length is 193 m. L.N.E. Ry. It is the broadest part, area 7,260 The buildings include a town hall, art gallery and average the schools is the Hulme G. S. feeders are the Alexandra Park is a recreation ground. The town is a centre of the cotton and textile industry, especially the spinning branch. Made by the velvets, silks, satens, and other textiles State made. Around are coal mines. The Oldham. Wakes are a feature. Market days, Mon. and Sat. Pop. 144,983.

OLDHILL. District of Staffordshire. It is 3 m. from Dudley, on the G.W. and L.M.S. Ry. It stands on a coalfield and is in the Birmingham area. The chief industry is the manufacture of hardware.

OLD RED SANDSTONE. Series of Palaeozoic rocks lying below the carboniferous strata. They are named from their commonest constituent, red sandstone, but the series also contains grey, yellow, and green sandstones, and limestones and clay beds. The rocks of the group are of immense thickness, and are called Old to distinguish them from similar deposits of a later geological

minerals are silver, nickel, copper, gold petroleum, natural gas, and iron. There are extensive fisheries, and much lumber is cut. Niagara and other falls provide the industries with an abundant supply of electric power. From 1791 to 1867 Ontario was called Upper Canada. Pop. 3,229,000. See Canada.

ONYX. General term applied to a band of agates characterised by well-defined alternate rings of pure milk-white with bands of other colours. If the tint of the secondary rings is flesh colour, the agate is known as chalcedony; if red, carnelian-onyx; if green, sardonyx. All these are utilised for intaglios and cameos in jewelry. Onyx opal is a natural stone built up of alternate layers of precious and common opal. Onyx marble, from Mexico, and onyx alabaster, from Egypt, are handsome forms of stalactite marble.

OOOLITE. Name given to the upper and middle division of the Jurassic rocks. The oolite deposits are chiefly limestones formed by marine fossil remains. Great oolite rocks found in Wiltshire, Somersetshire, Gloucestershire, etc., provide the well-known building stones, Bath stone, Stonesfield slate, etc. Inferior Oolite rocks are named from their occurrence in strata lying beneath the Great Oolite. Pron. o-o-lite.

OOTACAMUND. Hill station of Madras Presidency, India. It lies over 7,000 ft. in alt., among the open, rolling downs of the Nilgiri Hills. Here the Madras Government has its seat during the hot season. Pop. 20,000.

OPAL. Hydrous dioxide of silicon. It is amorphous or non-crystalline, and varies in colour from dark to pale yellow, red, blue, or green, the lighter colours being more common. The precious opal in ancient times was considered to bring its wearer good fortune. It is a semi-transparent, semi-translucent stone, bluish or yellowish white in colour as a rule, and showing a wonderful play of colours as the light strikes it at various angles. Precious opal is found in Czechoslovakia, S. America, New South Wales, the U.S.A., etc. The fire opal, a beautiful red stone with yellow, or yellow and green reflections, is found in Mexico; as is the girasol, a bluish white opal with red reflections. The common opal, which is not opalescent, occurs in a variety of colours.

OPERA (Ital. shortened from *opera in musica*, a musical work). Work for the stage compounded of music and drama. The dialogue is mostly in verse and sung to orchestral accompaniment; lyrics are an important element, and a ballet is often included. The rise of opera began about 1582, but it was not until the first public opera-house was opened at Venice, in 1637, that it became a popular form of entertainment.

The real founder of Italian opera was Alessandro Scarlatti (1659-1725), who not only established the aria as a legitimate form of expressing soliloquy, but also adopted two distinct kinds of recitative: (1) *Recitativo Flesco*, in which the voice was supported by exuberant chords filled in at the harpsichord from gum, oil, and (2) *Recitativo stromento*, said to be a neutral accompaniment of which was frankincense as that of the aria. This last the anciently developed until it is now Olibanum is modern opera. Early opera astringent and to the Italian Lull.

OLIGOCENE SYSTEM. Name used in all 42 works the Tertiary period of time, to call operas. The followed the Eocene and preceded the Miocene, however, Oligocene rocks are found in wide areas, and it Central and S. Europe, and in the Isle of Wight and Hampshire. See Eocene; Miocene.

The Carl Rosa Opera Company (q.v.) greatly helped to form English taste in opera, and Sir Thomas Beecham (q.v.) produced grand opera in London and elsewhere, founding an Imperial League of Opera in 1928. See Covent Garden.



Ophicleide, with keys to help fingering

OPHICLEIDE (Gr. *ophis*, serpent; *kleis*, key). Brass wind instrument. It was the successor of the serpent, the bass member of the cornetti group. All these instruments had a cup-shaped mouthpiece and lateral finger holes at distances to fit the stretch of the hand. The ophicleide has been succeeded in the orchestra and military band by the bass tuba or bombardon.

OPHIR. Land famed in O.T. times for its gold, which was brought to Palestine by the ships of Solomon and Hiram, king of Tyre. Its locality is uncertain, but S.E. Arabia is the most likely region.

OPHTHALMOSCOPE. Instrument invented by Helmholtz, and later extensively modified. It consists of a small mirror with a circular hole in its centre and a rotating wheel in which various types of lenses are fixed. The eye is illuminated and observed through the hole and one of the lenses.

OPIE, JOHN (1761-1807). British painter. A native of St. Agnes, near Truro, he obtained the patronage of Dr. Wolcott, known as Peter Pindar, accompanied him to London in 1780, and at once achieved celebrity. He became A.R.A. in 1787, R.A. in 1788, and professor of painting in 1805. He died April 9, 1807. His genius lay in historical paintings, in which, though his technique was always deficient, he showed extraordinary freshness and vigour. See Girtin, T.; Godwin, M.



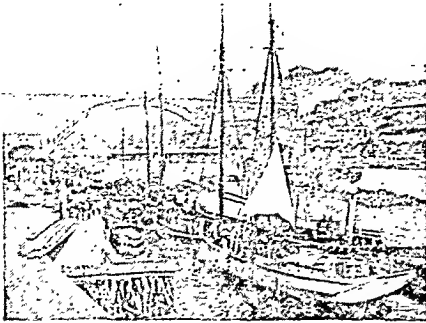
John Opie, British painter

OPIUM (Gr. *opos*, juice). Juice obtained by cutting into the unripe capsules of the white poppy (*Papaver somniferum*). This is solidified by evaporation, and comes into the market in the form of dark brown or black irregular masses. Crude opium contains a number of alkaloids, of which morphine, which may be present to the extent of 12 p.c., is the most important. Opium acts as an anodyne and narcotic almost entirely in virtue of the morphine it contains. It is used medicinally in various forms to relieve pain and in the treatment of insomnia.

The best antidote in poisoning by opium is permanganate of potassium, enough dissolved in half a glass of water to make a deep red solution. After this, hot strong coffee should be given freely, and the patient must at all costs be kept awake.

In 1925 an international convention was signed at Geneva providing for the establishment of a board of control to suppress the illicit traffic in drugs derived from opium and other substances. This came into force in 1928, when, according to agreement, it had been ratified by ten countries.

OPORTO (Lat. *Portus Cale*; Port. *O* porto, i.e. the port). City of Portugal. It stands on the N. bank of the Douro, 3½ m. from the Atlantic and 209 m. by rly. N. of Lisbon. A striking feature is its two fine bridges; one carries the rly.; the other has two roadways, and its arch, one of the largest in Europe, spans 560 ft. The cathedral was built on the site of a Visigothic citadel dating from the 12th century. Other buildings include the episcopal palace, many old churches,



Oporto Portugal. Ribeira quay and the iron bridge of Dom Luiz I

and the university. The Torre dos Clerigos or Tower of the Clergy, is 246 ft. high.

Oporto is the centre of the port wine trade. Apart from the shipping, mostly carried on from its harbour of Leixões, other industries include the spinning and weaving of cotton, wool, and silk, sugar refining, distilling, and tanning, and the manufacture of pottery, tobacco, and paper. Pop. 215,625.

OPOSSUM (Didelphys). Marsupial mammal. The family to which it belongs is found only in America. Opossums are all of small size, nocturnal in habit, carnivorous and insectivorous, and with very few exceptions make their homes in the trees. Most of them have long prehensile tails, but many lack the pouch which is characteristic of marsupials. In Australia the name opossum is given to the phalanger. See Marsupial.

Ops. In Roman mythology, wife of Saturn, and patroness of agriculture. The Romans identified her with the Greek Rhea, the wife of Cronos (q.v.).

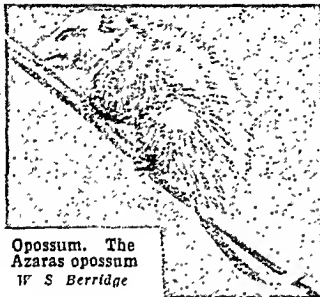
OPTICS. The science of light and vision. The most familiar phenomena of vision are our inability to see objects round corners; the forms of shadows cast by opaque bodies; the formation of images of luminous objects by mirrors and the lenses of such instruments as reading glasses, telescopes, microscopes, cameras, and projecting lanterns. A great deal of the knowledge we possess concerning these matters is very satisfactorily summarised in a few principles which are referred to as the laws of Geometrical Optics. No hypothesis is made as to the nature of light beyond the simple assumption that it is an influence emitted from all visible bodies and capable of affecting the retinae of our eyes.

While geometrical optics gives an adequate theoretical explanation of the facts concerning image formation, it is inadequate to explain many observed results of experiment in optical science. The phenomena of interference, diffraction, polarisation, and even chromatic dispersion are quite beyond its scope. As a simple statement of interference we can say that it is possible for two specially adjusted sources of light to produce darkness along certain paths, this being compensated by reinforced illumination along others. In diffraction we deal with the existence of certain colour fringes well inside the geometrical shadow cast by the edge of an opaque object. In polarisa-

tion we meet with the phenomenon of double refraction by certain crystals, each of the two refracted rays arising from one incident ray being plane-polarised.

In such phenomena, no adequate explanation is possible without the help of a definite theory as to the nature of light. Such matters are treated in works on physical optics. In them appeal has to be made to mathematical analysis of a type much more complex than that involved in the comparatively simple geometry used in geometrical optics. See Eye; Light; Polarisation; Refraction; Relativity.

OPTOPHONE. Instrument, invented by E. E. Fournier D'Albe, which converts optical into phonic or sound effects, to enable blind persons to read printed matter by ear. Rays of light are directed upon the printed matter, and are interrupted by a revolving disk perforated with eight rings of holes, the number of holes in the rings being proportional to the vibrations in the notes of a musical octave. There is also a cover containing a row of eight holes which register at intervals with those in the disk. The light traversing the perforations is received upon a selenium tablet connected with a telephone receiver. Each letter as it passes the row of perforations is accompanied by a characteristic sound in the receiver.



Opossum. The Azaras opossum of S. Bertrige

OPUNTIA. Genus of succulent plants of the order Cactaceae. All are natives of America, and some are familiarly known as prickly pear and Indian fig. The majority require treatment in greenhouses, as some of them reach a height of 20 to 30 ft. Several species are quite hardy in Britain. They flower during the summer months, with red, yellow, or purple blossoms.

OR (Fr.). In heraldry, gold, the principal metal.

It is represented in drawings by small dots over the whole space, and in painting either by gilding or yellow pigment. See Heraldry.

ORACLE (Lat. orare, to speak, pray). Originally, in Greece, the seat of worship of a deity where responses were given to inquirers. The responses were accepted as representing the voice of the deity as expressed through a priest or priestess in a state of religious exaltation, or through some other medium, as at the oracle of Zeus at Olympia, where the divine will was interpreted by inspection of the entrails of sacrificed animals.

Other well-known Greek oracles were the oracle of Zeus at Dodona, in Epirus, and that of Apollo at Delphi. See Divination.

ORAN. Seaport and naval station of Algeria. On the gulf of Oran, it is 260 m. by rly from Algiers. The city has an excellent harbour, and exports wine, cattle, grain, and minerals.

The modern parts are well planned and built in the French style; notable buildings are the cathedral and the grand mosque. Pop. 150,301.

ORANGE (A r a b. nāranj). Fruit of *Citrus aurantium* and its varieties, evergreen trees of the order Rutaceae, natives of Asia. The first British oranges appear to have been grown by Sir F. Carew at Bedington, from 1595 onward. The principal varieties now grown are the sweet S. Michael's, the bitter Seville, the Jaffa, the Maltese blood,

the Tangerine, and the Mandarin. Most imported oranges have had to be gathered and packed while still green, and undergo a sort of ripening in transport; consequently, they have not the delicious flavour of those ripened naturally on the tree.

The cultivation of the orange is carried on in all warm countries. The orange is extraordinarily prolific, and yields of fourteen and even sixteen thousand oranges have been secured from a single tree. See Citron.

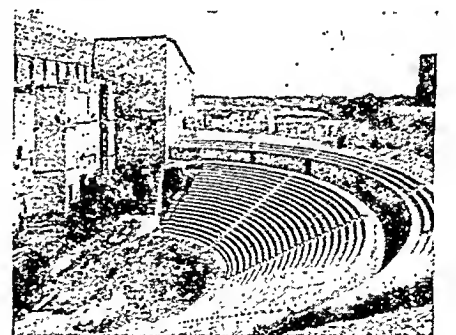
ORANGE, GARIEP OR GROOTE RIVER of S. Africa. It rises near the Mont aux Sources, in the highest portion of the Drakensberg Range, in N.E. Basutoland, and flows into the Atlantic Ocean about 45 m. N.W. of Port Nolloth, after a course of about 1,300 m. Its chief tributary is the Caledon. W. from Palmietfontein the Orange forms the N. boundary of the Cape Province. It was explored in part, in 1779, by Colonel Gordon, a Dutch officer, who named it after the stadtholder of Holland.

ORANGE. Town of France. It is on the river Meyne, 17 m. by rly. N. of Avignon. The ancient Arausio, it contains a Roman triumphal arch and a Roman theatre.

The cathedral of Notre Dame dates from the 11th century. Pop. 10,766.

THE HOUSE OF ORANGE. As the capital of a little principality, the town gave its name to a famous European family. The principality had its own rulers from about 900, and in 1500 the family died out and it passed to the house of Nassau. Its members called themselves princes of Orange and retained the principality, although their interests were chiefly in the Netherlands until 1702. By the treaty of Utrecht, in 1713 it became part of France.

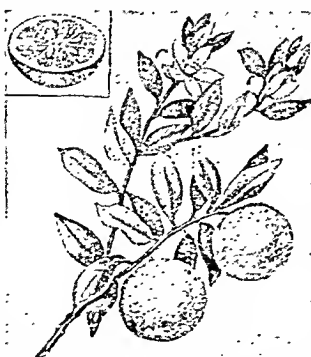
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Orange, France. Interior of the Roman theatre, showing the restored tiers of seats

ORANGE. Town of New South Wales. Situated 3,000 ft. above sea level and 190 m. W. of Sydney by rail, it is the centre of a fruit and wheat-growing district and a rich mineral area, yielding gold, silver, and copper. The town has been since 1830 an important point on the route W. from Sydney over the Blue Mts., first by the main road, and later by the railway. Pop. 8,470.

ORANGE FREE STATE. Province of the Union of South Africa. It is bounded N. by the Transvaal, E. by Natal and Basutoland, and S. and W. by the Cape Province. The area is 49,647 sq. m. The Cape to Cairo Rly., with numerous branches, traverses the province. Bloemfontein is the capital. Pop. 628,827, of whom 188,553 are Europeans.



Orange. Spray of foliage, flower, and fruit. Inset, fruit in section

About 1824 some Dutch farmers crossed into the Orange Free State from Cape Colony. In 1836 more Dutch farmers arrived. In 1843 the British appeared and took the Basutos under their protection. In 1848 British sovereignty was formally proclaimed by Sir Harry Smith, the country being at this time known as the Orange River Sovereignty. The British position was unsatisfactory, and on June 30, 1854, a proclamation declared the abandonment of British sovereignty. The Boer republic, then formed, lasted until 1900. It was named officially the Orange Free State. Warfare with the Basutos was carried on until 1869, when the boundary between the two peoples was defined. The British helped to negotiate this treaty, and by it part of Basutoland was added to the republic.

After 1888 the Boer republics entered into closer relations with each other, and in consequence the Orange Free State, under President M. T. Steyn, joined the war against Great Britain in 1899. The province was annexed by Great Britain in 1900 during the South African War as the Orange River Colony. Responsible government was given to it in 1907, and in 1910 it joined the Union of South Africa, being named the Orange Free State in place of the Orange River Colony. See South Africa; Transvaal.

ORANGE SOCIETY. Irish political association founded in Armagh in 1795 for the defence of Protestantism and the maintenance of the Protestant ascendancy in Ireland. In the 19th century Orangeism was directed to the repression of the movement for Catholic emancipation. See Catholic Emancipation.

ORANGE-TIP BUTTERFLY (*Euchloë cardamines*). Small butterfly of spring, common in British lanes, and distributed over Europe and a great part of Asia. It measures about $\frac{1}{2}$ in. across the expanded wings. These on the upper side are mainly white with a black base, and the tips of the fore wings margined with black, broadly in the female, narrowly in the male, in which sex nearly half the wing is orange. On the under side the hind wings are heavily blotched with green. See Butterfly.

ORANG UTAN (Malay, man of the woods). Species of anthropoid ape (*Simia satyrus*) found only in Borneo and Sumatra. A full-grown male stands about $4\frac{1}{2}$ ft. high, and its arms are so long that in the erect position the fingers almost touch the ground. The legs are short, and when walking the animal rests on the knuckles of the fingers and the outer edges of the feet, the soles being turned inwards. The skin is covered with long, shaggy, reddish-brown hair, and in old animals there is often a full beard. Orangs occur in the densest forests, and are usually found in families consisting of the two parents and a few young ones. They construct rough nests of sticks in the trees, in which they pass the night. They feed by day, principally on fruit, though they also eat leaves and shoots. See Man.

ORATORIAN. Familiar term for the R.C. Congregation of the Oratory of Our Lord Jesus Christ, and that of the Oratory of S. Philip Neri (q.v.). The first named was founded by Cardinal de Bérulle, at Paris, in 1611. The Oratory of S. Philip Neri dates from 1558. The society is composed of priests without vows, but agreeing to a rule approved by Paul VI in 1612. Each house is independent. The Oratory was introduced into Britain in 1847 by J. H. Neale, and its centres in England are at Farnham and Brompton (q.v.).

ORATORIO. Sacred story or drama set to music, in which solo voices, chorus, and instruments are employed. Its underlying idea may be traced to the plays of the Middle Ages which were employed as a popular method of instruction, presenting sacred history in a form which could be readily understood.

S. Philip Neri (q.v.) introduced into his society the acting of sacred dramas, and also the singing of hymns in Italian. In his Little Oratory in Rome the musical services of the Oratorians were held from about 1574. These early performances of sacred drama interspersed with sacred music gradually led to the conception of the oratorio as a complete work of musical art.

The earliest surviving work to which the name oratorio is applied was called *The Representation of the Soul and the Body*, the music of which was composed by Emilio Cavaliere. This was performed in the Oratory in 1600. The oratorios of Bach and Handel form the two most important landmarks in the history of the oratorio. Bach's chief works in this form are his two *Passions*—according to S. John and S. Matthew—and his *Christmas Oratorio*. The oratorios of Handel stand in marked contrast to the deeply devotional works of Bach.

ORCHARDSON, SIR WILLIAM QUILLER (1835-1910). British painter. Born in Edinburgh, March 27, 1835, he settled in London in 1862, became A.R.A. in 1868, R.A. in 1877, and was knighted in 1907. He painted historical genre with a definite aesthetic motive; but the oft-repeated brown tone of his pictures later developed into a mannerism. As a portraitist he steadily increased his reputation up to his death, which took place April 13, 1910. His last portrait, that of Lord Blyth, was one of his finest works.

ORCHESTRA. Musical term. Originally it meant only the platform or staging to accommodate the band and chorus, and other performers. Later the word was applied to the orchestral band, both players and instruments, including strings, wood-wind, brass, and percussion.

Successive stages have been as follows: (1) the period of Purcell, Bach, and Handel (1660-1750), strings in two, three, or four parts reinforced by hautboys and bassoons, with a background of harpsichord or organ tone; (2) the period of Haydn, Mozart, and Beethoven (1750-1827), when the strings were permanently established as the foundation of four-part harmony, with wood-wind, horns, trumpets, timpani, and trombones for brilliancy and colouring; (3) the modern period since Beethoven's death, when there has been a gradual piling up of all available effects.

ORCHID. Extensive order of herbs, growing in the ground or on trees. The flowers are either solitary, or form spikes, sprays, or clusters. They are irregular, and consist of three coloured sepals and three petals, of which the two laterals are alike, but the third (labellum or lip) is usually larger, and the base often ends in a hollow spur. There is a

single stamen, united with the style to form the column. The minute, spindle-shaped seeds are contained in a three-valved capsule.

Orchids are natives of all parts of the world, with the exception of the coldest regions. A few hardy ones are natives of Britain.



Orchid. Left, *Orchis maculata* (spotted orchis). Above, *Cattleya labiata*

which appears in April in copses, has red-purple flowers, and the leaves are spotted with purple black. The spotted orchis (*O. maculata*) has a more pyramidal spike, and the pale lilac flowers are marked with purple.

ORDEAL BEAN (*Physostigma venenosum*). Perennial climbing herb of the order Leguminosae, native of tropical Africa. The leaves are broken into three leaflets. The purple, bean-like flowers are in sprays, and are succeeded by dark brown pods containing two or three large blackish or brown seeds. These seeds are extremely poisonous.

ORDER. Short term for an order of chivalry and other distinctions of the same kind. In the United Kingdom the chief orders are the Garter, Bath, S. Michael and S. George, Thistle, British Empire and others. Another is the Order of Merit, which does not carry with it the dignity of knighthood as the others do. Other countries have orders, notable ones being the Order of the Golden Fleece in Spain, and formerly in Austria, and the Legion of Honour in France. Some orders lapsed during the changes that followed the Great War. Each order has its distinctive badge, ribbon, motto, etc. See Bath; British Empire; Garter; Golden Fleece; Knighthood, etc.

ORDNANCE (Fr. ordonnance). Edict issued by authority. Specifically, the term is applied in Great Britain to an Act of Parliament not sanctioned by all three estates of the realm, e.g. the self-denying ordinance passed by the Long Parliament in 1645 at Cromwell's instigation. Temporary Acts of Parliament and Acts which are merely declaratory are also called ordinances. In its connotation of an established rule or rite the word ordinance is also used, especially by Presbyterians, of the sacraments, as the ordinance of baptism.

ORDINARY. In heraldry, the commonest charge. They are mostly plain symbols, composed of broad hands. They are among those found on the earliest feudal coats, and are supposed to occupy one-third of the shield, but generally are given rather less space. Most of the ordinaries have diminutives, usually smaller representations. The names of the ordinaries are chief, pale or paller, bend, bend sinister, fess or fesse, chevron, cross, saltire, quarter, and pile. See Heraldry.

In ecclesiastical law an ordinary is an ecclesiastic who exercises jurisdiction within a given district. In England it usually means the bishop of the diocese. The expression ordinary of the Mass means the fixed portion of the service as distinguished from the variable parts—such as collects, gospels, etc.—proper to special occasions. See Bishop.

ORDNANCE. General designation of all guns, howitzers, and firearms of larger calibre than small arms. Ordnance may be broadly divided into guns and howitzers.



Orang Utan. Specimen of the man-like ape of Borneo and Sumatra

In army organization, the term ordnance formerly embraced the engineers and artillery and all their equipment, but now is confined to the latter branch and their stores. The master-general at the war office controls the artillery and fortifications, but the duties of the army ordnance department include the provision, storage, distribution, and maintenance of arms and ammunition of all kinds, personal and camp equipment, vehicles, harness and saddlery, horseshoes, signalling stores, and telegraphic, barrack, hospital, and miscellaneous stores. See Ammunition; Army Ordnance Corps; Artillery; Gun; Howitzer; Rifle.

An ordnance artificer is a non-commissioned officer of the British navy. The branch to which he belongs was established in 1919 to provide a force to care for and maintain the naval gun armament. It took over the work then being performed by the armourer branch and the turret engine-room artificers.

The ordnance college is an establishment at Woolwich where officers are trained in the duties of the ordnance department.

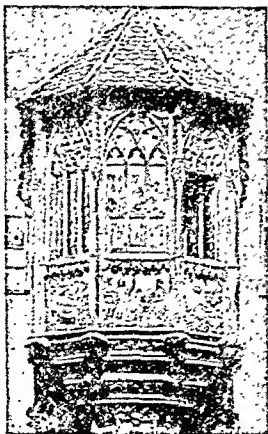
ORDNANCE SURVEY. Topographical survey of the United Kingdom. At first all the work was carried out on the scale of 1 in. to 1 m., but in 1824 mapping on the 6-in. scale was begun. Classifying the ordnance survey maps according to their scales, the largest scale maps are the cadastral maps on the scales of 25 in. and 6 in., and the 5 ft. and 10 ft. to the mile maps. The 6-in. map is a reduction of the 25-in. The best known is the 1-in. map. It is issued in three forms, of which that printed in colour and showing relief by means of contours and hachures is perhaps the best example. The headquarters of the Ordnance Survey Department are at Southampton.

ORDOVICIAN. In geology, the period following the Cambrian and preceding the Upper Silurian. The rocks of this period, widely distributed, consist of grits or greywackes, shales and limestones, and provide valuable building stones, including slates and marbles. The rocks are typical in Wales. The Ordovician rocks of N. America, in Ohio and Indiana, are sources of petroleum and natural gas, while iron, zinc, lead, silver, and graphite are found in British and other Ordovician rocks. See Geology; Rocks.

ÖRE. Bronze coin of Denmark, Sweden, and Norway; the one-hundredth part of a krone (q.v.). It is coined in bronze as one-öre, two-, and five-öre pieces; and in silver as 10-, 25-, and 50-öre pieces.

ORE. Mineral or rock mass containing one or more metals. The term is only applied to such masses if the metals are present in quantity and form calculated to make their extraction a profitable operation. The value of an ore depends on the proportion of the metal or metals present and the ease or difficulty with which the metals can be extracted. The payable proportion varies immensely.

The metallic ores are only occasionally found pure, being generally in the form of oxides, sulphides, sulphates, carbonates, silicates, etc., the most noted exceptions being gold and platinum



Oriel window. Example in Nuremberg, dating from 1361

found in their natural state. See Metal; Metallurgy; and under names of various metals.

OREGON. Western maritime state of the U.S.A. In the W., the Coast Range separates the rocky coast from the fertile valleys of the Willamette and Umpqua rivers, which are enclosed on the E. by the Cascade Range. In the E. lies an undulating prairie, scored by valleys and relieved by numerous mountains, and in the N.E. rise the Blue Mountains. The Columbia river marks most of the N. frontier, and the Snake river a large part of the E. frontier. Wheat, hay, potatoes, and fruits are produced, and the fisheries, stock-raising, dairying and lumbering are valuable industries. Gold, silver, copper, coal, and other minerals are worked. Salem is the capital, and Portland the commercial centre. Area, 96,699 sq. m. Pop. 1,065,174.

ORESTES. In Greek legend, son of Agamemnon and Clytemnestra. When his father was murdered, Orestes was saved from a like fate by his sister, Electra, who sent him to Phoeis, where he became an intimate friend of the king's son, Pylades. Having slain his father's murderers, he was pursued by the Furies, until his acquittal by the court of the Areopagus, at Athens. According to another legend, he went for purification accompanied by his friend, Pylades, to the country of the Tauri (Crimea), to fetch from there a statue of the goddess Artemis, returning with his sister, Iphigenia, to Argos, where Orestes reigned over his father's kingdom at Mycenae. See Agamemnon; Areopagus; Electra; Iphigenia.

ORFORD. Parish of Suffolk. It stands on the coast 20 m. from Ipswich. The ruins of the castle were presented to the town by Sir Arthur Churchman in 1928. The old church is also an object of interest. Pop. 818.

The title of earl of Orford was given to Sir Robert Walpole in 1742. It became extinct in 1797, but was revived in 1806 for another branch of the family. See Walpole.

ORGAN. The organ is the largest and most powerful of musical instruments. It has anything from one to five keyboards or manuals, a pedal keyboard, and numbers of stops. The draw-knobs controlling the stops are arranged in vertical rows on both sides of the manuals. Other draw-knobs, called couplers, control appliances for coupling the manuals to the pedals and to each other.

The manuals each have separate functions. The most important, great organ, contains the loud stops, flues, and reeds, of all pitches. Others are swell organ, choir organ, and solo organ. The last contains the stops imitating orchestral instruments—strings, wood-wind, and brass. Some organs have a fifth manual, echo organ, with pipes placed at a distance from the rest of the instrument. Only small organs can be blown by hand; the demand for different wind pressures and the use of pneumatic action make it imperative that larger organs should have some form of motor—combustion, hydraulic, or electric—for wind.

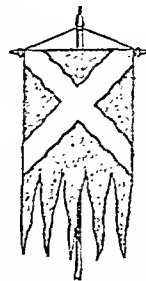
In the pneumatic action the keys, on being depressed, operate valves, admitting compressed air from a wind reservoir to tubes which transmit the power to other valves moving the pallets. The pallets admit wind to the organ pipes. In the electro-pneumatic action, electric current conveyed through small wires takes the place of the tubes. The depression of the key closes an electric circuit, operating magnets which, by means of pneumatic valves, open the pallets. See illus. American Organ, p. 73.

The Royal College of Organists was founded in 1864. Its headquarters are in Kensington Gore, London, S.W.7.

ORIEL (late Lat. oriolum, small room, recess). In architecture, term usually applied to a bay window corbelled out from the wall

of an upper floor, or over a porch, but formerly extended to a bay window on the ground floor. It was a conspicuous feature of Tudor architecture. See Gothic Architecture.

One of the Oxford Colleges is called Oriel. It was founded in 1326, and its buildings are in Oriel St. and High St. It was the college of Cecil Rhodes, who left money for new buildings.



Oriflamme. Five-pointed French royal standard

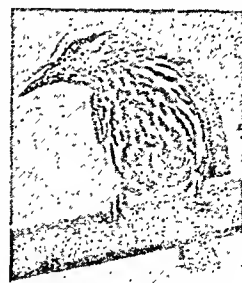
ORIFLAMME (Fr. golden-flame). Standard of the French kings. It was kept by ecclesiasties, and was supposed to have been the cloak of a saint. It was destroyed in battle. The second oriflamme, kept at S. Denis, was red with yellow flames, and bad streamers. It was raised by the French at Agincourt, after which no more was heard of it.

ORIGEN OR ORIGENES (c. 185-254). Greek father of the Church. Born at Alexandria, son of Leonidas, a Christian martyr. He taught in the catechetical school there, founded a theological school, was imprisoned during the Decian persecution, 250, and died at Caesarea or Tyre. A voluminous and learned writer, he wrote a polyglot of the O.T., the first textual criticism of the Bible. Origen also wrote commentaries.

ORILLIA. Town and watering place of Ontario, Canada. It stands on Lake Couchiching, 86 m. N. of Toronto, and is served by the C.N. Rlys. and the C.P.R. Steamers go from here to places on Lake Simcoe. Industries include the making of motor cars and agricultural implements. Pop. 7,631.

ORINOCO. River of S. America. It rises in the Sierra Parima in the S. of Venezuela, near the Brazilian frontier, flows round these mts. in a great curve, and thence E. to the Atlantic. Between the mouths of the Guaviare and Meta the main stream makes the falls of Maipures and Atures, 36 m. apart. About 160 m. from the sea the Orinoco delta begins. The length is about 1,600 m.

ORIOLE (Oriolidae). Family of passerine birds, natives of the Old World. About the size of a thrush, they are richly coloured with yellow, olive green, and black; have short legs and long wings, and construct hammock-like nests. The Golden Oriole (Oriolus galbula) of Asia, S. Europe, and N. Africa is a regular visitor to Britain. The cock is golden yellow with the exception of the wings and the middle of the tail, which are black. The so-called Orioles which are found in the U.S.A. belong to the family Icteridae.



Oriole. Specimen of the green oriole

ORION. In Greek mythology, a famous giant and hunter. Falling in love with Meropé, daughter of Oenopion, king of Chios, he obtained from her father the promise of her hand, provided he cleared the island of wild animals. This task he performed, but Oenopion made him drunk and put out his eyes. Having recovered his sight by following the advice of an oracle, Orion took vengeance. He was killed either by the arrows of Artemis or the bite of a scorpion.

In astronomy, Orion is one of the constellations. Lying on the celestial equator, S.E. of Taurus, it contains the three famous

stars, Rigel, Betelgeux, and Bellatrix, a large number of variable stars and the great Orion nebula. See Constellation.

ORKNEY ISLANDS. Group of about 90 islands off the N. coast of Scotland. Pentland Firth divides them from the mainland. The total area is 375 sq. m., and they form a county of Scotland. Pomona, or Mainland, is the largest. Others are North and South Ronaldsay, Stronsay, Hoy, Flotta, Rousay, Westray, Sanday, Shapinsay, Burray, and Eday.

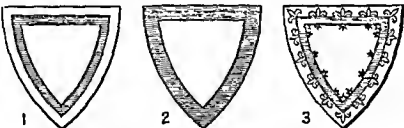


V. E. Orlando,
Italian statesman

Kirkwall, the capital, and Stromness, both on Pomona, are the largest places. Seapa Flow (q.v.) is situated between Pomona and Hoy.

The Orkneys were known in early times as the Orades. In the 9th century they became dependencies of Norway and Denmark, passing to Scotland in 1468. Pop. 21,700.

ORLANDO, VITTORIO EMMANUELE (b. 1860). Italian statesman. Born at Palermo, May 19, 1860, he became professor of law there in 1883, entered the Italian parliament in 1898, and in 1908 was minister of public instruction, and later minister of justice. In 1916 he was minister of the interior, and was prime minister 1917-19. During these two years Orlando was virtually dictator in Italy, and he was a dominant force at the Paris peace conference. He later became president of the chamber, and in 1925, as an anti-Fascist retired from parliament.



Orle. 1, Heraldic ordinary, shown, 2, with bordure, and, 3, tressure flory

ORLE. In heraldry an ordinary. Virtually a narrow border which does not touch the edge of the shield. Charges can be arranged in the form of an orle, e.g. an orle of martlets. A diminutive of the orle is the tressure, a famous example of which occurs in the royal arms of Scotland (or, a lion rampant within a double tressure flory-counter-flory gules).

ORLÉANS. Island of Quebec, Canada. In the St. Lawrence river, 30 m. from the city of Quebec, it covers 69 sq. m., and is visited by pleasure seekers. Pop. 5,000.

ORLÉANS. City of France. The capital of the dept. of Loiret, it stands on the right bank of the Loire, 75 m. from Paris. The old part is quaint and beautiful, and the modern city has broad streets and spacious boulevards. The cathedral of Ste. Croix was built in the 17th century. The 14th century chapels of the choir are part of the older cathedral, burnt by the Huguenots in 1567. Of the other churches the finest is S. Aignan, which has beneath it a Romanesque crypt of the 9th century. The hôtel de ville dates from 1442. Orléans possesses a fine library and several museums.

Orléans. Cathedral of Ste. Croix a 17th century Gothic building

The city is famous for its

association with Joan of Arc and the siege of Orléans, of which the city has many visible memories. The equestrian statue of the heroine was built in the Place du Martroi in 1855. Pop. 69,000.

SIEGE OF ORLÉANS. On Oct. 12, 1428, in the course of the Hundred Years' War, an English force, under the earl of Salisbury, appeared before Orléans. An assault failed, and Salisbury having been killed, the siege dragged on until April, 1429. By then Joan of Arc appeared, and having entered Orléans, she led the garrison in a series of attacks on the English positions, until on May 4, 1429, the besiegers abandoned the enterprise.

ORLÉANS, HOUSE OF. Cadet branch of the house of Bourbon (q.v.). The first duke of Orléans was a younger son of Philip VI, and the second was Louis, a son of Charles V. The poet, Charles of Orléans, succeeded the latter, and his son became king as Louis XII in 1498. After twice lapsing, the title was given to Philip, a son of Louis XIII, whose descendants still hold it, although it is not officially recognized in France. On the death, in 1926, of Louis Philippe Robert, duke of Orléans, who was an Arctic traveller, his cousin, John, duke of Guise, became head of the house.

Famous bearers of the title of duke of Orléans include Charles, one of the most noted of medieval poets and the author of many ballads and rondeaux. He married the widow of Richard II, and died Jan. 4, 1465.

Philip, duke of Orléans (1640-1701), was the younger son of Louis XIII. He married



Philip II,
Duke of Orléans
After J. B. Santerre

Henrietta, daughter of Charles I, a lady who acted as the intermediary between her brother Charles II and Louis XIV. By his second wife Philip had a son Philip (1674-1723), known as the regent Orléans, because he was regent of France from 1715 until his death, Dec. 23, 1723. A later duke, Louis Philip Joseph (1747-93), called Philippe Égalité because of his advocacy of democratic ideas during the Revolution, was sent to the guillotine Nov. 6, 1793. Henry, prince of Orléans (1867-1901), was known as an explorer. He wrote several travel works, and died in Assam, Aug. 9, 1901.

ORME'S HEAD, GREAT AND LITTLE. Promontories, 4 m. apart, on the coast of N. Wales, in the N.E. of Carnarvonshire. Llandudno is on the bay between them. The Little Orme is a limestone height rising sheer from the sea, and its caves can only be reached by boat. A road constructed in 1879 encircles the Great Orme, and a funicular rly. goes to the summit. The lighthouse, with group occulting lights, is 325 ft. above high water.

ORMOLU. Brass alloy. It generally consists of copper 58 parts, zinc 26, and tin 16, and is employed in the preparation of small statues, candlesticks, etc., and as the basis of a form of enamel work. In the latter a design is chiselled in the metal and the cavities are filled with enamel material, which is fused into a solid mass with the metal by heating. See Candelabrum.

ORMONDE, MARQUESS OF. Irish title held by the family of Butler. The first earl of Ormonde was James Butler, created in 1328.



2nd Duke of
Ormonde
After Kneller

James Butler, the 12th earl (1610-1638), a strong supporter of Charles I and then of Charles II, was made a marquess in 1642 and a duke in 1661. Ormonde was succeeded by his grandson, also James Butler (1665-1746), as 2nd duke. He served under William III, and from 1710-13 was commander of the British army in the Netherlands. In 1715 he was impeached as a Jacobite, and his titles and estates were taken from him. The rest of his life was spent in the service of the exiled Stuarts.

In 1791 John Butler was allowed to take the title of earl of Ormonde, and in 1816 his son was made a marquess. The title soon became extinct, but was revived in 1825. In 1919 James Arthur Butler became the 4th marquess. His seat is Kilkenny Castle, and his eldest son is called the earl of Ossory.

ORMSKIRK. Urban dist. and market town of Lancashire. It is 12 m. from Liverpool, being served by the L.M.S. Rly. The church of SS. Peter and Paul, mainly Perpendicular, has a tower and spire side by side; it contains the burial vault of the Stanley family, whose former seat, Lathom House, is near. The town has a 17th century grammar school. Market day, Thurs. Pop. 7,655.

ORMUZD, ORMAZD, OR AHURA MAZDA. In Zoroastrian mythology, a being, or principle, representing light and goodness. He was the elder of the two emanations from the eternal one; the second being Ahriman, the spirit of Evil. They are regarded as ever working against each other, but in the end the victory of Ormuzd is assured.

ORNAMENTS. Term for all articles used in, and subservient to, divine worship. Ornaments of the church include the altar or communion table, paten, chalice, vessels for wine and water, font, pulpit, Bible, Book of Common Prayer, etc.; of ministers, alb, chasuble, cope, surplice, rochet, pastoral staff, mitre, etc. The question as to what is permitted according to the Ornaments Rubric in the English Book of Common Prayer has involved much controversy and litigation, but generally most of the ornaments used in 1549 are regarded as legal.

Ornithorhynchus. Generic name for the platypus or duckbill (q.v.), one of the three animals forming the zoological order Monotremata or Prototheria.

ORPEN, SIR WILLIAM (b. 1878). British painter. Born in Dublin, Nov. 27, 1878, he studied at the Dublin metropolitan school of art and the Slade School, London, and began to exhibit at the New English Art Club in 1899. He became A.R.A. in 1916, and R.A. in 1919. At first a painter of subject pictures of chiefly interiors, he developed into one of the most brilliant portraitists of the day. During the Great War he was commissioned by the government to paint pictures of the battle scenes and personalities on the western front, and also painted scenes in connexion with the Paris Peace Conference, 1919. These experiences he recounted in *An Onlooker in France, 1917-19*, published in 1921. He was knighted in 1918.

ORPHEUS. In Greek mythology, son of the muse Calliope. He was famed for his extraordinary skill with the lyre, bestowed



Sir William Orpen,
British painter
Elliott & Fry

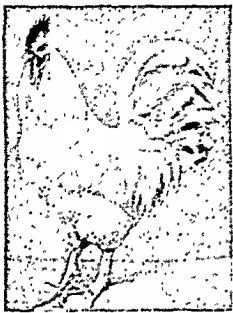


Duchess of Orléans,
English princess
After Mignard

upon him by Apollo. He accompanied the Argonauts in their expedition to the Black Sea, and lulled to sleep the dragon which guarded the Golden Fleece. On his return he settled in Thrace, and there his wife Eurydice (q.v.) died of a serpent bite. Her memory remained with him, and he consistently rejected the advances of the Thracian women, who in revenge tore him to pieces. The muses set his lyre among the stars.

ORPINGTON. District of Kent. It is 14 m. from London and 9 from Sevenoaks, on the Southern Rly. The river Cray rises here, and around are large areas under fruit. The church of All Saints is mainly Early English, with some old brasses. Here, in 1873, Ruskin set up a printing establishment. During the Great War there was a large hospital for Canadian soldiers at Orpington. Pop. 7,047.

ORPINGTON. Name given to certain domestic fowls. The Black Orpington was raised by W. Cook of Orpington, Kent, who



Orpington. Cock of the white variety of the breed

stated that he raised them from crossings of the black Plymouth Rock, the Langshan, and the Minorca. The Buff Orpingtons are said to have been bred from Cochins crossed with ordinary farmyard fowls, and selected until the type was fixed. Orpingtons are good layers and good table birds. There is also a white Orpington.

ORRELL. Urban dist. of Lancashire, 3 m. from Wigan and near the Leeds and Liverpool canal. The chief industry is cotton manufacture. Pop. 6,775.

ORRIS ROOT. Dried rhizome of the

Florentine iris (*I. florentina*), which gives off a strong violet-like odour causing it to be extensively employed by the perfumer. It forms the basis of "violet powder" and other toilet powders. It possesses emetic and cathartic properties. Some of the orris root of commerce is obtained from *Iris pallida*.

ORSAY, ALFRED GUILLAUME GABRIEL, COUNT D' (1801-52). French dandy. Born in Paris, Sept. 4, 1801, in 1822 he formed an intimate friendship with the 1st earl and countess of Blessington, with whom he travelled in Italy. In 1827 he married Lady Harriet Gardiner, daughter of the earl's first marriage, but they soon separated. After the earl's death in 1829 d'Orsay lived with the countess at Kensington, and their house became famous as a social centre. With Lady Blessington he left for Paris, bankrupt, in 1849, and was appointed director of fine arts shortly before he died, on Aug. 4, 1852.



Count d'Orsay. French dandy After R. J. Lane, R.A.

ORSINI, FELICE, COUNT (1819-58). Italian revolutionist. A Romagnol by birth, he became an advanced liberal, and in 1844 was sentenced to life imprisonment for his connexion with the revolutionary party. Liberated under the amnesty of Pius IX, 1846, he was a member of the government of Rome during the republic of 1849, and on its fall became an indefatigable agitator. On Jan. 14, 1858, he threw a bomb at Napoleon III and his empress as they drove to the Opéra in Paris. They escaped injury, but ten other people were

killed and 150 wounded by the explosion. Orsini among them. He was arrested and executed March 13, 1858.



Felice Orsini. Italian revolutionist After Vintner

ORTHOCERAS. Genus of fossil nautiloid cephalopods. They are distinguished by their straight horn- or cone-shaped shells, the exterior of which is smooth or striated, and the interior divided into chambers by partitions. The fossil, which is one of the index fossils, is common in Palaeozoic limestones.

ORTHOCLASE. (Gr. *orthos*, straight, *klasis*, fracture). In geology, a potassium aluminium silicate or potash felspar. It is a constituent of many crystalline rocks, e.g. granite, porphyry, gneiss, etc., has a lustrous glassy white, light yellow, green, or red colour, and crystallises in the monoclinic system. It is found widely distributed, and many varieties are cut and polished for gem stones, e.g. moonstones and sunstones.

Orthodox Eastern Church. Alternative name for the Holy Orthodox Catholic Oriental Church, also known as the Greek Church (q.v.)

ORTHOPTERA (Gr. *orthos*, straight; *pteron*, wing) Name given to an order of insects. As a rule the fore wings are stiff, and when at rest they cover the large hind wings with which the insects fly. The mouth parts are adapted for biting. The metamorphosis is incomplete, the larvae resembling their parents but having no wings. There are more than 10,000 recognized species, which include the cockroaches, locusts, grasshoppers, earwigs, etc. See Insect.



Ortolan. Bird of the hunting family

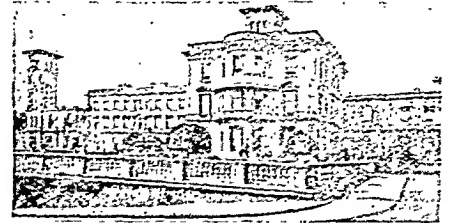
ORTOLAN (*Emberiza hortulana*). Bird of the bunting family. A summer migrant to Europe, spending the winter in Africa, its plumage is reddish brown, streaked with black on the upper parts, with a yellow throat and greenish breast and head. It nests on the ground, and feeds on insects and various seeds. It is seen occasionally in England during the summer months. Numbers are netted in S. Europe and fattened upon grain as a table delicacy.

ORWELL OR GIPPING. River of Suffolk. Rising to the W. of Stowmarket, it flows S.E. to the North Sea. From its source to Ipswich it is known as the Gipping. The Orwell proper is an estuary, and extends 11 m. from Ipswich to Harwich, where it merges with the estuary of the Stour. See Ipswich.

ORYX. Genus of large antelopes. It includes about six species, which occur in Africa, Arabia, and Syria. They have long and bushy tails and are distinguished by their long, ringed horns, which are nearly straight. See Gemsbok.

OSAKA. City of Japan, in Honshu. It stands at the mouth of the Yodo, at the head of Osaka Bay. Osaka Castle dates from 1584. The walls were built of granite stones, but the superstructure was almost entirely destroyed by fire in 1868. There are shipbuilding yards and manufactures of cotton textiles, iron and metal goods, leather goods, ships, glass-ware, confectionery, and patent medicines. Osaka is a great exporting centre for textiles, refined sugar, and straw goods. There are exchanges for rice and cereals, cotton, cloth, and oils. The city owes its prosperity to Toyotomi Hideyoshi, who built the castle and made his capital here. Pop. 2,114,804.

OSBORNE HOUSE. Mansion in the Isle of Wight built for Queen Victoria. It is 1½ m. from E. Cowes, and, commanding a fine view of the Solent, is surrounded by an estate of about 3,000 acres. It was a favourite residence of the queen, who died here in 1901. There are other residences, Barton Manor and Osborne Cottage, on the estate. In 1902 King Edward presented the house and estate to the nation. Part of it was devoted to a convalescent home for officers. In 1903 a royal naval college was founded here, but in 1921 this was closed and the cadets and staff transferred to Dartmouth.



Osborne House, Isle of Wight, main front of the residence of Queen Victoria

OSCAR II (1829-1907). King of Sweden and Norway. He was born in Stockholm, Jan. 21, 1829, the third son of Oscar I. He succeeded to the throne on the death of his brother, Charles XV, in 1872, and his reign was chiefly occupied with the movement, which he resisted, to separate Norway from Sweden. Under the name of Oscar Fredrik he wrote a number of works in prose and verse, including a notable Military History of Sweden, and a biography of Charles XII. He died Dec. 8, 1907, and was succeeded by his son, Gustavus V (q.v.).

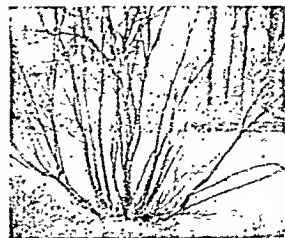
His father, Oscar I (1799-1859), was the son of Marshal Bernadotte. He married Josephine Beauharnais, granddaughter of the Empress Josephine, and proved a liberal and strongly anti-German monarch.



Oscar II, King of Norway and Sweden

OSHAWA. Town of Ontario, Canada. It stands on Lake Ontario, 34 m. from Toronto, and is served by the C.N.R. and C.P.R. It has a harbour and some manufactures. Pop. 11,940.

OSIER (*Salix viminalis*). Shrub or tree of the order Amentaceae. A native of Europe and N. Asia, it forms either a bushy shrub or a tree 30 ft high, growing in wet places. The long, straight branches are used for wicker-work. The leaves are narrow lance-shaped, the edges waved, and silvery beneath. The catkins are golden yellow. The purple osier (*S. purpurea*) does not attain the tree form, and its slender tough twigs have red or purple bark. Other willows are grown as osiers by pollarding the trunk.



Osier, in winter, showing long straight branches

OSIRIS. Egyptian deity. Originally the local god of Busiris, his worship developed during the Old Kingdom at Abydos, where he was traditionally interred. From being considered a virtuous benefactor, whence Egypt obtained her law

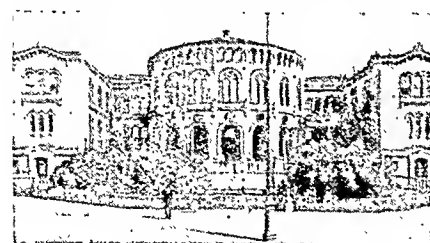
and agriculture, he became, by assimilation with Ra, a sun-god. He was also identified with other gods. The son of earth and sky, he was brother and husband of Isis and father of Horus. He was god of resurrection and eternal life, and judge of the dead. As lord of the underworld Osiris appears with a mummified body, wearing a plumed crown, and associated with ideas concerning the after-life. See Amenti; Anubis; Egypt; Isis; Serapis.



Osiris as the moon-god
From a statue in the
British Museum

OSLER, SIR WILLIAM (1849-1919). British physician. Born at Bondhead, Canada, July 12, 1849, he was appointed professor of physiology at McGill University, 1874, of clinical medicine at Pennsylvania University, 1884, of medicine at Johns Hopkins University, 1889, and regius professor at Oxford University, 1905. Created a baronet in 1911, Sir William Osler wrote widely and authoritatively on nearly every aspect of medicine. He died Dec. 29, 1919. Osler's books include *Principles and Practice of Medicine* and *A System of Medicine*.

OSLO. Capital of Norway, formerly called Christiania. It lies at the head of Oslo Fiord. The buildings include the old fortress of Akershus, the royal palace, Parliament House, university, and several museums. There are several fine parks. The city is an important rly. and commercial centre. There are ship-building yards, iron and steel foundries, and engine works, besides manufactures of paper, leather, matches, etc. The exports include timber, wood pulp, paper, matches, butter, condensed milk, fish, and hides. The name of the city was changed to Oslo as from Jan., 1925. It was called Christiania after King Christian IV of Denmark and Norway, who refounded it in 1624 after the destruction by fire of the old city of Oslo. Pop. 258,483.



Oslo. The Storting or Parliament House

OSMIUM. Rare metal, discovered in 1803. Its chemical symbol is Os, atomic weight 190.8; atomic number 76; specific gravity 22.0; melting point about 2,500° C. It is bluish white in colour with distinct lustre. It is found, chiefly associated with platinum, in the mines of Russia, South America, California, and the East Indies, in the form of osmiridium or iridosmine. The chief industrial use of the metal is in the manufacture of filaments for electric lamps.

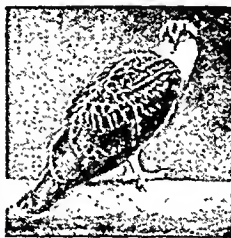
OSMOSIS. Name applied to the diffusion of one liquid into another, when they are separated by a permeable membrane. The force impelling osmosis is known as osmotic pressure. A piece of bladder or parchment is a convenient membrane to employ in the apparatus. The direction of the osmosis varies according to the composition of the liquids in

the inner and outer vessels. If the osmosis be from the inner vessel to the outer, it is called exosmosis, if in the reverse direction endosmosis. Osmosis plays an important part in plant physiology and in chemistry.

OSNABRÜCK. City of Hanover, Prussia. It lies on the Hase, 70 m. W. of Hanover. Relics of its past include S. Mary's Church, a fine Gothic building, the R.C. cathedral with its cloisters, treasury, and relics of Charlemagne, and the town hall, wherein the treaty of Westphalia was discussed. The industries include iron and steel works. It is a rly. junction, and has a trade in cattle and horses.

Osnabrück was a member of the Hanseatic League. Its bishopric was founded about 800. In 1648, at the peace of Westphalia, it was arranged that it should be held by a Roman Catholic and a Protestant prince alternately. The last prince-bishop was George III's son, Frederick, duke of York. In 1815 its lands were added to Hanover. Pop. 89,079.

OSPREY. Bird of prey (*Pandion haliaetus*), known also as the fishing hawk. It is about 2 ft. long, the back and wings are dark brown, the crown of the head and the throat whitish, and the under parts white. It is found in nearly all parts of the world, but is rare in Great Britain. The nest, a large structure of sticks lined with moss, is usually built in a tree. It is always found near water, as the bird's food consists entirely of fish. The so-called osprey plumes which are articles of commerce are taken from a species of egret (q.v.).



Osprey. Bird of the
Australian species

OSSA. Mountain of Greece, in Thessaly. It lies E. of the river Peneus, and with its neighbouring height of Pelion (q.v.) is separated from Olympus by the vale of Tempe. The chief peak (6,398 ft.) is called Kissavo.

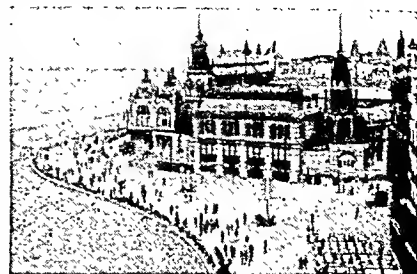
OSSETT. Borough of Yorkshire (W.R.). It stands near the Calder, 3 m. from Wakefield, with stations on the L.N.E. and L.M.S. Rlys. The chief industry is the manufacture of cloth, and in the vicinity are coal mines. Pop. 14,802.

OSSIAN (Ir. Oisín). Irish hero and bard of the 3rd century. The son of Finn Mac Cumhal, he is traditionally the great poet of the Gaels, and is himself a prominent figure in hundreds of ballads and tales from the 12th to the 18th century. He fled after the Fenian defeat at Gabhra in 293. A variant of a widespread tale relates that he was lured away by the daughter of the king of the Land of Youth, where he spent 300 years. Meeting S. Patrick, he recounted the past events to him.

OSSORY. Name of an old Irish kingdom. It existed for nearly 1,000 years, falling to pieces just before the English conquest of Ireland in the 12th century. It was part of the modern province of Leinster, roughly that now covered by Offaly (King's County), Leix (Queen's County), Kilkenny, and Carlow. Ossory is the name of a bishopric in the R.C. and Anglican churches, both cathedrals being situated at Kilkenny. See Ormonde.

OSTADE, ADRIAN VAN (1610-85). Dutch painter. Born at Haarlem, he

studied under Frans Hals, and spent the whole of his life at Haarlem, dying there April 27, 1685. A prolific painter of peasant genre, he was influenced in turn by Adrian Brouwer and Rembrandt. His brother Isaac (1621-49) painted landscapes



Ostend. The kursaal and part of the Digue, a promenade about 40 feet above the sea

OSTEND (Flemish, Oostende). Town of Belgium. It lies in flat country on the N. Sea coast, 14 m. W. of Bruges, with which it is connected by rly. and canal. Ostend is a popular watering place, and has a large kursaal, racecourse, theatres, and many other attractions. It has also the principal fishing fleet of the seaboard, and is a seaport of importance, with cross-Channel service, and the terminus of express lines to many parts of Central Europe. Pop. 44,241.

In the Great War Ostend was occupied by the British, Aug.-Oct., 1914, when it was entered by the Germans, who used it as a naval base, together with Zeebrugge. On the night of April 22nd-23rd, 1918, simultaneously with the attack on Zeebrugge, an attack was made on Ostend. On the night of May 9-10 a second attempt was made, the result being that *Vindictive*, used as a block-ship, was sunk in the harbour. Ostend was recovered by the Belgians in Oct., 1918. See Belgium.

Osteology (Gr. osteon, bone; logos, science). Science pertaining to bones. See Bone; Skeleton.

OSTIA. Ancient port of Central Italy. It was the port of Rome, and stood on the S. arm of the Tiber, which now flows by a different channel farther W., 14 m. S.W. of Rome. Its emporium or harbour became a naval station, and imported much wheat.

OSTRACISM. Political practice introduced by Cleisthenes at Athens in 508 B.C., and subsequently employed in other Greek states. Once a year every Athenian citizen had the privilege of writing on an oyster-shell (ostrakon) the name of any statesman whom he thought it would be desirable to send into exile. In the event of there being 6,000 votes adverse to any statesman, the decree of banishment or ostracism, as it came to be called, took effect. Athenians who suffered ostracism were Miltiades, Themistocles, Aristides, and Alcibiades, by the last of whom the practice was abolished.

OSTRICH (*Struthio camelus*). Largest living bird. Found wild in Africa, Arabia, and Mesopotamia, it is usually placed in the order Ratitae or running birds. The wings are small and useless for flight. A fine specimen stands nearly 5 ft. high at the back, and its neck accounts for about 3 ft. more. The legs, which are long and strong, and part of the thighs are bare, and the feet have only two toes. The head is relatively small, and is broad and flattened. The ostrich's beak is short and



Ostrich. Specimen of the African ostrich
Gambier Bolton, F.Z.S.

broad and the gape very wide. Ostriches are found in open country, specially desert, and never in wooded regions. They feed mainly on grass and leaves, but are practically omnivorous, and will swallow small mammals, birds, or reptiles.

Ostriches are chiefly valued for their plumes, and the establishment of farms for them dates from about 1867, and has developed into an important industry in S. Africa, Australia, the U.S.A., Algeria, and Argentina. The plumes are clipped usually three times in two years. See Cassowary.

OSTROGOTHS. Eastern branch of the Gothic people. They remained on the Dnieper when the others, who were called Visigoths, moved W. in the 3rd century. See Goths.

OSWALD (d. 642). King of Northumbria and saint. A son of King Ethelfrith, he crushed the British invaders near Hexham in 635 and became king of both Bernicia and Deira. In 642 he was defeated and killed at Oswestry by Penda, king of Mercia. Oswald is chiefly known for his efforts to promote Christianity, which caused him to be canonised.

OSWALDTWISTLE. Urban district of Lancashire. It is 3 m. from Blackburn, on the L.M.S. Rly. and the Leeds and Liverpool Canal. The chief industries are the making of cotton goods, chemicals, paper, and pottery, while around are stone quarries and coal mines. Pop. 15,440.

OSWEGO TEA (*Monarda didyma*) or **BEE BALM.** Perennial herb of the order Labiateae, native of N. America. It has square somewhat hairy stems, and opposite, ovalance-shaped, bristly leaves, which have a mint-like odour. The bright scarlet, two-lipped, tubular flowers are arranged in one or two whorls. The bracts beneath the flowers are coloured red. The folk-name indicates a use sometimes made of its leaves.

OSWESTRY. Borough and market town of Shropshire. It is 17 m. from Shrewsbury, on the G.W. Rly. S. Oswald's Church, Early English and Decorated, has been much restored. The grammar school dates from 1407. The industries include tanning and malting. There is also an agricultural trade. The town grew up around a monastery founded in memory of the Northumbrian king Oswald (q.v.), hence its name. Market day, Wed. Pop. 9,790.

OTAGO. Provincial dist. of South Island, New Zealand. Occupying the S. end of the island, it comprises Otago proper and Southland. Dunedin is the chief town, and the estuary at Dunedin is called Otago Harbour. The area of Otago proper is 13,957 sq. m.,

and of Southland 11,355. Pop., Otago, 149,522; Southland, 65,121. See New Zealand.

OTHO, MARCUS SALVIVS (A.D. 32-69). Roman emperor. He joined Galba in the rising against Nero, but later formed the conspiracy which resulted in Galba's murder. Otho was proclaimed emperor Jan. 15, 69, but in the same month Vitellius was also proclaimed emperor by the legions in Germany. The rival forces met at Bedriacum, where Otho was decisively defeated, and he put an end to his life, April 16, 69.

See Otto.

OTITIS. Inflammation of the organ of hearing. It may attack the outer ear, the middle ear, or the internal ear, and in all cases it produces deafness. External otitis is an inflammation of the skin of the outer ear. This should be frequently syringed with weak borax and water, dried, and smeared with zinc ointment.

Otitis media is an inflammation of the middle ear. It may be dry or moist, and occurs more often at or past middle life, and in rheumatic subjects. Internal otitis is occasionally the result of syphilis, and is sometimes caused by mumps. See Ear.

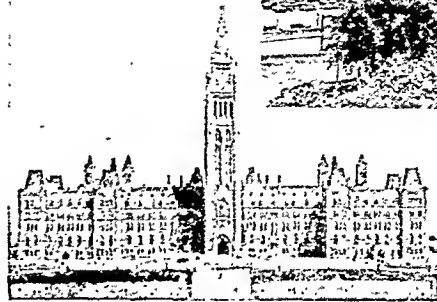
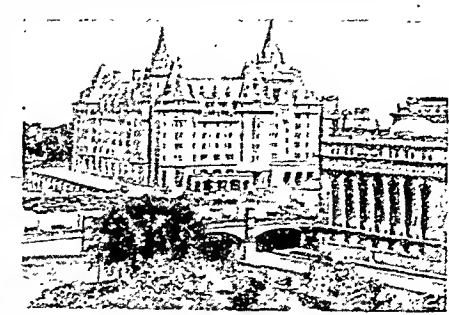
OTLEY. Market town and urban dist. of Yorkshire (W.R.) It stands on the Wharfe, 10 m. from Leeds, with stations on the L.M.S. and L.N.E. Rlys. The restored Perpendicular church of All Saints contains monuments to the Fairfax family, whose seat, Denton Park, is in the neighbourhood. The town has some manufactures and carries on an agricultural trade. Market days, Mon. and Fri. Pop. 9,536.

OTRANTO. City of Italy. It is on the S.E. coast on the strait of the same name, 45 m. S.E. of Brindisi, with which it is connected by rly. The cathedral contains a remarkable mosaic pavement of 1166; the church of San Pietro has Byzantine frescoes. The castle here gives its name to a romance by Horace Walpole. Pop. 2,729.

During the Great War the Strait of Otranto was closely patrolled by an Allied squadron, and British drifters guarded the nets laid to check the submarines.

OTTAWA. River of Canada, a tributary of the St. Lawrence. It rises in the W. of the prov. of Quebec, and joins the St. Lawrence by two branches at Montreal. Its length is 685 m. The Rideau Canal connects it with Lake Ontario. Its chief tributaries are the Gatineau, Lièvre, Coulouge, and Madawaska; most of these rivers are utilised for lumber transport.

OTTAWA. Capital of Canada. It is in the prov. of Ontario, where the Rideau joins the Ottawa, 116 m. from Montreal, and is served by the C.N. Railways, the C.P.R., and

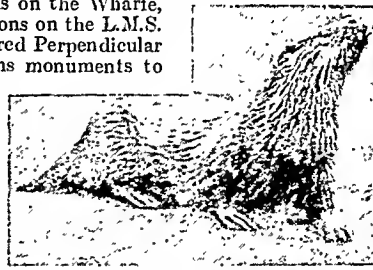


Ottawa. 1. Parliament House, with the Tower of Peace. 2. Château Laurier Bridge and Hotel

Courtesy of the Canadian Government

the New York Central Rly. Electric lines connect it with its suburbs and with Hull across the Ottawa. The parliament house was burned down in 1916, but was rebuilt, a prominent feature of the new building being the Tower of Peace, containing a war memorial chamber. The National Museum, art gallery, observatory, and Rideau Hall are notable buildings. There are Roman Catholic and Anglican cathedrals, many churches and schools, a university, and some fine parks.

Largely a residential city, Ottawa is also a lumber centre and manufactures machinery, flour, paper, etc. The falls near provide plentiful water power. Pop. 122,731.



Otter. Common species of the aquatic mammal found in Great Britain
W. S. Berridge, F.Z.S.

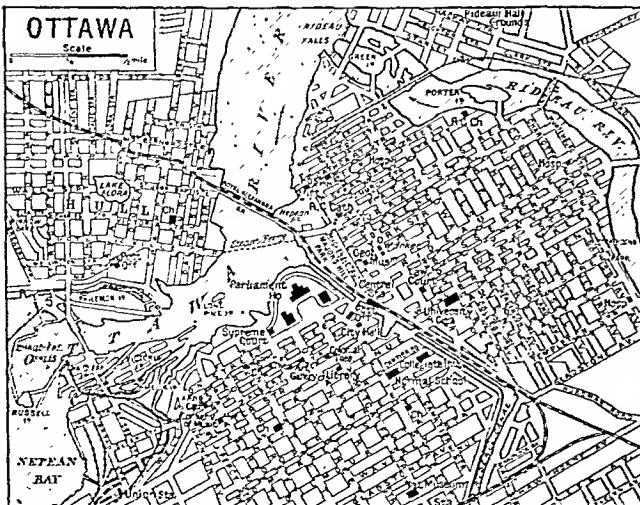
OTTER (*Lutra*). Aquatic carnivorous fur-bearing mammal, belonging to the family Mustelidae. Found in Europe, Asia, and America, it is usually about 2 ft. long in body, with a tail 18 ins. long, and is cat-like in general form. Its thick brown fur is of considerable commercial

value, especially in the American species. The feet are webbed, and the long flattened tail assists in swimming. Otters are not uncommon in secluded waters of Great Britain, where they work havoc among the fish, of which they kill more than they need. They live in burrows in the river banks, but frequently descend to the sea, where they feed upon molluscs, crustaceans, and fish.

Otter hunting takes place from May to Oct. It is conducted on foot with otter hounds, of which there are a considerable number of packs in England and Wales, and a few in Scotland and Ireland.

OTTERBURN. Village of Northumberland. 31 m. from Newcastle, on the Rede, in Redesdale, it is famous for the battle fought between the Scots and English, Aug. 19, 1388. The invading Scots were attacked by Sir Henry Percy (Hotspur) and his brother Ralph, both of whom were taken prisoner. The ballad of Chevy Chase describes an otherwise unknown fight, often confused with this. See Chevy Chase.

OTTER HOUND. Breed of dog descended from the old Southern hound of Great Britain. The true otter hound resembles the harrier in general appearance, but has large broad feet and a rough thick coat of rather greasy hair. It possesses good scent and keen



Ottawa, Canada. Plan of the capital of the Dominion. See above

sight, is a powerful swimmer, and has great endurance. Its colour varies greatly. In height it should be 22 or 23 ins. Many so-called otter hounds are modified foxhounds. The otter hound has keen sight.

OTTERY ST. MARY.

Urban dist. and market town of Devonshire. On the Otter, 12 m. from Exeter, with a station on the Southern Rly., it is noted for its beautiful church, S. Mary's with two transeptal towers and other features of interest. Ottery was the birthplace of the poet Coleridge. Ottery figures in Thackeray's *Pendennis* as Clavering St. Mary. Market days, first and third Mon. Pop. 3,638.

OTTO. Name of four German kings and Roman emperors. Otto I, the Great (912-973) was the son of Henry the Fowler, whom he succeeded in 936. At first virtually little more than duke of Saxony, he ended by restoring the empire of Charlemagne. Gradually he extended his power, both in Germany and Italy, and in 962 was crowned emperor by the pope in Rome. He died May 7, 973.

His son, Otto II (955-983), became ruler, on his father's death, of Germany and Italy. Otto III (980-1002) succeeded his father, Otto II, at the age of three.

Otto IV (1174-1218) was the second son of Henry the Lion, duke of Bavaria and Saxony, and of Matilda of England. In 1208 he was elected emperor, and crowned in Rome, Oct. 4, 1209, but his authority was never fully recognized. He died May 19, 1218.

OTTO I (1848-1916). King of Bavaria. Born April 27, 1848, the second son of King Maximilian II, he became king on the death of his elder brother, Louis II, on June 13, 1886. He had, however, then been insane for ten years, and his uncle, Prince Luitpold, acted as regent until his death in 1912. It was then decided to depose the king as incurably insane, in favour of his cousin, Louis III. Otto died Oct. 13, 1916. See Bavaria.



Otto I,
King of Bavaria

OTTO I (1815-67). King of the Hellenes. Born June 1, 1815, the second son of Louis I, king of Bavaria, he accepted the throne of liberated Greece, Feb. 6, 1833. The revolution of Sept., 1843, compelled the king to call a National Assembly. In 1862 an insurrection led to the abdication of Otto, who retired to Bavaria. He died July 26, 1867.

OTTO OF ROSES (Arab. 'ytr, perfume). Volatile scented oil distilled from roses, chiefly *Rosa damascena* and *moschata*. It is used in scents, medicines, lotions and ointments. Centres of the industry are Kashmir, Damascus, S. France and Kazanluk, Bulgaria.

OTTOMAN. Name of the dominant Turkish people. It is derived from Osman, who about 1290 became the leader of a tribe living under the protection of the Seljuks. Having won a great reputation as a fighter, he declared himself independent. His tribe, known as the Ottoman Turks, entered on their career of conquest, and in 1453 took Constantinople. See Turkey.

OTWAY, THOMAS (1651-85). English dramatist. He was born at



Otter Hound, Champion type of the breed of dog used in otter hunting

Trotton, Sussex March 3, 1651, and in 1675 appeared his first play, the tragedy of *Aleibades*, which had some success chiefly owing to the line acting of Mrs. Barry, with whom Otway fell in love. Her cruel treatment of him drove him first into the army and a campaign in Flanders with a cornet's commission, and latterly to a life of degrading dissipation. He died in utter destitution, April 14, 1685. Otway's best known plays are the tragedies *Venice Preserved*, 1682, and *The Orphan*. He also wrote several comedies, including

The Soldier's Fortune, 1679.

OUDENARDE. Town of Belgium. It is 10 m. from Ghent, on the Schelde. The town hall is a beautiful 16th century building with a tower in five storeys. Pop. 6,355.

The battle of Oudenarde was fought July 11, 1708, between the British and their allies and the French. The result was a decisive victory for the allied armies, who were commanded by the duke of Marlborough.

ODUH. Eastern portion of the United Provinces of Agra and Oudh, India. In ancient days a flourishing kingdom, later successively under the sway of the Afghan and Mogul emperors, it became independent about 1732. In 1856 Lord Dalhousie deposed the king of Oudh, and his territory was incorporated in what were then called the North Western provinces. Its area is 24,153 sq. m. Pop. 12,166,642. See India.

ODUTSHOORN. Town of the Cape Province, S. Africa. On the Grobelaars river, a tributary of the Olifants, 277 m. by rly. from Port Elizabeth, it is the centre of a prosperous agricultural district in which fruit and tobacco are grown and ostriches are reared. To the N., 18 m. away, are the Congo Caves, among the finest stalactite caverns in the world. Pop. (whites) 5,649.

OUIDA. Pen-name of Marie Loniso de la Ramée (1839-1908), British novelist. Born Jan. 1, 1839, at Bury St. Edmunds, she was the daughter of Louis Ramée, a teacher of French. She wrote some 40 novels, including *Strathmore*, 1865; *Under Two Flags*, 1867; *Moths*, 1880; and *The Massarenes*, 1897; and a number of short stories and essays of merit. She died at Viareggio in Italy, Jan. 25, 1908.



Ouida,
British novelist

OULTON. Village and lake of Suffolk. The village is 2 m. from Lowestoft, on the L.N.E. Rly. Borrow lived here for many years. Oulton Broad is visited for yachting and angling. Pop. 4,870.

OUNCE. Measure of weight. In Great Britain it is the 12th part of a pound troy and the 16th part of a pound avoirdupois. A fluid ounce is a measure of capacity, and equals one avoirdupois ounce of distilled water at 62° F. The ounce troy contains 480 grains, and the ounce avoirdupois 437½ grains.

OUNCE OR SNOW LEOPARD (*Felis uncia*). Species of leopard. Found in the mountainous districts of Central Asia, it reaches a length of

7 ft. and differs from the true leopard in its long woolly fur, whitish-grey colour, large spots, and arched skull. It never descends to the plains, and preys mainly upon wild sheep and goats. See Leopard.

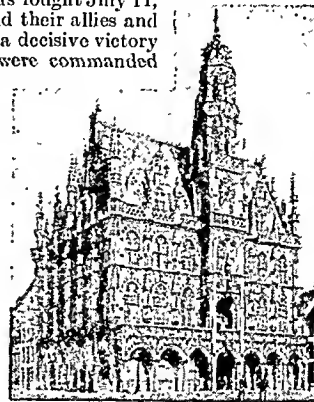
OUNDELE. Urban dist. and market town of Northamptonshire. On the Nene, 30 m. from Northampton, it has a station on the L.M.S. Rly. The church of S. Peter is a fine old building with a lofty spire. The Talbot Inn was built partly from materials brought from Fotheringhay. Brewing is an industry. Market day, Thurs. Pop. 2,655.

Oundle School was a country grammar school until the 19th century, when the Grocers' Company began to enlarge it. There is now accommodation for 500 boys.

OUSE. Name of several English rivers. It is a Celtic word meaning water. The Sussex Ouse rises between Horsham and Cuckfield, and flows to the English Channel at Newhaven. Its length is 30 m.

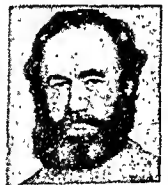
The Yorkshire Ouse is formed by the Ure and Swale, which unite near Boroughbridge. Thence, as the Ouse, it flows past York, Selby, and Goole to the Trent, with which it unites to form the Humber. The length is 60 m.

The Great Ouse rises near Brackley in Northamptonshire, and flows, mainly E., through Buckinghamshire, Bedfordshire, Huntingdonshire, Cambridgeshire, and Norfolk to the Wash, 2½ m. below King's Lynn. It is navigable to Bedford.



Oudenarde, Belgium. The 16th century town hall on the N. side of the Grande Place

OUTRAM, SIR JAMES (1803-63). British soldier and administrator. Born at Butterley Hall, Derbyshire, Jan. 29, 1803, he joined the East India Company in 1819. He was appointed chief commissioner of Oudh, and in 1857 commanded the Persian expedition. In the Indian Mutiny he joined Havelock on Sept. 15, helped to relieve the residency at Lucknow, and held it until relieved by Sir Colin Campbell. He was made a baronet, and is known as the Bayard of India. Outram died March 11, 1863.



Sir James Outram,
British soldier
After T. Briggs

OUZEL. Name for several birds of the thrush family (*Turdidae*). It is represented in Britain by the ring ouzel and the water ouzel (*Cinclus aquaticus*). The former is a large moorland blackbird, a migrant from Africa. The water ouzel or dipper is a resident. See Ring Ouzel; Water Ouzel.

OVAL, THE. Ground of the Surrey County Cricket Club. It is on the W. side of the Kennington Park Road, London, S.E., and covers about 9 acres. Opened as a cricket ground on April 16, 1846, it is held on a lease from the duchy of Cornwall. See Kennington.

OVAMBOLAND OR **AMBOLAND.** Country of South-West Africa. It is situated on both sides of the boundary between Angola and South-West Africa (q.v.). Area 16,000 sq. m.

OVARY. Gland in the female in which, after fertilisation by the spermatozoon, develop into new individuals. The ovaries are two in number, and are situated in the pelvis, one on each side of the uterus. Removal of the ovaries after puberty leads to cessation of menstruation, and possibly some degree of atrophy of the uterus and breasts.



Thomas Otway,
English dramatist

In botany, the ovary is the base of the pistil, containing the carpel or carpels, in which are the ovules or rudimentary seeds. See Flower.

OVEN BIRD. Popular name for the genus *Furnarius* of S. American birds, resembling tree-creepers, of which there are some 20 species. The name is derived from the oven-like nest constructed by some of the species. In the U.S.A. the golden-crowned water-thrush, a kind of wood-warbler, is called oven bird for a similar reason.

OVERBURY, SIR THOMAS (1581-1613). English poet and essayist. Born at Compton Scorpion, Warwick, his works include the poem *A Wife, Characters or Witty Descriptions of the Properties of Sundry Persons*, and *Crumbs Fal'n from King James's Table*. He was an associate of Robert Carr (later earl of Somerset), for opposing whose marriage with the countess of Essex he was imprisoned and poisoned, Sept. 15, 1613.

OVERTURE. Musical composition for instruments, intended originally as an introduction or opening of an opera, suite, oratorio, or play. Concert overtures are built on similar lines, but independent of any opera or play.

OVID (43 B.C.-A.D. 17). Roman poet, whose full name was *Publius Ovidius Naso*. He was born March 20, 43 B.C., at Sulmo (mod. Sulmona), in the country of the *Pacligni*. Being intended for the legal profession, he studied in Rome under the most famous rhetoricians of the day, but soon abandoned law for poetry. In A.D. 9 he was suddenly exiled to Tomi, now Constanta, on the Euxine. Unable to obtain remission of his sentence, he died at Tomi.

Ovid's extant poems, all except the *Metamorphoses* written in hexameters, may be divided into three classes: (1) *Erotic*. These include *Heroides*, a collection of fictitious love letters. (2) *Mythological*. These are: *Metamorphoses*, an account of the myths involving changes of form from the beginning of the world to the transformation of Caesar into a star; *Fasti*, a poetical calendar. (3) *Poems of exile*: *Tristia*, and *Epistulae ex Ponto*.

OVIEDO. City of Spain, capital of the prov. of the same name. Some 60 m. N.W. of León, on the edge of a fertile plain where sugar beet is extensively cultivated, it has national ordnance factories and manufactures textiles, leather goods, chocolate, and matches. The cathedral, rebuilt 1388, is one of the finest in Spain. The church of S. Miguel de Lino or Lillo, 9th century, has noteworthy carving. The university dates from 1604. Pop. 72,276.

OWEN, JOHN (1616-83). English Puritan. He was born at Stadhampton, Oxfordshire, and educated at Oxford. He became an independent, and went as chaplain with Cromwell to Ireland in 1649. Two years later he was appointed dean of Christ Church, Oxford, and in 1652 vice-chancellor of the university. At the restoration he was expelled from office, and became minister of an independent congregation in Leadenhall St., London. He died Aug. 24, 1683.



John Owen,
English Puritan
After 1655

OWEN, SIR RICHARD (1804-92). British scientist. Born at Lancaster, July 20, 1804, he entered the museum of the Royal College of Surgeons, London, 1826.



Sir Richard Owen,
British scientist

Ultimately he became its curator, a post he held until 1856, when he was appointed superintendent of the natural history department of the British Museum. In 1836 he had been selected for the first Hunterian professorship of comparative anatomy. He was knighted in 1884, and died Dec. 18, 1892.

OWEN, ROBERT (1771-1858). British social reformer. Born at Newtown, Montgomeryshire, May 14, 1771, in 1800 he became manager of and partner in the New Lanark Mills, and put into practice on a large scale his theory that the best work can only be expected from happy, prosperous, and educated employees. With the aid of Jeremy Bentham, he converted his business into a philanthropic trust for his workpeople. The colonies established by Owen—at Orbiston, in Lanarkshire, and at New Harmony, Indiana, U.S.A.—were unsuccessful. He died Nov. 17, 1858.



Robert Owen,
Social reformer

OWEN SOUND. Town and port of Ontario, Canada. On Owen Sound, where the Sydenham river falls into Georgian Bay, and 120 m. from Toronto, it is served by the C.N. Ry. and the C.P.R., and is a port for steamers to the Great Lakes and the St. Lawrence. Pop. 12,190. See Ontario.

OWL. Order of nocturnal birds of prey (*Strigiformes*).



Owl. 1. Long-eared (*Asio otus*).
2. Short-eared (*A. accipitrinus*).
W. S. Berridge, F.Z.S.

They are externally distinguished by their large heads and the radiated ruffs of feathers around the large eyes. They are noted for their silent flight and their keenness of vision at night.

The barn owl (*Strix flammea*) is tawny yellow above, with white face and under parts. In its nocturnal bunting it never wanders far from its abode, often a church tower or hollow tree. It utters a discordant scream, from which it is sometimes known as the screech-owl. The long-eared owl (*Asio otus*) is darker, with erect tufts of feathers above the eyes. It is gregarious, lives in dense pine woods, and usually varies its diet of small birds with insects.

The tawny owl (*Strix stridula*) is reddish brown above and reddish white barred with brown below, and is not uncommon in most wooded districts of England and Scotland. It makes its home in hollow trees, and utters the well-known hooting cry.

OX. Word of Anglo-Saxon origin, used for the male of the different species of the *Bovidae*. Oxen is one of the few existing forms of the old plural "en." The ox genus (*Bos*) includes the buffalo, bison, and yak, as well as the various domesticated breeds. All its members have hollow horns, as distinguished from the deer, which have solid antlers of bone, shed and renewed yearly.

Oxen belong to the ruminants. The stomach is four-fold, and the hastily-gathered food is stored in the first cavity or paunch until it can be regurgitated by means of the second or boneycomb stomach, and chewed at leisure.

With the one exception of the bison of North America, all oxen are natives of the Eastern hemisphere. See Cattle; Gyal; Zebu.

OXALIC ACID (H₂C₂O₄·2H₂O). A solid organic acid first prepared from wood sorrel (*Oxalis acetosella*), in which plant it occurs as the acid potassium oxalate. The acid is made on the commercial scale by treating sawdust from soft woods with a mixture of caustic potash and soda. It is largely used in calico printing and dyeing, and in the preparation of formic acid and synthetic dyes. Oxalic acid is also used in bleaching straw and flax, and also in cleansing brass and other metals.

OX-EYE DAISY or **DOG DAISY** (*Chrysanthemum leucanthemum*). Perennial herb of the order *Compositae*. A native of Europe and N. and W. Asia, it has spoon-shaped, deeply cut leaves and daisy-like flower-heads, 2 ins. across.



Ox-eye Daisy or
Dog Daisy

The rays are pure white, the disk florets yellow. It is a common weed in meadows.

OXFORD. City and eo. town of Oxfordshire. It is on the Thames, here called the Isis, which sweeps round the W. and S. of the city, and is here joined by the Cherwell. It is 63 m. by rly. from London, and is served by the G.W. and L.M.S. Ry. At Carfax, the centre of the old city, four streets meet: the High Street, the Cornmarket, Queen Street, and St. Aldate's. Across Magdalen Bridge, at the other end of the High Street, are modern suburbs. The chief industry is catering for the members of the university: there are also breweries and printing works, and an important cattle market. The cathedral, formerly the priory church of S. Frideswide, is included in Christ Church. Other interesting churches are the university church of S. Mary the Virgin, S. Peter in the East, S. Giles, S. Barnabas, S. Aldate, and S. Michael. All Saints is the city church.

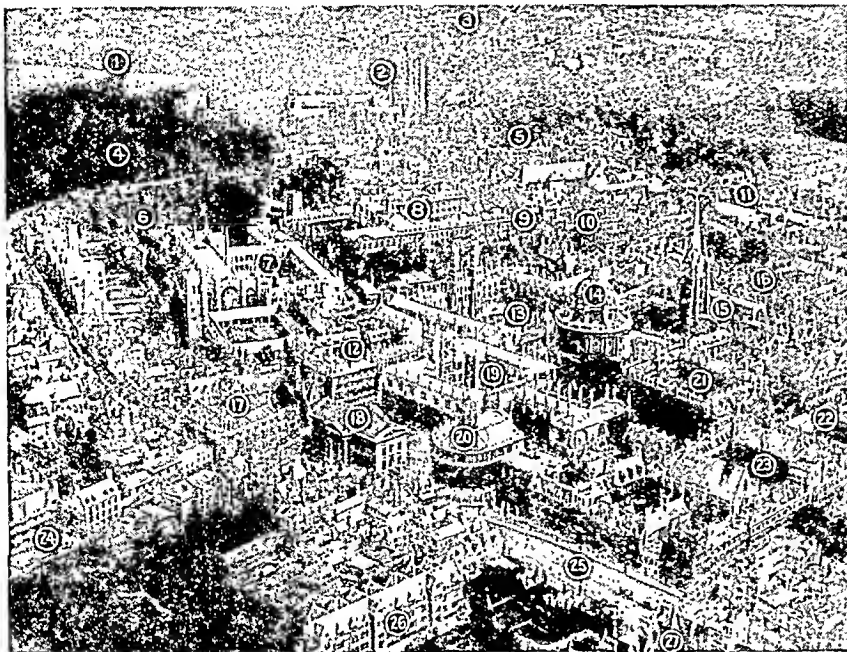
In 1928 the boundaries of the city were extended considerably, the urban district of Headington and other adjoining areas being included. This extension brings within the boundaries the Morris Motor Works at Cowley. Pop. 73,660.

OXFORD UNIVERSITY. This dates from about 1100, and the oldest college was founded in the 13th century. Oxford university was soon famed and flourishing. The members became a body under a chancellor, protected by privileges from the king. Colleges and halls were rapidly founded. In 1571 the university was reorganized, and in 1636 its statutes were revised. The constitution was revised in 1854 and extensive changes made in 1877.

Apart from the colleges, of which there are 21 and two halls, the university owns a good deal of property. Its buildings and institutions in Oxford include the Bodleian Library, University Galleries, Sheldonian Theatre, Indian Institute, observatories, several museums, and the buildings erected for examination and other purposes. It owns the parks and has a botanic garden. The head of the university is the chancellor, and its acting head the vice-chancellor, the head of one of the colleges. Two members have been returned to



Oxford. The famous High Street,
looking towards Carfax



Oxford. Air view of the city from the north-west. 1. River Cherwell. 2. Magdalen College. 3. Cowley. 4. Magdalen Deer Park. 5. Examination Schools. 6. City walls. 7. New College. 8. Queen's College. 9. High Street. 10. University College. 11. Merton College. 12. Hertford College. 13. All Souls College. 14. Radcliffe Camera. 15. University Church. 16. Oriel College. 17. Indian Institute. 18. Old Clarendon Building. 19. Bodleian Library. 20. Sheldonian Theatre. 21. Brasenose College. 22. Lincoln College. 23. Exeter College. 24. Wadham College. 25. Broad Street. 26. Trinity College. 27. Balliol College.

By courtesy of Aerofilms Ltd., Hendon

Parliament since 1604. See Ashmole, Elias; also the articles on the separate colleges.

The Oxford University Press has been continuous since 1585, and the Biblio section since 1675. The associated name of the Clarendon Press dates from 1713, when, from the profits of Clarendon's History of the Rebellion, new offices were erected. The London publishing house is at Amen House, Warwick Square, and there are branches elsewhere.

OXFORD, EARL OF. English title held successively by the families of Vere and Harley. In 1142 one of the Veres was made earl of Oxford. Robert, the 9th earl (1362-92), was made duke of Ireland. Aubrey, the 20th earl, died in 1703, and the title became extinct.

In 1711 Robert Harley was made earl of Oxford. He was succeeded by his son Edward (1689-1741), who had no sons, and the title passed to a cousin. It became extinct in 1853.

OXFORD, ROBERT HARLEY, 1ST EARL OF (1661-1724). English statesman. Born in London, Dec. 5, 1661, he entered Parliament in 1689 as a staunch Whig. He was speaker 1701-5 and in 1706 was appointed secretary of state for the southern department. In 1710 he became chancellor of the exchequer and virtual prime minister. Despite the bitter opposition of Marlborough and Godolphin, secret negotiations with France were begun in 1711, and the peace itself was signed two years later. In 1715 he was impeached for concluding the French treaty, and was committed to the Tower, where he remained until 1717. He died May 21, 1724. Of literary tastes, he made the collection of books and MSS. which is famous as the Harleian MSS.



Earl of Oxford and Asquith
British politician
Russell

OXFORD AND ASQUITH, HERBERT

HENRY ASQUITH, 1ST EARL OF (1852-1928). British politician. Born at Morley, Sept. 12.

1852, he was educated at Pndsey, and then, his father, Joseph Dixon Asquith, being dead, at the City of London school. From there he went to Balliol College, Oxford, where he had a brilliant career. In 1876 he was called to the bar and settled in London. In 1886 Asquith was elected M.P. for East Fife as a Liberal, and in 1892 he was appointed home secretary, a post he retained for three years. In 1895 he became one of the leaders of the Opposition, and during the South African War he was a conspicuous figure in the Liberal Imperialist group.

In Dec., 1905, Asquith was appointed chancellor of the exchequer. He succeeded Campbell-Bannerman as prime minister in April, 1908, and held that office until Dec., 1916. He was secretary for war as well as prime minister when war was declared against Germany in Aug., 1914. On May 25, 1915, his government became a coalition, and on Dec. 5, 1916, Asquith resigned the premiership.

In 1920 Asquith, having in 1918 lost his seat in Fife, was chosen M.P. for Paisley. At the general election of October, 1924, he was defeated, and in Feb., 1925, he was given an earldom, taking the title of earl of Oxford and Asquith. In Oct., 1926, he resigned the leadership of the Liberal party, and he died

Feb. 15, 1928. His title passed to a grandson, Julian, a son of Raymond Asquith, who was killed in action in 1916.

In 1877 Asquith married Helen, daughter of Dr. F. Melland, of Manchester, and in 1894 he married Margaret (Margot), daughter of Sir Charles Tennant. A prominent figure in social life, Lady Oxford, as she became, wrote an Autobiography, 1922, Places and Persons, 1923, and a novel, Octavia, 1928. See Asquith.

OXFORD HOUSE. Anglican settlement in East London. Founded in 1881 for members of Oxford University, the house itself is in Mape Street, Bethnal Green, E., but its activities are spread over a number of buildings in the locality. In connexion is a women's settlement called S. Margaret's House.

OXFORD MOVEMENT. Name given to the movement for reforming the life and worship of the Church of England that began at Oxford in 1833. An essential feature was the restoration of some of the ceremonial of worship that had fallen into disuse since the Reformation, and it was here that strong opposition was aroused. It was also called the Tractarian Movement because its aims were set forth in *Tracts for the Times*, a volume by various writers first published in 1834, while the adherents of the movement were called High Churchmen or, by their foes, ritualists. See Keble; Newman; Pusey.

OXFORDSHIRE. County of England, known sometimes as Oxon. Its area is 748 sq. m. Of very irregular shape, it is bounded on the S. by the Thames. In the S.E. are the Chiltern Hills, reaching up to 700 ft. Spurs of the Cotswolds enter the county, but the rest of it is undulating or flat. The chief rivers, tributaries of the Thames, are the Windrush, Cherwell, Thame, and Evenlode. It is served by the Gt. Western and L.M.S. Rlys. and the



Oxfordshire. Map of the South Midland county of England, sometimes known as Oxon

Oxford Canal. Oxford is the county town; other places are Banbury, Henley-on-Thames, Chipping Norton, Bicester, Thame, and Witney. Herein are historic and picturesque places such as Woodstock, Burford, Bampton, and Dorechester. Pop. 189,615.

OXFORDSHIRE AND BUCKINGHAMSHIRE LIGHT INFANTRY. Regiment of the British Army. It was originally the 43rd and 52nd Foot, raised in 1741 and 1755 respectively, the two being united as the



Oxford and Bucks Light Infantry badge

Oxfordshire Light Infantry in 1881. The 43rd served under Wolfe at the capture of Quebec in 1759 and in the West Indies, while both it and the 52nd fought in the American War of Independence. About 1801 the two, together with the 95th, were placed under Sir John Moore, were called light infantry, and became the famous light division. It won honour during the Indian Mutiny and in the South African War. In the Great War the regiment had, in addition to its regular battalions, territorial and service battalions, and several allied units from New Zealand and Canada. The depot is at Oxford.

OXFORD STREET. London thoroughfare. It runs W. from New Oxford Street, a link with Holborn, to join the Bayswater Road at the Marble Arch, W. Where it crosses Regent Street is Oxford Circus. New Oxford Street, opened in 1847, covers the site of the "rookery" of S. Giles. Oxford Street, named after Edward Harley, earl of Oxford, was formerly known as Tyburn Road. The street is a shopping centre, and in 1929-30 a number of fine new buildings were erected.

OXIDATION. Term in chemistry. It is applied in the strict sense to changes which result in the formation of new compounds with oxygen. The term oxidation has, however, been extended to kindred changes, such as new unions with chlorine or with some other element. See Oxygen.

OXIDES. In chemistry, compounds which oxygen forms with other elements. They are classified as: (1) Acid-forming oxides, those which when combined with water form acids; this class is also known as acid anhydrides, i.e. acids without water. (2) Basic oxides, produced when metals burn in air or oxygen. When combined with water basic oxides form hydroxides or hydrated oxides. (3) Peroxides, which contain more oxygen than basic oxides; part of the oxygen is loosely combined, and is given off on heating. (4) Neutral or indifferent oxides. See Anhydrides; Oxygen.

OXIDE ORES. The more important oxide ores are those of iron, the haematites; magnetic iron ore; magnetite; siderite; chalybite or spathic iron ore; cuprite or copper ruby ore; zincite or red zinc ore; and cassiterite.

OXLIP (*Primula elatior*). Perennial herb of the order Primulaceae, a native of Europe and Siberia. Its flowers are similar to those of the primrose, with short individual stalks springing from the top of a stout, tall stem like that of the cowslip. What is commonly known as the oxlip in gardens is a hybrid between the primrose and cowslip.

OX PECKER OR RHINOCEROS BIRD (*Buphaga*). Bird found in Africa. They are dull brown above and light brown beneath, and about



Oxlip. Leaves and flowers

the size of a starling. Insectivorous, they get their name from the habit of settling on the backs of the ox and rhinoceros to search for parasitic insects.

OXYGEN. Most widely distributed of the chemical elements, chemical symbol O, atomic weight 16, atomic number 8. It is a colourless, odourless, and tasteless gas, and forms about 21 p.e. by volume of the atmosphere. Oxygen also occurs in enormous quantities in the combined state. The characteristic of oxygen is its power of supporting combustion. It is essential to life.

In the laboratory oxygen is usually prepared by heating potassium chlorate, generally mixed with one-eighth its weight of manganese dioxide. This method was employed for making large quantities before the discovery of cheaper processes. When barium dioxide is heated it gives off an atom of oxygen, and yields the lower oxide (BaO). This process has been employed on a very large scale for the preparation of oxygen, the advantage being its economical working. It is known as the Brin process.

Oxygen is employed in medicine in cases of pneumonia. It is utilised also to make good a deficiency in the air of confined spaces, e.g. in submarines and coal mines, and is used in diving apparatus. When oxygen and hydrogen are burnt together in a special jet, a flame of very high temperature is so obtained, in which refractory metals such as platinum can be readily melted. When the oxyhydrogen flame is allowed to impinge on a cylinder of lime an intense white light is obtained, known as the limelight, or Drummond light. Oxygen is supplied on a commercial scale compressed into steel cylinders of various sizes. See Atmosphere; Combustion; Ozone.

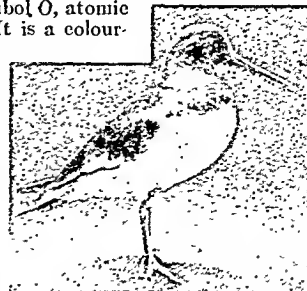
OXYRHYNCHUS. Ancient town near Bahasa, Upper Egypt. The oxyrhynchus (sharp-snouted) fish was venerated in the vicinity. Great finds of papyri were made here by B. P. Grenfell and A. S. Hunt.

OYSTER (*Ostrea*). Genus of bivalve molluscs. Over 100 species are known. In the edible oyster (*O. edulis*), common round the British coasts, the valves of the shell are unequal, the left valve, by which the animal is attached to the rock, being the larger. The exterior is rough and irregular, and the interior is white and pearly. The mantle edges are open all round, and the oyster feeds by lying with its valves slightly open, when the minute organisms on which it subsists are brought to its mouth by current movements in the surrounding water.

The oyster is extremely prolific. The spawning time is from May till August, during which the oyster is out of season. The ova hatch out on the folds of the mantle edges, and the young are periodically discharged as a cloud of spat. At this period the young swim freely in the water by means of cilia, and are the prey of many enemies. The survivors soon attach themselves to rocks or other objects, where they remain for the rest of their lives.

British native oysters—notably those laid down on the beds at Whitstable—have the reputation of being the best in the world. See Bivalve; Mollusc; Pearl.

OYSTER CATCHER OR SEA PIE (*Haematopus ostralegus*). British shore bird belonging to the plover tribe. The head and upper parts are black and the under parts white, while the long and straight beak is reddish orange. It is found about all the more rocky parts of the coast, and feeds upon molluscs, crustaceans, and marine worms.



Oyster Catcher, a British shore bird
W. S. Berridge, F.Z.S.

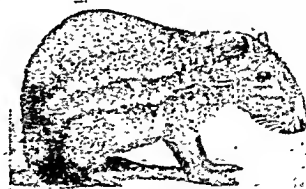
OYSTERMOUTH. Watering place of Glamorganshire, Wales, now part of Swansea. It stands near Mumbles Head, 5 m. from Swansea, and is on the L.M.S. and G.W. Rlys. In 1920 it became part of the borough of Swansea. The site and ruins of the castle here were given to the town by the duke of Beaufort in 1928.

OZOKERITE. Solid hydrocarbon mineral resembling beeswax. It is mined in various parts of the world, and, geologically, is always accompanied by petroleum. The white ozokerite is used for candle-making. A semi-solid substance is also obtained resembling vaseline, while the residue in the stills, consisting of a hard, black, waxy mass, is employed, mixed with indiarubber, for insulating electric cables. See Paraffin.

OZONE (O_3). Gas with a peculiar odour somewhat resembling that of dilute chlorine. It is a form of oxygen containing three atoms in the molecule against two atoms in a molecule of ordinary oxygen. The gas readily changes into ordinary oxygen, but has distinct properties. The peculiar odour of the air noticed in sea breezes is due to the presence of ozone. It is formed on a large scale by the discharge from an electrical machine in oxygen or air. Ozone is a powerful oxidising agent.

P. Sixteenth letter of the English and Latin alphabets. It is a voiceless labial or lip-sound. Its normal sound is that in peck, although in some cases it is mute, or nearly so, as in psalm, attempt. The combination ph in words derived from the Greek is pronounced f, as in philology. See Alphabet; Phonetics.

PAARDEBERG, BATTLE OF. Fought between the British and the Boers, Feb. 18, 1900. Near Paardeberg Hill the two armies came into touch. On Feb. 18 the Boers, entrenched in the dry bed of the river, were attacked from both sides, but when night fell the British infantry had lost heavily. The attack was not renewed, but starvation did its work, and on Feb. 27 4,000 Boers surrendered.



Paca or Spotted Cavy, S. American rodent related to the agouti
W. S. Berridge, F.Z.S.

PAARL, THE. Town of Cape Province, S. Africa. It stands on the Berg river, 36 m. from Cape Town, with which it is connected by rly. In the surrounding district the vine is grown. The town extends for about 7 m. along the river bank. The name means pearl. Pop. (whites) 6,678. To the W. of the town is the Paarl Mt.

PACA OR SPOTTED CAVY (*Coelogenys paca*). Rodent mammal related to the agouti. It is found in Central and S. America. Its fur is brown, with rows of white spots along the sides of the body. It is about 2 ft. long, and in form suggests a rabbit without the characteristic ears or the long hind limbs. It lives in burrows and does great damage to the crops.

PACHMANN, VLADIMIR DE (b. 1848) Russian pianist. Born at Odessa, July 27, 1848, he studied under his father, Vincent de Pachmann, a professor at Odessa, and then in Vienna. In 1878 he appeared at the Gewandhaus concerts in Leipzig, and afterwards in most of the great cities of Europe. He frequently visited London.

PACIFIC OCEAN. Largest of the oceans. It embraces about three-eighths of the total sea area. Northwards it is very definitely limited by the narrow Bering Strait, which contains a belt of shallow water stretching from the E. Cape of Asia to the American Cape Prince of Wales. Like the Atlantic, it is widely open to the S.

The Pacific differs from the Atlantic, not only in shape, but in its greater mean depth, which is 2½ m. as against 2 m., and in its greater absolute depth, for the deepest sounding hitherto obtained is that of 5,348 fathoms, off Mindanao, in the Philippines.

After the Great War the question of the control of the Pacific Ocean became an acute international problem, and in 1921 President Harding called a conference at Washington to discuss, among other questions, this matter. In 1922, by treaty the United States, Great

PADEREWSKI, IGNACE JAN (b. 1859) Polish pianist. Born at Kurylowka, Podolia, Nov. 18, 1859, he showed extraordinary talent on the piano when a child.



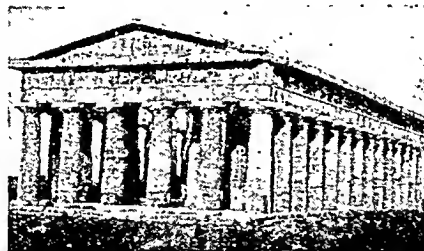
Ignace Paderewski,
Polish pianist

He played first in London in May, 1890, and his tours in Europe and America placed him in the front rank of living pianists. He also won distinction as a composer, his works including the opera *Manru*. In 1900 he founded the Paderewski fund with £2,000 to reward musicians. He was prime minister of Poland in Jan.-Dec., 1919, and represented his country at the Paris peace conference in 1919. Pron. *Pahd-er-efski*.

PADIHAM. Market town and urban dist. of Lancashire. It stands on the Calder, 8 m. from Blackburn and 3 m. from Burnley, with a station on the L.M.S. Rly. The chief building is S. Leonard's Church, an old foundation rebuilt in the 19th century. The industries include the manufacture of cotton, while coal mines and stone quarries are in the neighbourhood. Market day, Fri. Pop. 12,474.

PADSTOW. Urban dist. and seaport of Cornwall. It stands on the north coast, near the estuary of the Camel, 12 m. from Bodmin, with a station on the Southern Rly. The church of S. Petroek is an old building with some features of interest. S. Enodock's church has a Norman font. The name is a corruption of Petroek's Stow. Padstow Bay is formed by the Camel. Pop. 1,636.

PADUA. City of Italy. It stands on several branches of the Bacchiglione, just above its confluence with the Brenta, 22 m. W. of Venice, for which it is the rly. junction. Nearly all the ancient monuments and buildings have been destroyed. The university, founded in 1222, was famous throughout the Middle Ages. Many streets are bordered by arcades; the Renaissance cathedral and the 13th century church of Sant' Antonio, before which stands Donatello's equestrian statue of Gattamelata, the soldier of fortune, are notable. The Madonna dell' Arena and the Eremitani contain frescoes by Giotto and Mantegna. Padua has manufactures and a trade in agricultural produce. Pop. 125,159.



Paestum. Temple of Neptune, an example at 6th century B.C. Greek architecture

PAESTUM. Ancient city of Italy. It stands on the Gulf of Salerno, 24 m. by rly. from the city of Salerno. Founded by Greeks from Sybaris about 600 B.C., and originally called Poseidonia, it became a Roman colony in 273 B.C. There are remains of three Greek Doric temples: the Temple of Neptune, 197 ft. long, 80 ft. wide; the so-called Basilica, and the Temple of Ceres. All three probably belong to the 6th century B.C. The city was surrounded by a wall partly preserved, and there are remains of a Roman amphitheatre and temple.

PAGANINI, NICOLÒ (1784-1840). Italian violinist. Born at Genoa, Feb. 18, 1784, he made his first public appearance when nine

years of age. In 1798 he began a wandering career, gaining fame as a violinist of extraordinary powers. In 1828 he extended his tours beyond Italy, visiting Vienna, Berlin, Paris, and England. He died at Nice, May 27, 1840. He composed many pieces for the violin, including some caprices which have been arranged for the piano by both Schumann and Liszt.

PAGE. In feudal times, a youth of gentle birth in training for esquireship and knighthood, who acted as assistant to an esquire in attendance on a knight and his lady.

PAGE, WALTER HINES (1855-1918). American diplomatist and editor. He was born at Cary, North Carolina, Aug. 15, 1855. In



W.H. Page, American diplomatist
Elliot & Fry

1890 he took control of The Forum, after which he edited in succession The Atlantic Monthly and The World's Work. In 1899 he became a member of the publishing house of Doubleday, Page & Co. In 1913 Page was appointed ambassador to Great Britain, and he was in London during the whole of the war period, showing in many ways, not least in his letters to Wilson, his sympathy with the cause of the Allies. He resigned in Aug., 1918, and died Dec. 22, 1918. Consult *Life and Letters of W. H. Page*, edited by B. J. Hendrick (3 vols.), 1922-25.

PAGET. Famous English family. Its first prominent member was William Paget, an official of the city of London, who lived about 1500. His eldest son, William Paget (1506-63), was a secretary of state. He was also a high official under Edward VI and Mary, and was created a baron in 1549. He obtained a good deal of wealth, including Beaudesert, Staffs, still the seat of the Pagets. A descendant, Henry Paget, was made an earl in 1784, and in 1815 the 2nd earl was made marquess of Anglesey (q.v.).

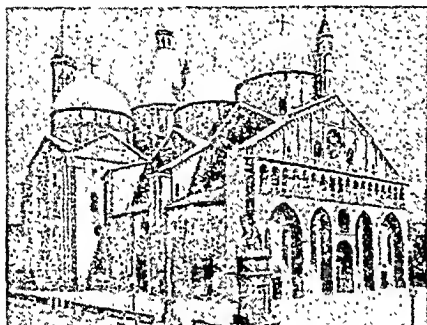
PAGET, SIR JAMES (1814-99). British surgeon. Born at Yarmouth, Jan. 11, 1814, he became a student at S. Bartholomew's Hospital, London, 1834, and demonstrator in the hospital 1839. He rapidly became famous as a pathologist and surgeon, his lectures, 1847-52, as professor of anatomy at the College of Surgeons, afterwards published in book form, being a standard text-book for many years. In 1871 he was made a baronet, and in 1875 president of the Royal College of Surgeons. He died Dec. 30, 1899. Of his sons, Francis (1851-1911) was bishop of Oxford and Henry Luke bishop of Chester.

PAGODA. Term in European use denoting a tower-like structure in India and E. Asia. A 16th century Portuguese corruption either of dagoba, a stupa or tope, or of Pers. but-kadah, an idol-temple, it designates in India temples with pyramidal towers. In Burma it denotes the Buddhist paya or sedi, a bell-shaped structure with conical final, often gilded. See illus. under Mandala.

PAGODA TREE (*Sophora japonica*). Tree of the order Leguminosae, a native of China and Japan. The long bluish-green leaves are divided into about a dozen oval leaflets, and the small cream-coloured flowers are lavishly produced in large clusters. The Chinese obtain from the flowers a fine yellow dye.



Pagoda Tree. Leaves and flower sprays



Padua, Italy. Thirteenth century church of Sant' Antonio and statue of Gattamelata by Donatello

Britain and Japan bound themselves to maintain the existing position as regards the provision of naval bases and the fortification of strategic positions.

PACIFIC FLIGHT. In June, 1928, Captain C. Kingsford-Smith, in the Southern Cross, flew from Oakland, California, to Brisbane, covering the 7,300 miles in three stages. The Australian Government granted him £5,000.

PACTOLUS. Brook in Lydia, famous for the gold found in its sands in classical times. It is believed to be the modern Sarabat, rising in the Boz Dagh.

PADDINGTON. Met. bor. of the co. of London. Between Marylebone and Kensington, it is intersected by the Harrow Road and a branch of the Grand Union Canal, and includes the terminus of the G.W.R., completed 1856, and the dists. of Maida Vale, Tyburnia, and Bayswater, with the busy shopping centre of Westbourne Grove. In addition to the town hall, enlarged in 1906, the bor. contains S. Mary's Hospital, founded in 1845, and a technical institute. In the churchyard of S. Mary's, Paddington Green, are the graves of Sarah Siddons, Benjamin Haydon, and Joseph Nollekens. A notable open space is the recreation ground of 27 acres at Kilburn Park. Two members are returned to Parliament. Pop. 146,700. See London.

Another Paddington is a suburb of Sydney, N.S. Wales. It has an imposing town hall.

PADDY. Rice in the husk. Paddy is the form used throughout the East, but in America it becomes baddy. Fields of growing rice, and also very low-lying fields, are called paddy fields. See Rice.

PAHANG. One of the Federated Malay States, now a British possession. With a long coast on the China Sea, it lies between Johore on the S. and Kelantan and Trengganu on the N., and is separated from the other three states of the Federation by mts. It consists almost entirely of the basin of the Pahang. In 1881 it became a British protectorate. Pekan, at the mouth of the Pahang, is the seat of the sultan; Kuala Lipis is the administrative capital. Its area is 14,000 sq. m. Pop. 146,064. See *Malaya*.

PAIGNTON. Urban dist. and watering place of Devonshire. It stands on Tor Bay, 2 m. from Torquay, with a station on the G.W. Rly. The chief building is the Perpendicular church of S. John, with interesting features. The Bible Tower is part of the old palace of the bishops of Exeter. Pop. 18,000.

PAIN, BARRY ERIC ODELL (1864-1928). British author. Born Oct. 22, 1864, he turned early to literary work, and became known as a writer of humorous stories and novels. In a Canadian Canoe appeared in 1891, and subsequent works include *Stories and Interludes*, 1892, *The Kindness of the Celestial*, 1894, *Eliza*, 1900, *Memoirs of Constantine Dix*, 1905, *Wilhelmina* in London, 1906, *Eliza Getting On*, 1911, *Exit Eliza*, 1912, and *Innocent Amusements*, 1918. His *Collected Tales* were published in 1916; he wrote *The Short Story*, a study in literary craftsmanship, in 1915. Barry Pain died May 5, 1928.

PAINE, THOMAS (1737-1809). British author. Born at Thetford, Norfolk, Jan. 29, 1737, he emigrated to America. Settling in Philadelphia, he issued in 1776 a pamphlet entitled *Common Sense*, putting the case for independence which Washington admitted to have had great influence on the colonists. In 1787 Paine returned to England and issued *The Rights of Man* as a counterblast to Burke's *Reflections on the French Revolution*. The work made a great sensation, and Paine was indicted in 1792, but escaped to France. There he was at first a popular hero, but later he was put in prison, where he remained for nearly a year. The first part of *The Age of Reason* had been finished just before his arrest, and the second part followed in 1795. The book was an attack upon revealed religion. Paine died in New York, June 8, 1809.



Thomas Paine,
British author
After Homney

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PAINLEVÉ, PAUL (b. 1863). French politician. He became professor of science at Lille in 1886, and at the Sorbonne seven years later. He was minister of public instruction and inventions, 1915, minister of war, March-Sept., 1917, and prime minister, Sept.-Nov., 1917. He was criticised for the failure of the French offensive of April, 1917, which Nivelle's supporters maintained was due to the interference of the cabinet with military plans. In April, 1925, he again became for a short time prime minister, and in 1926-30 was minister of war.



Paul Painlevé,
French politician

PAINTED LADY (*Pyrausta nardui*). British butterfly of the family Nymphalidae. It has tawny-orange wings heavily blotched with black and spotted with white. The caterpillar is grey-green or blackish, protected by short, branched spines; it feeds upon various plants, chiefly thistles. In some years it is exceedingly abundant, owing to great migrations, probably from N. Africa, whence it swarms to many parts of the world.

PAINTING. Prehistoric and antique paintings were done with coloured earths. In ancient Egypt and Greece the colours were mixed with water and fixed with gum. But the craft of painting as we know it began with the early Italians, who drew an outline on a wall covered with fresh plaster and filled it in while wet with water colour in flat coats. This was fresco. They used also tempera.

The desire to show form in depth by means of light and dark came with the renaissance. Masaccio was the pioneer of this development; then perspective was created by Uccello (1397-1475), and the foreshortening of figures by Mantegna. Leonardo completed the break away from the old limitations of Italian flat painting.

Oil painting originated with the Van Eycks in Flanders, but their secret died with them, and the process used in Italy down to Perugino was transparent oil colour imposed upon solidly painted tempera. Perugino, Verrocchio, Leonardo and others adopted the new process in Florence, and Venetians, such as Tintoretto and Veronese, embraced it with enthusiasm. The Florentines, following the Flemings, painted a solid oil impasto over a monochrome on a white ground, while the Venetians added a glaze of transparent oil colour. Florentine art decayed during the 16th century, but a vigorous school had developed at Naples and in Germany, and during this century and the next great advances were made in Flanders, Spain, Holland, and Venice. The 18th century produced Watteau, Chardin, and Fragonard in France, Hogarth, Reynolds, and Gainsborough in England.

Landscape and subject painting, heralded by Claude Lorrain and the Dutch masters in the 17th century, developed strikingly in the 19th in the romantic and impressionist schools. Post-impressionism, cubism, futurism, vorticism, and expressionism are terms that describe developments of modern painting.

Below is given a list of the principal schools, with their dates and representative artists.

ITALIAN, 12th to 18th CENTURY. *Byzantine School*, 9-12 cent.: Margaritone, Cimabue. *Siena*, 14 cent.: Duccio. *Florence*, 14-15 cent.: Giotto, Fra Angelico, Filippo Lippi, Filippino Lippi, Botticelli, Uccello, Masaccio, Michelangelo. *Venice*, 15-18 cent.: Carpaccio, the Bellini, Titian, Giorgione, Tintoretto, Veronese, Guardi, Canaletto, Tiepolo. *Milan*, 15 cent.: Leonardo da Vinci, Luini. *Rome*, 15-18 cent.: Raphael, Perugino, Romano. *Naples*, 16 cent.: Salvator Rosa, Caravaggio. *Bologna*, 16-18 cent.: Francia, the Caracci. *Reni*, *Padua*, 14-15 cent.: Squarcione, Mantegna. *Genoa*, 15-17 cent.: Paggi, Strozzi. *Ferrara*, 15-17 cent.: Dossi, Costa. *Parma*, 15-16 cent.: Correggio.

FRENCH, 15th to 20th CENTURY. *Classic School*, 17-19 cent.: Claude Lorrain, Poussin, David, Ingres, Puvion de Chavannes. *Louis Quinze and Louis Seize*, 18 cent.: Watteau, Fragonard, Boucher, Greuze, Chardin. *Romantic School*, including Fontainebleau Group, 19 cent.: Delacroix, Delacroix, Millet, Corot, Diaz, Roussau, Monticelli. *Realist School*, 19 cent.: Courbet, Bastien-Lepage, Constant, Donnay, Duran. *Impressionist School*, 19 cent.: Manet, Monet, Degas, Sisley, Renoir, Morisot. *Post-Impressionist School*: Cézanne, Matisse.

GERMAN, 14th to 17th CENTURY. *Cologne*, 14-15 cent.: Meister Wilhelm, Lochner. *School of Scharia (Cologne, Ulm, Augsburg)*, 15-16 cent.: Schongauer, Holbein the Elder, Holbein the Younger. *Nuremberg*, 15-16 cent.: Albrecht Dürer.

SPANISH, Madrid, 16-19 cent.: El Greco, Velazquez, del Mazo, Pareja, Carreño, Coello, Goya, Fortuny. *Seville*, 16-18 cent.: Fernandez, Vargas, Herrera, Cano, Murillo, Valdes, Leal.

DUTCH, 17th CENTURY. Rembrandt, Goyen, Hobbema, Ruissdael, Potter, van der Velde, Cuyp, Hals. *The "Little Masters"*, 17 cent.: Dou, Vermeer, de Hooch, Terburg, Steen, Brouwer.

FLEMISH, 14th to 17th CENTURY. Hubert and Jan van Eyck, Memling, van der Weyden, Massys, Mabuse, Rubens, Van Dyck.

ENGLISH, 17th to 20th CENTURY. *Portraitists*, 17 cent.: Lely, Kneller. *Portraitists*, 18 cent.: Reynolds, Gainsborough, Romney, Lawrence. *Subject and Landscape Painters*, 18-19 cent.: Hogarth, Morland, Crome, Turner, Constable, Cotman, Watts, Millais, Leighton. *Pre-Raphaelite School*, 1849-c. 1900: Hunt, Rossetti, Burne-Jones. *Modern Painters*: Whistler, Sargent, Brangwyn, John.

SCOTTISH, 18th to 20th CENTURY. *Portraitists and Subject Painters*, 18 and 19 cent.: Raeburn, Wilkie, Orchardson, Pettie. *Landscape Painter*, 19 cent.: McTaggart. *Modern Painters*: Guthrie, Lavery, etc.

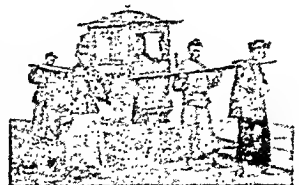
PAISLEY. Burgh of Renfrewshire, Scotland. It stands on the White Cart, near its union with the Clyde, and is served by the L.M.S. Rly., being 7 m. from Glasgow. The abbey church dates mainly from the 15th century. In 1928 it was opened after extensive restoration work carried on intermittently since 1862. It contains Stewart tombs.

The chief industry is the manufacture of thread, here being the mills of the firm of Coats. Other manufactures include carpets, chemicals, starch, soap, and preserves. Shipbuilding is carried on and there are engineering works. About 1700 Paisley began to be a manufacturing centre, the famous shawls being made here; but it was the introduction of the cotton thread industry about 1810 that began its modern prosperity. Pop. 84,837.

PALACIO VALDES, ARMANDO (b. 1853). Spanish novelist. He was born at Entralgo, in Asturias, Oct. 4, 1853, and became editor of the *Revista Europea*, in which his first essays appeared. His first novel, *El Señorito Octavio*, 1881, was followed by *Marta y Maria*, 1883, and by others, of which the most notable were *Riverita*, 1886; *El Cuarto Poder* (The Fourth Power, a novel of journalistic life), 1888; and *La Espuma* (Froth), 1892. Later work included *La Aldea Perdida*, 1902. *Papeles del Doctor Angélico*, 1911; *La Novela de un Novelista*, 1922; and *Los Carmenes de Granada*, 1928.

PALAEOGRAPHY (Gr. palaios, ancient; graphein, to write). Study of ancient handwriting. It concentrates upon the forms of writing in inscriptions on plant materials, such as papyrus, vellum, and paper. In the case of undated MSS., palaeography is often able to decide problems of date by considerations of style. It is also of decisive importance in determining the genuineness of documents. Ancient MSS., mostly in the form of rolls, tablets, or books, sometimes occur on leaves, bark, linen, potsherds, and wood boards. The writing implements were pointed, split, or frayed reeds, stiles and quills, the hairbrush being of Chinese invention. The scripts tend to become running or cursive hands. See *Codex*; *Writing*.

PALAEOLITHIC. Term introduced by Sir John Lubbock, afterwards Lord Avebury, to denote the older phase of the prehistoric stone-aged civilization which preceded the use of metals. This phase was itself preceded by the colithic, characterised by the production of still cruder stone implements called coliths, and was followed by the neolithic age. The palaeolithic age has been divided into six consecutive periods: Lower: Chellian, Acheulian, Mousterian. Upper: Aurignacian, Magdalenian. Each is marked by characteristic types of flint working, and by an advancing growth of material achievement, fine art, and social organization. See *Anthropology*; *Man*; *Stone Age*.



Palanquin of the type which is in common use in China

PALANQUIN or **PALKI** (Skt. paryanka, a bed). Eastern conveyance for one person, in the form of a litter, borne on the shoulders of two or more, generally four men, by means of poles passed through rings at each end. Originally open, it is now an enclosed box, with sliding panels or latticed shutters.

PALATE. Roof of the mouth, separating the cavity of the nose from the mouth. It consists of the hard palate in front, formed mainly by the two palate bones, and the soft

palate behind, consisting of muscular tissues between two layers of mucous membrane. It is prolonged into a pointed structure, the uvula, which hangs downwards and can be seen at the back

PALATINE (Lat. palatium palace). Literally, someone belonging to the palace, and so a servant of the ruler. In the Roman Empire the name was given to certain officials with special duties, and in France and Germany counts palatine appeared about the 8th century. The districts over which they ruled were called palatinates, the most important of which was the one that grew into the Palatinate of the Rhine.

In England the earls of certain counties, generally those on the borders, such as Durham and Cheshire, were given special privileges, and the counties were counties palatine.

PALATINE HILL (anc. Mons Palatinus). One of the seven hills of Rome (q.v.). The name is derived from Pales, the goddess of shepherds, who was worshipped here. In republican times the hill was a residential quarter. Augustus and Tiberius had palaces there, and Nero's Golden House extended from the Palatine to the Esquiline.

PALE. In heraldry, a broad band, placed vertically, and occupying a third of the shield. Pale is one of the ordinaries. If a shield is divided down the middle by a vertical line it is said to be per pale. A row of charges placed one above the other are described as in pale. See Heraldry; Ordinary

PALE (Lat. palus, stake). Term applied to that part of Ireland, in Dublin, Kildare, Meath, and Louth, where English law prevailed, as opposed to the Celtic portion.

PALEMBANG. Town, river, and residency of Sumatra. The town is 54 m. from the sea in the S.E. of the island. below the town

the river, also called the Musi, flows through an extensive area of marshland. The chief commercial centre of the island, it trades chiefly in coffee and pepper. There is a fine mosque (1740). Pop. 62,438.

The residency, which has been a Dutch possession since 1825, has an area of 33,173 sq. m. and a pop. of 872,552.

PALENQUE. Ancient city of Mexico. One of the centres of Maya civilization its ruins are near the village of Santo Domingo del Palenque in the state of Chiapas. Of the buildings the largest is called the palace; and the others were presumably temples. Of the palace the remains of the tower are notable. More remarkable, perhaps, are the bas-reliefs. Another object of considerable interest is an arched waterway, nearly 600 ft. long. See Maya; Mexico.

PALERMO. Seaport of Italy, capital of Sicily. On the N. coast of the island on the W. of the Bay of Palermo, it is backed by an amphitheatre of mountains. The town is built in a quadrangle, with the E. side on the sea. The cathedral was built in the 12th century. The palace contains the Cappella Palatina, built by King Roger II in 1143, and reputed to be the most beautiful palace chapel in the world (see illus. page 332). The churches of San Salvatore, San Giovanni degli Eremiti, La Martorana, and San Domenico, the 16th century archbishop's palace, the university and the national museum are notable buildings. Pop. 447,335.

The Palermo Stone is an inscribed black granite slab in the Palermo museum. Erected in Lower Egypt during the Vth or VIth dynasty, it is engraved with linear hieroglyphs, of which the beginning and end of each line have disappeared.

PALESTINE. Country of Asia. The boundaries of the region called Palestine have varied greatly at different periods. Palestine under British mandate extends from the Mediterranean on the W. to Transjordan on the E., and from Syria on the N. to Egypt and Hejaz on the S. Jerusalem is the chief town, others including Jaffa, Tel Aviv, Haifa, Acre, Gaza, and Nablus. The area is about 10,000 sq. m. Pop. 816,064, including 572,443 Moslems, 154,330 Jews, and 80,225 Christians.

After having been under the rule of Egypt for several centuries, about 1100 B.C. Palestine fell to the Philistines, from whom the land takes its name. The Hebrews fused with the Canaanites, drove out the Philistines, and under David Palestine enjoyed great prosperity. From the 9th to the 6th century B.C., Assyria and Babylonia continually won and lost and re-won the control of Palestine.

From the 6th century to the 4th, Persia took command of the provinces of Babylon, including Palestine, and set the exiles in Babylon free to go back and rebuild Jerusalem. Alexander the Great overcame the Persian empire (333 B.C. onwards), and after his death and the division of his empire Palestine fell to Egypt and the dynasty of the Ptolemies, who fought the Seleucids across the prostrate body of Palestine. As these powers were enfeebled by the blows of Rome, the Jews rose in revolt. The Maccabean family led them, 168 B.C., and the Jews won complete freedom in 143 B.C.

In A.D. 70 Jerusalem was practically destroyed after a long siege, and through six centuries the Roman Empire held Palestine with

a gradually relaxing grasp. In A.D. 635 the fall of Damascus yielded Palestine to Mahomedan rule. From the 7th till the 11th century Palestine was ruled by the Caliphs; and in the 11th century the Turks became gradually dominant. The period of the Crusades, 12th-13th centuries, ended in leaving the Turkish power still dominant over Palestine. A new terror swept down from the N. in the 13th century, in the shape of the Tartars, and the Mameluke or Tartar sultans ruled till the Ottoman Turks, in the 16th century, gained the upper hand and ruled Palestine continuously thereafter until they were defeated and dispossessed in 1918.

The present administration by Britain, under a mandate granted by the League of Nations, is exercised by a high commissioner. In 1922 a new constitution was given. This provides for a legislative council of 22 members, 12 being elected. The Jews have an elected assembly which represents them in their dealings with the administration.

The Palestine Exploration Fund, a British archaeological organization, was founded in London, 1864. It has a Palestine museum and library at its headquarters, 2, Hinde Street, Manchester Square, London, W.1. See Archaeology.

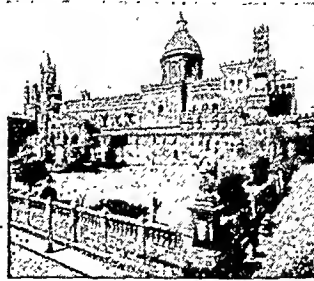
CONQUEST OF PALESTINE. British campaign in the Great War. After defeating Turkish attacks on the Suez Canal, 1915-16, the British decided to invade Palestine. Rafa was taken Jan. 9, 1917, and the two battles of Gaza fought Mar. 26-27, and April 19. There was then a pause while Allenby made his plans.

Beersheba was captured on Oct. 31. Gaza on Nov. 7. Pushing N., he took Ascalon, Ashdod, and Gath, and on Nov. 13 won a considerable victory at El Mughhar. On Dec. 6 Hebron was occupied, and by nightfall, Dec. 8, the British were within 1½ m. of the Holy City, which surrendered on the next day. During the early months of 1918 there was considerable fighting, Jericho being occupied on Feb. 21, and Tel Asur in the following month. The great final offensive began on the night of Sept. 18-19, and lasted until the 24th. W. of the Jordan the enemy was forced to retreat, and by the 29th the British and their Arab allies were advancing on Damascus. See Allenby; Gaza; Hejaz; Jerusalem.

PALESTRINA. City of Italy. It is 23 m. from Rome and occupies the site of the Roman Praeneste (q.v.). The modern town is built on the ruins of a vast temple of Fortuna, which graced the Roman city. The buildings include a modern cathedral. Pop. 7,427.

PALESTRINA, GIOVANNI PIERLUIGI DA (1524-94). Italian composer. Born at Palestrina, he was canon and organist there from 1544-51, when he was made master of music at the Vatican. On the accession of Paul IV, in 1555, he lost his post, but soon filled a similar one at St John Lateran. In 1571 he returned to the Vatican, and remained there until his death which took place Feb. 2, 1594. Palestrina's famous Masses represent the most perfect type for vocal music in the modal style.

PALEY, WILLIAM (1743-1805). British theologian. Born at Peterborough, the son of a schoolmaster, he took a living in Westmorland in 1776; in 1782 he was made archdeacon of



Palermo. The Pizzis del Duomo and the 12th century cathedral



Palestine. Map of the country, administered by Britain since 1920, under the League of Nations mandate



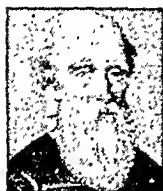
William Paley, British theologian

Carlisle, and later rector of Bishop Wearmouth. He died at Lincoln, May 25, 1805, and was buried in Carlisle Cathedral. Paley's writings include *Principles of Moral and Political Philosophy*, 1785; *Popular Evidences of Christianity*, 1794; and *Natural Theology*, 1802.

PALI (canon). One of the oldest popular dialects of India. The Pali characters are akin to those of Sanskrit, from which it is derived. Its extensive literature includes *Tipitaka* (the three baskets), the Buddhist scriptures; the commentaries on them; the Questions of Menander, a religious discussion with a Bactrian king, and two chronicles of Ceylon.

PALINURUS. In classical legend, the steersman of the ship of Aeneas. The promontory of Palinurus, now Cape Spartivento, on the coast of Lucania, in Italy, is said in the Aeneid to have been named from this hero, who there fell into the sea.

PALISSY, BERNARD (c. 1510-89). French potter. Born in S.W. France, he was brought up to his father's trade of glass painting. At Saintonge he began experiments which, after 16 years of effort, resulted, in 1557, in his perfecting the process of coloured enamel ware which bears his name. In 1564-65 he set up his workshop in the Tuileries, Paris. He died while imprisoned in the Bastille.



Bernard Palissy,
French potter

PALK STRAIT. Channel between Ceylon and the mainland of India. It lies N. of Adam's Bridge, which separates it from the gulf of Manaar. It is named after Robert Palk, governor of Madras, 1755-63.

PALLADIAN. Style of classical architecture associated with Andrea Palladio (1518-80), an Italian architect. It was invented to meet the special demands of Venetian patrons. In real Palladian buildings, such as the Palazzo Thiene at Vicenza, a favourite device is the use of two orders of columns or pilasters, the minor order being used to support the arches which occurred between the major.

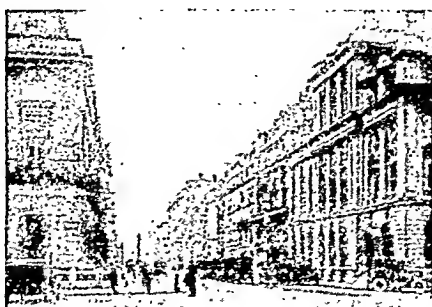
PALLADIUM. In Greek legend, a statue of Pallas Athena, which fell from heaven, and was kept in the city of Troy, which could not be taken so long as this statue was there. Shortly before the fall of Troy it was abstracted by Odysseus and Diomedes, who entered the city in disguise.

PALLADIUM. Rare elementary metal belonging to the platinum group. Its chemical symbol is Pd, atomic weight, 106.7; atomic number 46; specific gravity, 11.40; and melting point, 1,500° C. White in colour, with a strong lustre, resembling platinum, it is malleable and ductile, can be readily welded, and approaches steel in hardness. It is the most fusible of the platinum group. Its chief source is the nickeliferous ores of Ontario. Because of its great resistance to corrosion and its hardness it is used for certain parts of the mechanism of chronometers and for chemical and surgical appliances.

PALLAS. One of the minor planets or asteroids. It is remarkable for its great inclination of 34 degrees to the ecliptic. The second to be discovered, it was found on March 28, 1802, by Olbers (1758-1840). See *Asteroid*.

Pallas. In Greek mythology, epithet of, and later name for, the goddess Athena (q.v.). One of the Titans was also called Pallas.

PALL MALL. London thoroughfare. It runs W. from the junction of Cockspur Street and Pall Mall East, to St. James's Palace. Originally formed about 1690, it was at first called Catherine Street. The game of pall mall, from which it takes its name, was introduced into England in the reign of Charles I. It was



Pall Mall, London, looking west from Waterloo Place. On the left is the Athenaeum Club

a combination of croquet and golf, boxwood balls being driven by mallets through iron hoops set in an alley floored with powdered cockle shells.

PALM (Palmae). Natural order of trees, natives of tropical and sub-tropical regions. There are about 1,100 known species, distributed in 128 genera, many familiar from their economic importance—e.g. coconut, oil palm, date, betel, wine palm, etc. There is only one European species (*Chamaerops humilis*), which is found in the Mediterranean region. The flowers are produced in a great branching cluster, usually from the axils of the leaves. In some species male and female flowers are produced by the same tree, in others the sexes are in separate trees.

Sugary fluid or starch is furnished by the stems of some species. The leaves are utilised for thatching, basket-making, mats, and hats, and the fibres of the leaf-sheaths are of considerable economic importance.

Palm oil, extracted from the fruit of several species, is largely used in the manufacture of candles and soap.

Many species are grown in greenhouses as foliage plants, mostly in a juvenile condition. See *Bactris*; *Coconut Palm*; *Date Palm*; *Doom Palm*; *Fan Palm*; etc.

PALMA VECCHIO (c. 1480-1528). Name by which Giacomo Negretti or Palma, Italian painter, is generally known. Born near Bergamo, he probably studied under Cima at Venice, where he continued to work, and where he died, July 28, 1528. Examples of his work are best seen in Venice, Dresden, and Vienna. He is called Vecchio (old) to distinguish him from his grand-nephew Jacopo (1544-1628).

PALMERSTON, HENRY JOHN TEMPLE, 3RD VISCOUNT (1784-1865). British statesman. Born Oct. 20, 1784, at Broadlands, Hampshire, he belonged to an Irish branch of the family. He succeeded in 1802 to the title, an Irish one, and in 1807 entered the House of Commons as M.P. for Newtown, Isle of Wight.

At once he was appointed a lord of the admiralty, and from 1809-28 he was secretary at war. A Tory, he served under Perceval,

Liverpool, and their successors, but after Canning's death he gravitated towards the Whigs. In 1830 he was made foreign secretary under Lord Grey, and he was at the foreign office with the Whigs until 1841. He was home secretary 1853-55, when he became prime minister. He left office in 1858, but in 1859 he was again in power, and he remained prime minister until his death, Oct. 18, 1865. From 1811-31 he had represented the university of Cambridge, and from 1831-65 the borough of Tiverton. Palmerston was notable for his vigorous and even aggressive assertion of, and devotion to, Britain's interests.

PALMERSTON NORTH. Town of North Island, New Zealand, 88 m. from Wellington. It is a rly. junction. The industries of the neighbourhood are saw-milling and dairy-farming, and it has an experimental farm. Pop. 21,280

PALMISTRY. Science of hand reading, also called cheiromancy. The fingers are named Jupiter, Saturn, Apollo, and Mercury, and the fleshy pads at the base of the fingers are called mounts, and take their names from the fingers under which they occur. The principal lines on the palm are named life line, head line, heart line, fate line, and line of Apollo, the last-named dealing with the gain or loss of riches, etc.

The right hand tells why success or failure has come, the use or abuse of one's talents, the development of character, and what may be expected in the future. The left hand shows inherited gifts and tendencies, the illnesses, accidents, and events that are passed.

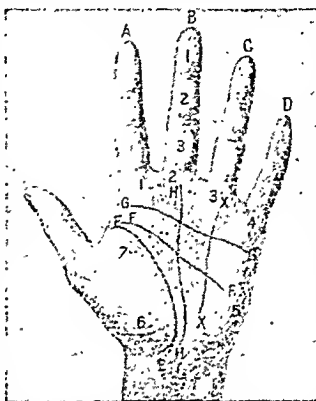
The mounts deal with the character and denote courage, imagination, pride, benevolence, love of art, etc., which are present or absent according to the size and placing of the various mounts.

PALMITE RUSH (*Prionium palmita*).

Perennial plant of the order Juncaceae. It is a native of S. Africa, growing in swamps and rivers, frequently choking the latter. Unlike other rushes, it forms a trunk-like stem 5 ft. to 10 ft. long, which is partly submerged. From the top springs a cluster of sword-shaped leaves, which are an inch broad at the base. The greenish-yellow, rush-like flowers rise from the centre of the leaf-tuft in a cluster which may be several feet long.

PALMITIC ACID. One of the fatty acids ($C_{16}H_{32}O_2$). It is obtained in large quantities from palm oil, in which it occurs as palmitin. Palmitic acid occurs also in other vegetable and animal fats.

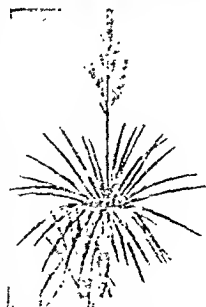
PALM SUNDAY. Sunday before Easter. On this day the Christian churches celebrate Christ's entry into Jerusalem, when the multitude strewed palm leaves and branches, emblems of victory and rejoicing, on the way (John 12). In the R.C. Church it is celebrated by the blessing and distribution of palm or olive branches, and a procession.



Palmistry. Left hand, illustrating principal lines and significant parts. Fingers—A, Jupiter; B, Saturn; C, Apollo; and D, Mercury—have each 3 phalanges, numbered 1, 2, and 3. On the hand: 1, 2, 3, and 4 are mounts of Jupiter, Saturn, Apollo, and Mercury respectively; 5, mount of Luna; 6, mount of Venus; 7, mount of Mars. Principal lines are: EE, Life; FF, Fate; GG, Heart; HH, Head; XX, Apollo



Palma Vecchio,
Italian painter
Self-portrait in Pina-
kothek, Munich

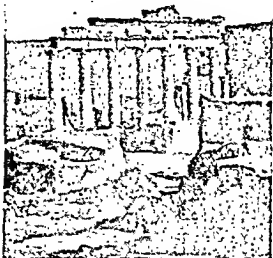


Palmite Rush. Leaf cluster and flower



Lord Palmerston,
British statesman

PALMYRA. City of Syria. It stood about 150 m. N.E. of Damascus. Tadmor, as it was at first called, was founded by Solomon.



Palmyra. Ruins of the ancient city and Temple of the Sun

Under the Roman empire it became a great commercial centre. Surrounded by walls of the age of Justinian, the city is intersected by a street with a quadruple colonnade and a triumphal arch. The ruins include sepulchral towers and a temple.

PALMYRA PALM (*Borassus flabelliformis*) Tree of the order Palmae, native of India. The large three-seeded brown fruits are produced in clusters of 15 or 20. From the unexpaused flower spikes palm wine is obtained in quantity, which is evaporated into jaggery, or palm sugar, fermented into toddy, and distilled to produce arrack. The trunks of old trees yield timber, and the leaves serve a variety of useful purposes. Seedling plants are used as food, and the pulp of the fruit furnishes a kind of jelly.

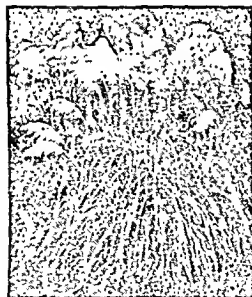


Palmyra Palm, leaves and fruit

PAMIR OR ROOF OF THE WORLD. Mountain knot in the N.W. of India. From it radiate the Kunlun, Karakoram, and Himalaya, Sulaiman, Hindu Kush and Paropamisus, and Tien Shan ranges. It comprises a series of ridges of elevation varying from 16,000 ft. to 18,000 ft., with elevated valleys or pamirs between them.

PAMPAS. Temperate grasslands of S. America. W. of the Paraná river and E. of the Andes. They support vast numbers of cattle and sheep, and produce enormous quantities of wheat for export. See Steppe.

PAMPAS GRASS (*Gyncrium argenteum*). Noble grass of the order Gramineae. It is a native of S. America, where it grows on the pampas. It forms a tuft five or six feet in diameter, its long, slender, arching leaves being about 6 ft. long. The flowers form large, dense, silky, and silvery-white plumes rising to a height of 10 or 12 ft., bearing 40 or 50 plumes.



Pampas Grass. Tuft of the South American grass

PAN. In Greek mythology, the god of shepherds. Generally regarded as the son of Hermes, and especially associated with Arcadia, he had the horns and legs of a goat. He was the inventor of the flute, or shepherd's pipe, which he made from reeds. The sudden apparition of Pan to travellers caused terror, whence the word panic. The name pandean pipes is given to a musical instrument consisting of a row of tubes, stopped at their lower ends and bound together, and blown across their tops by the performer. The number of tubes has varied. See Peter Pan,

PANAMA. Republic of Central America, formerly a dept. of the republic of Colombia. The separation arose in 1903 from the exigencies of the situation regarding the Panama Canal. The constitution, adopted in 1904 and amended in 1918 and 1928, is based upon an elected president and an elected chamber of deputies. The republic is a member of the League of Nations.

The state occupies the narrowest portion of the connecting link between N. and S. America, and lies in a curve E. and W. between the Caribbean Sea to the N. and the Pacific Ocean on the S. The interior is elevated. The people are a mixed race of Spanish, Indian, and negro origin. Panama is the capital. The area is 32,380 sq. m. Pop. 442,522. See Central America.

PANAMA. Capital of the republic of Panama. It is situated within the Canal Zone at the head of the Gulf of Panama, and extends W. and N. from a small peninsula which is entirely within the city. It is the chief Pacific port at the S. end of the Panama Canal and is connected by rly. with Colon at the Atlantic end. It includes the harbour of Balboa (q.v.). It has a fine cathedral and a university. Pop. 59,458.

PANAMA CANAL, THE. Canal through the Isthmus of Panama, connecting the Caribbean Sea and the Pacific Ocean. The isthmus averages 70 m. across, but is 32 m. at its narrowest. The canal was informally opened to commerce in 1914, and formally in 1920.

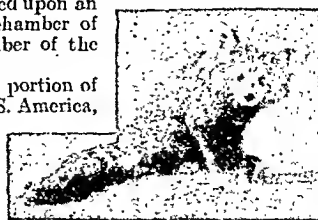
The French attempt to construct a canal under the auspices of the maker of the Suez Canal, Ferdinand de Lesseps, was a failure, owing to financial extravagance and corruption, and also to insanitary conditions at the isthmus. The experiences of the Spanish war had impressed the United States with the necessity of a quicker water communication between their Atlantic and Pacific coasts. In 1904 they acquired the rights and property of the New Panama Company. They also obtained from the republic of Panama a strip of land running across the isthmus, five miles wide, on either side of the proposed waterway, and known as the Canal Zone.

Near the Caribbean outlet of the Chagres river they built a huge earthwork, the Gatun Dam, across the channel of the stream, and another dam about 20 m. S.E. at Gamboa. The waters of the Chagres were allowed to accumulate until a lake was formed, 164 sq. m. in extent and at an alt. of 85 ft. The channel of the canal runs for about 30 m. through the lake, up to the surface of which ships are lifted by locks at either end.

The channel of the canal begins about 4½ m. out to sea in Limon Bay in the Caribbean at a depth of 41 ft. Through the sea and the shore it runs for 8 m. till it reaches the gigantic three-stepped, two-flighted stairway at Gatun. These locks lift the ship on to the surface of the Gatun lake. 20 m. farther on the channel is compressed into the Culebra cut, which runs to the Pedro Miguel lock at the other extremity of the 85-ft.-above-sea-level section. Coming from the Caribbean the vessel drops down this lock by 30 ft. to the Miraflores lake at 55 ft. above sea level, from which the Miraflores

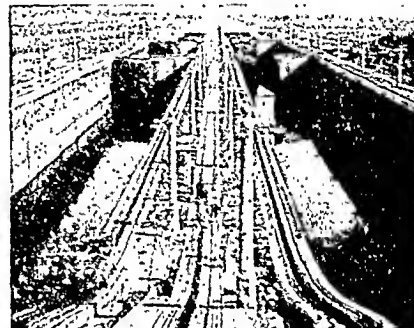
locks in two steps drop it down to the sea-level salt-water stretch of 8 m. on the Pacific side. Its minimum width is 300 ft. at the bottom, and minimum depth 41 ft.

An important result for the British Empire is the change in comparative distances between England and Australasia and New York and Australasia. Henceforth New York, and not Liverpool, is nearer to Yokohama, Sydney, and Melbourne. In 1929 6,413 vessels passed through the canal. See Balboa; Colon; Culebra; Dredging; Lesseps, F.; Lock.



Panda. Small Himalayan cat-bear allied to the racoons. See below W. S. Berridge, F.Z.S.

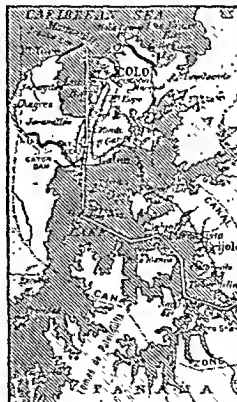
PANCRAS. Patron saint of children. He is said traditionally to have been born at Synnada, in Phrygia, of noble parentage, and to have been taken in childhood to Rome, where he was baptized by the pope. During Diocletian's persecution he was beheaded at the age of 14. Many churches are named after him.



Panama Canal. Section of the mile-long Gatun Locks, looking towards the Atlantic

PANCREAS. Organ situated behind the stomach. About 6 to 8 ins. long, it contains a duct which opens into the second part of the duodenum in contact with the common bile duct. The pancreas secretes a juice which plays an important part in the digestion of food. Scattered throughout the pancreatic substance are little collections of cells which produce the internal secretion known as insulin (q.v.). The pancreas of sheep is called the sweetbread when used as human food.

PANDA OR WAH (*Aelurus fulgens*). Small mammal of the order Carnivora, a native of the Himalayas only. Its total length is about 2½ ft., but somewhat more than half this measurement is due to the bushy tail. Its coat of fur is chestnut-brown above and black beneath. Mainly nocturnal and arboreal in habits, it is found near pine woods. See illus. above.

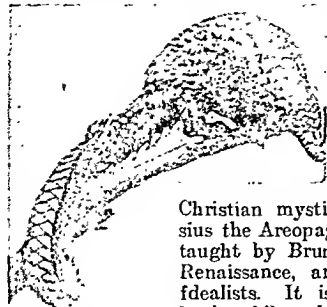


Panama Canal, connecting the Atlantic and Pacific Oceans

PANDORA (Gr. all-gifted). In Greek mythology, the first woman on earth. Pandora became the wife of Epimetheus. In his house was a box which he had been forbidden to open, but Pandora, overcome by curiosity, opened the box, and by this action let out all the evils that afflict mankind. She was able to shut the box, however, in time to prevent the escape of Hope.

PANGBOURNE. Village of Berkshire. It stands on the Thames, 5 m. from Reading. From 2 ft. to 3 ft. long, the Pang here falls into the Thames. Pop. 1,936.

PANGOLIN (Manis). Genus of edentate mammals, occurring in S. Asia and Africa. From 2 ft. to 3 ft. long, the body is somewhat lizard-like in shape, covered, except about the mouth and on the under parts, with large horny scales. The feet bear strong claws. No teeth are present, but there are horny ridges on the lower jaws; the tongue is long and worm-like. The pangolin rolls itself into a ball when disturbed. The Asiatic pangolins, which comprise three species, live in crevices of the rocks and in long burrows. They are strictly nocturnal, and feed on termites. There are four African species, which resemble the Asiatic species.



Pangolin, the African species

PANICK GRASS (Panicum). Large genus of grasses of the order Gramineae, mostly natives of the tropics, a few being widely distributed in temperate regions. The flowers are clustered in spikes or branching sprays. Many are useful fodder grasses, and a few yield food grains. *Panicum miliaceum*, which yields Indian millet, is cultivated in S. Europe. *P. maximum*, of the W. Indies, attains a height of 6 ft. to 10 ft.

PANKHURST, EMMELINE (1858-1928). British feminist. Born in Manchester, daughter of Robert Goulden, she married Dr. R. M. Pankhurst, a barrister, and with him helped to found the Women's Franchise League, 1889. She was a poor law guardian, and member of the school board, Manchester, and on her husband's death, in 1898, was appointed registrar of births, a post she held until 1900. In 1903 she founded the Women's Social and Political Union. When militant methods began Mrs. Pankhurst was several times imprisoned. In 1914 she published *My Own Story*. She died June 14, 1928. A statue to her was unveiled in the Victoria Tower Gardens, Westminster, London, 1930.



Emmeline Pankhurst, British feminist
Elliott & Fry

Two of her daughters, Christabel (b. 1880) and Sylvia (b. 1882), were also prominent in the suffrage agitation.

PANSY (Viola tricolor). Perennial herb of the order Violaceae, a native of Europe, N. Africa, and N. and W. Asia. The leaves in general form are oblong or lance-shaped, variously lobed, and cut. The flowers are purple, whitish, or yellow, or a varied mixture of the three colours. The number of named varieties is enormous, and every year sees additions. The name is generally given to the garden flower, the wild pansy being called heart-case (q.v.). See Violet.



Pansy, common yellow variety

PANTALON (Ital. Pantaloon, a saint popular in Venice). Ridiculous character in Italian comedy. Sometimes he was an old bachelor, but generally he was married to an unfaithful young wife or was the father of troublesome young daughters. Columbine was very often his daughter, and Harlequin was sometimes his lackey. Pantaloon wore

the skin-tight trousers named after him. In modern pantomime he is a butt for the practical jokes of harlequin and clown. See Columbine; Harlequin; Pantomime.

PANTEG OR **PANTEAGUE**. Urban dist. of Monmouthshire. It is 2 m. from Pontypool, on the G.W. Rly. There are iron works and coal mines. Pop. 10,984.

PANTHEISM (Gr. pan, all; theos, god). The doctrine which affirms the unity of the Deity with the world. A fundamental part of much ancient Indian philosophy. Pantheism appears in the Greek Eleatic and Neoplatonic systems, and in many Christian mystics from the so-called Dionysius the Areopagite onwards. Pantheism was taught by Bruno and other Italians of the Renaissance, and by many of the German idealists. It is most completely developed in the philosophy of Spinoza (q.v.).

PANTHEON (Gr. pantheon, belonging to all the gods). Temple in Rome, now a church. It was built by Hadrian between A.D. 120-130. The main structural parts consist of a rotunda and a dome, the total height and diameter of the building amounting to 142 ft. 6 ins. The portico of Corinthian columns supports a massive pediment surmounted by another partially screening the dome, which is constructed of solid concrete and lighted at the summit. The interior is lined with marble. In 609 the Pantheon was consecrated. It contains the tombs of eminent Italians.

The Panthéon, Paris, a building in the Roman style, with a large portico and a dome, was begun in 1764, and has been three times a church, and three times, as now, a temple of honour to great Frenchmen, of whom Voltaire, Rousseau, and Hugo are buried in the crypt.

PANTHER (Felis pardus). Large and ferocious spotted cat. It is a native of Africa, S. Asia, Java, and Japan. About 7 ft. in length, its upper parts are yellow closely spotted with black, paling to white on the under surface. Generally known in India as the panther, in other parts of its distribution it is called leopard (q.v.).

PANTOMIME. Art of acting without words, by gestures and facial expression only. Though practised in ancient Greece, it became more popular in Rome. Facial expression, however, was excluded in those days because of the masks worn by the performers. In the 17th and 18th centuries the word pantomime was applied in France to a kind of mythological ballet which was in great favour in Paris and at Versailles. Nowadays the word is seldom used in English, except in connexion with a form of Christmas entertainment. See Acting; Drama; Drury Lane; Harlequin; Pantaloon.

PAPACY (Lat. papa). Term used for the possessions and dignities which attach to the pope. Traditionally, it dates from 43 A.D., when S. Peter went to Rome and became the city's first bishop. A succession of bishops followed, but for some 300 years their powers were spiritual only.

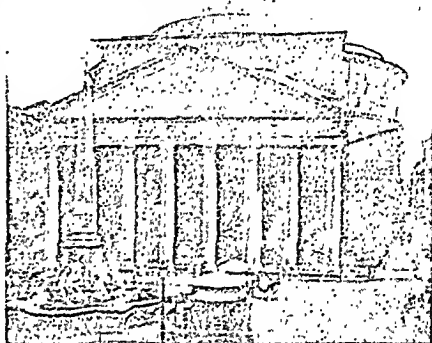
As a temporal power the Papacy may be said to date from early in the 4th century, and two events contributed to the creation of its unique position in Christendom. In 324 Constantine moved his capital from Rome to Constantinople. This left the bishop in a position of importance which would never have been his had the emperor and his successors remained in Rome. The other event was the assertion by the council of Nicaea that the bishop of Rome had authority over other bishops. Leo I made this assertion a reality. Meanwhile land was bequeathed or given to the bishop, or pope, as he began to be called, and soon he ruled an extensive domain.

Thus elevated and enriched, the pope claimed the right to crown kings, and one of them made good this claim by crowning Charlemagne as emperor in 800 and creating the Holy Roman Empire, an event which completed the alliance between church and state begun by Constantine. In this the emperor was at first the dominant partner, but in the 11th century the popes, especially Gregory VII (Hildebrand), asserted that the state was subject to the church, a bold policy that was boldly carried out by successive popes.

The Reformation altered entirely the status of the Papacy. It became simply the Roman Catholic Church reinvigorated by the work of the counter-reformation and reformed by the council of Trent. It remained a temporal power, although its temporalities were confined to Italy until 1870, and again became one, though on a small scale, in 1929. See Pope; Roman Catholic Church; Vatican.



Pantaloon, in English pantomime



Pantheon. Portico of the ancient Roman temple built by Hadrian and now used as a church

PAPAL STATES OR **STATES OF THE CHURCH**. Name given to the Italian territories which were under the temporal sovereignty of the popes. Differing at different periods, they generally formed a solid strip of territory running across Italy.

Throughout the Middle Ages the area of the papal states varied a good deal. Their extent was greatest in the time of Innocent III, about 1300, while from about 1600 to 1860, except during the Napoleonic upheaval, it remained fairly constant. In 1860 some of the states were taken from the pope and added to the new kingdom of Italy, and in 1870 the remainder were absorbed. The pope remained without territorial possessions until 1929, when, by a concordat with Italy, his sovereignty over the Vatican was recognized.

PAPAW (Carica papaya). Small evergreen tree of the order Papayaceae. A native of S. America, it has large, alternate, seven-lobed leaves. The greenish flowers are either male or female, and the two are often on separate trees. The dingy, orange-coloured fruit is an elongated oval nearly a foot long, with fleshy gourd-like rind enclosing small black seeds. It is eaten after being boiled or pickled. It also yields papain.

PAPER. Aqueous deposit of vegetable fibre. Real paper is prepared from fibrous pulp. The art of paper-making originated in the East. Acquired by the Arabs in Tartary,



Papaw tree laden with fruit

it was introduced by the Moors in Spain and brought to Europe proper by the Crusaders. The first English paper mill was built by John Tate at Hertford about 1496. In 1725 De Portal was granted a monopoly of making paper for Bank of England notes, and in 1739 Whatman erected his Maidstone mill. In 1798 Louis Robert, manager of Didot's paper mills at Essones, invented his paper machine. The first Fourdrinier machine, an improvement on this, was erected in Two Waters Mill, Hertford, in 1804. In 1831 a machine was constructed in all essentials like the one in use to-day. In 1861 the duty on paper imported into Great Britain was abolished. Esparto grass, introduced in 1852, came into general use about 1861. It is to the production of ground wood (1840), and to the sulphite process of producing chemical pulp from wood (patented in 1866, by Tilghman of Philadelphia), that we owe our cheap press and the modern newspaper.

PAPER MULBERRY (*Broussonetia papyrifera*). Small tree of the order Urticaceae. A native of China, it has hairy egg-shaped leaves. The greenish flowers have the sexes distinct on separate trees, the males in catkin-like clusters, the females in a round head. The latter are succeeded by scarlet fruits much like a mulberry in shape, but without flavour. The inner bark is beaten into pulp to make paper in China and Japan, and in the South Sea Islands into a kind of cloth.



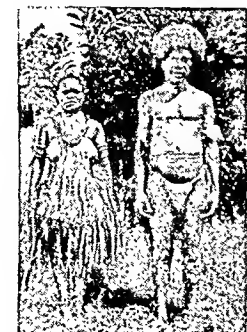
Paper Mulberry. Leaves and flower clusters

PAPINEAU, Louis Joseph (1786-1871). Canadian politician. Born at Montreal, Oct. 7, 1786, he became a lawyer, and in 1808 a member of the house of assembly of Lower Canada. In 1815 he was made Speaker, and in 1820 a member of the executive council. As the leader of the French Canadians, he was prominent in desiring drastic changes in the methods of government, and in opposing the suggested union of the two Canadas.

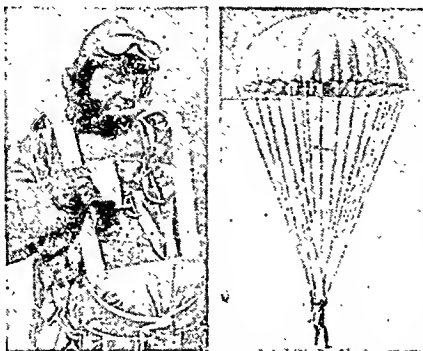
Embittered by failure to carry his reforms, he became actively hostile to the British government, and in 1837 led a rebellion. This failed, and Papineau fled. In 1847 a general amnesty was proclaimed and he returned to Canada. Elected to the legislature, until 1864 he took part in public life. He died Sept. 24, 1871.

PAPUA. British territory in S.E. New Guinea. About 1884 it became a protectorate, and in 1888 a colony. In 1901 financial responsibility and in 1906 complete control passed to the Commonwealth of Australia.

The territory includes the neighbouring islands, Samarai, the Louisiades, the D'Entrecasteaux Group, the Laughlan and Trobriand islands, and Woodlark Island. The chief crops are coconuts, rubber, and sisal hemp. Minerals include copper, gold, tin, lead, and zinc. Port Moresby is the seat of government. The area is



Papua. Native couple, the woman in mourning weeds



Parachute. Left, wearer of R.A.F. pattern pointing to ring which, when pulled, opens the parachute. The equipment is worn at front or rear. Right, airman descending beneath opened parachute

90,540 sq. m., of which about 88,000 are on the mainland. Pop. 1,523 Europeans and some 275,000 Papuans. See New Guinea.

The term Papuan (Malay, mop-headed) denotes aboriginal peoples of negroid stock, mostly in Dutch New Guinea.

The gulf of Papua is a large bay on the S. coast of the island of New Guinea, N.E. of C. York Peninsula, Queensland.

PAPWORTH. Village of Cambridgeshire, 4 m. from Huntingdon. There is a settlement for sufferers from tuberculosis, men and women, and various industries are carried on by those who have passed through the sanatorium.

PAPYRUS (*Cyperus papyrus*). Perennial sedge of the family Cyperaceae, formerly common in the Egyptian delta, and still found on the Upper Nile. It grows also in Syria, Nubia, and Abyssinia. Its smooth, triangular stems, 6 to 10 ft. high, spring from a woody root-stock. At the tip of the stem is borne a compound umbel of drooping spikelets surrounded by an involucre of long, narrow leaves. The name papyrus is applied to the writing material made from the stem, and to a manuscript written on this substance.

The papyrus was cultivated by the ancient Egyptians in prepared pools, and used for a variety of purposes. To make the writing material, moistened strips of stem were laid side by side to form the warp; shorter strips were overlaid crosswise, and the whole was pressed, dried, and polished. Ink, of sepia, animal charcoal, and other substances, was applied with a reed. These materials endured in literary use from the pyramid age, if not before, to the 4th century of our era, surviving casually to 1250.

PARA. Coin in general use in Turkey, Montenegro, Yugoslavia, Cyprus, and Egypt. Usually of copper, but also an alloy of various metals, it is the fortieth part of a piastre. Forty, 20, 10, 5, and 1 para pieces are coined in Turkey. In Yugoslavia the para is the one hundredth part of the dinar, and is equivalent to a centime. Fifty, 20, 10, 5, 2, and 1 para coins are issued. In N. Borneo the para is a weight equivalent to 90 lb. avoirdupois.

PARÁ OR BELEM DO PARÁ. Seaport of Brazil, capital of the state of Pará. It is situated on the Bay of Guajara, a portion of the arm of the Amazon delta known as the Rio Pará. Notable buildings are the cathedral and the La Paz theatre. All merchant ships trading on the Amazon must enter or clear at the port, which exports cacao, Brazil nuts, hides, and rubber. Pop. 236,402.

The Pará rubber tree (*Hevea brasiliensis*) is a tree of the natural order Euphorbiaceae.

A native of Brazil, it has bell-shaped flowers of greenish white and a thin, milky juice. The juice is collected in earthen vessels and barded by exposing it to smoke, when it becomes crude rubber or caoutchouc.

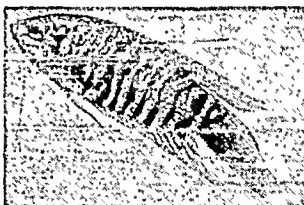
PARACELSUS OR THEOPHRASTUS BOMBAST VON HOHENHEIM (c. 1493-1541). Swiss physician and philosopher. Born at Einsiedeln, the son of a physician, he travelled much, studied alchemy and chemistry and the properties of minerals and metals; and by his successful if empirical application of mineral medicines gave a great impetus to pharmaceutical chemistry. Accused of being a necromancer, he had to flee from Basel, and after an adventurous life died at Salzburg, Sept. 24, 1541. Only a few of the writings attributed to him are regarded as genuine. Paracelsus is the hero of a poem by Browning.

PARACHUTE. Apparatus to reduce the speed of bodies falling through the air. It is an inverted bowl-shaped fabric with suspension ropes at its circumference which meet at a point some distance below the extended fabric. When a parachute is released from a height its vertical movement produces an upward air pressure on the fabric which retards the fall. Some types open automatically; in others a "rip cord" must be pulled to free the apparatus from its envelope.

PARADISE (old Persian pairidaēza, Gr. paradisos, a park or garden). Word used as a synonym for the garden of Eden; a place to which the souls of the righteous are translated after death; and sometimes for heaven. It was used by the apocalyptic writers for the heavenly counterpart of the earthly garden. Modern commentators on the Koran insist that Paradise is not only a place in which to enjoy the blessings and rewards of good deeds on earth, but a starting-point of unending spiritual advancement.

PARADISE FISH. Name given to an artificially modified fish belonging to the genus *Polyacanthus*. Allied to the climbing perch, it is striped with red, gold, and green, has long wavy fins and tail, and is very hardy.

PARAFFIN. In chemistry, term applied to a large class of hydrocarbons. Generally it refers to the solid, crystalline mass obtained from petroleum and from certain coals and shale oils. When pure, paraffin is white with a tinge of blue and highly translucent; hard and wax-like, free from taste or odour, it is used in the manufacture of candles and matches, for waterproofing fabrics, preserving food and wood, and as an insulator in electricity. Ozokerite is a natural impure



Paradise Fish. The artificially modified fish bred in China

paraffin. Paraffin oil is obtained by fractional distillation of shale, the lightest oils from the latter being used as solvents, and the next as paraffin oil, the rest being solid paraffin.

PARAGUAY. River of S. America. It rises in the Sierra Diamante in the Matto Grosso plateau, and flows S. to join the Paraná above Corrientes. Its length is 1,500 m.

PARAGUAY. S. American republic. It is bounded N. by Bolivia and Brazil; E. by Brazil and Argentina; S. by Argentina; W. by Argentina and Bolivia. The area is estimated at 62,000 sq. m. and the pop. at about 830,000. Asunción is the capital, other towns including Villarrica and Concepción. The people are partly of Spanish, partly of Indian (Guaraní) origin. Spanish is the official language. Education is free. There is a university at Asunción. There is a standing army of 2,800 and reserve of 100,000. The legal monetary unit is a gold dollar at five to the £, but the actual currency is paper, which varies in value.

An agricultural and pastoral country of high grassy plateaus and richly timbered forests, Paraguay is both tropical and semi-tropical. Minerals are abundant. The river Paraguay provides a splendid natural waterway from N. to S. The Rio de la Plata places the republic in contact with the outer world. There are some short rlys. Almost the whole foreign trade passes through Buenos Aires, 985 m. from Asunción.

Paraguay was settled by Spain in 1535, and gained its independence in 1811. It is governed by a president, elected for five years, and a small council of ministers. They are responsible to Congress, a parliament of two houses, the senate and the chamber of deputies. There are 20 senators and 40 deputies, all chosen by popular vote. See Argentina; South America.

PARALYSIS. Loss of power to contract muscles or loss of sensation. Functional paralysis is a manifestation of hysteria; organic paralysis is due to disease or destruction of a nerve.

Functional paralysis frequently follows a severe shock, mental or physical, but may also follow an organic injury when it is due to a fixed idea in the mind of the individual that an affected limb is powerless.

Organic paralysis is a symptom of any disease of the nervous system, the result of injury to nerves or nerve centres. The diseases most frequently responsible for organic paralysis are apoplexy, locomotor ataxia, disseminated sclerosis, and anterior poliomyelitis or infantile paralysis.

PARANÁ. River of S. America. It begins at the confluence of the Paranahyba and Rio

Grande, flows S.W. to Posadas, W. until it receives the Paraguay, and then past Corrientes to Rosario, to the Rio de la Plata. Its total length is about 2,500 m.

PARASITE (Gr. *parasitos*, one who eats at another's table, from *para*, beside; *sitos*, food). Name applied to an organism, animal or vegetable, which lives upon or within another organism and nourishes itself at the expense of its host. The parasite may live permanently on or in its host, as in the case of intestinal worms; or it may only visit its host, as in the cases of the flea and mosquito. Animals may be parasites on other animals, as the ticks and flukes; or on plants, as the mistletoe; or on insects and aphids. Plants may be parasitic on other plants, as the scale insects and aphids. Plants may be parasitic on other plants, as the mistletoe; or on animals, as the fungus which produces ring-worm. Most of the bacteria which invade human bodies and cause disease are parasites belonging to the vegetable kingdom. See Malaria.

PARAVANE. Naval invention employed against mines during the Great War. The main credit for its invention is attributed to Commander C. D. Burney, R.N. Its action was to deflect the mine from the side of the ship, cut through its mooring cables, and render it harmless and easy to destroy. The apparatus

consisted of a torpedo-shaped body fitted with hydrovanes, to one of which was attached a float and to the other a weight, and it had a rudder which regulated the depth of flotation by means of a hydrostatic valve. Paravanes were used in pairs, towed one on either side of the ship by wires.

PARÉ, AMBROISE (1510-90). French surgeon. Born near Laval, Mayenne, he wrote on gunshot wounds and anatomy, and was the first to use ligatures for arteries after amputation, his rational treatment earning him the title of Father of modern French surgery. He died in Paris, Dec. 22, 1590.

PAREGORIC. Compound tincture of camphor. It is used as a sedative in conditions associated with irritating cough. It should not be given to children.

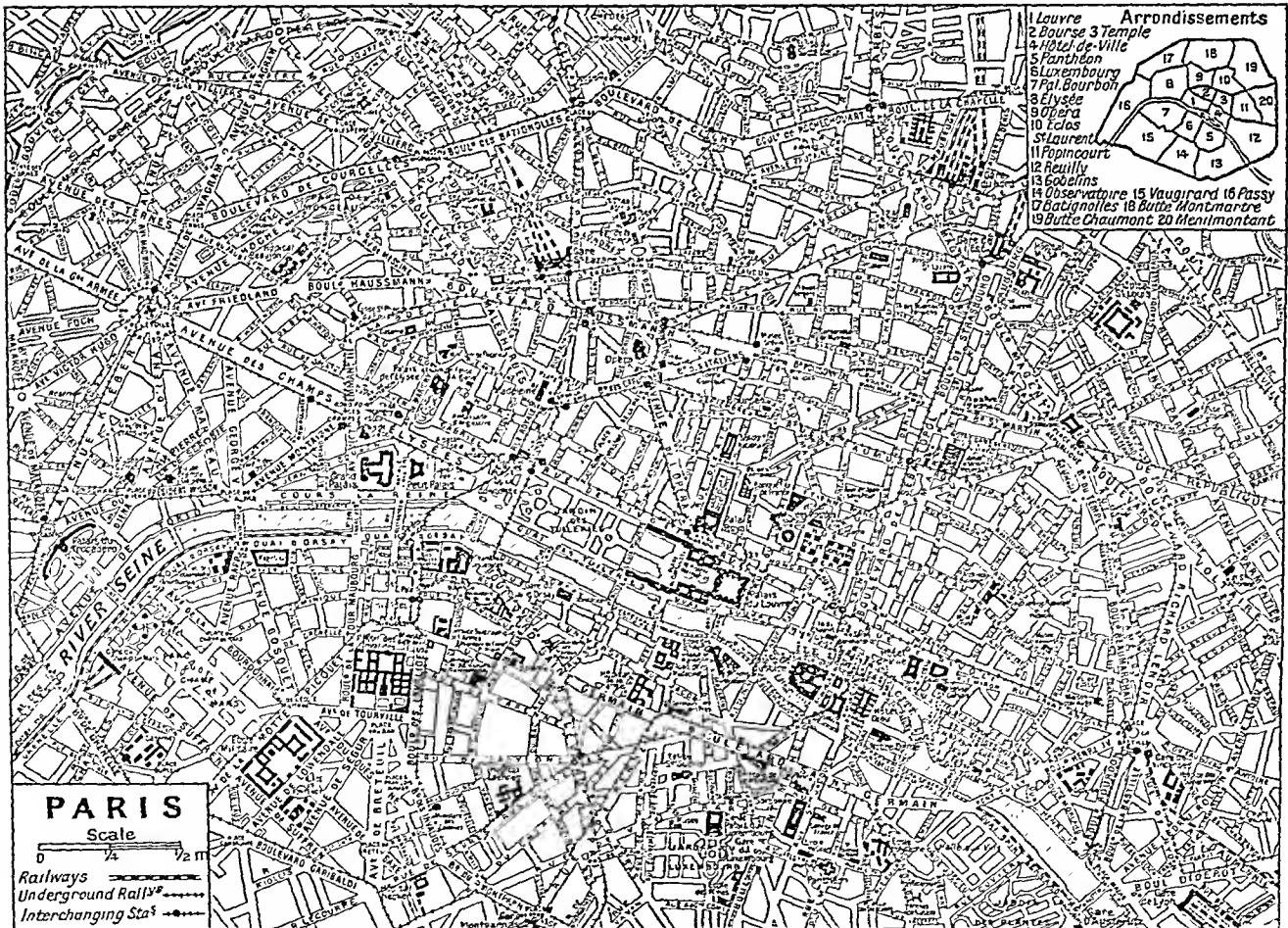
Pari-Mutuel. Method of hacking horses adopted in Great Britain in the form of the totalisator (q.v.). See Betting.

PARIS. In Greek legend, son of Priam and Hecuba. The goddess of strife having thrown a golden apple inscribed "for the fairest" among the guests at the marriage of Peleus and Thetis this was claimed by Hera, Athena, and Aphrodite. Zeus ordered them to submit to the judgement of Paris. Paris gave the apple to Aphrodite, who caused Helen, wife of Menelaus of Sparta, to fall in love with Paris. He carried her off to Troy, and thus provoked the Trojan War.

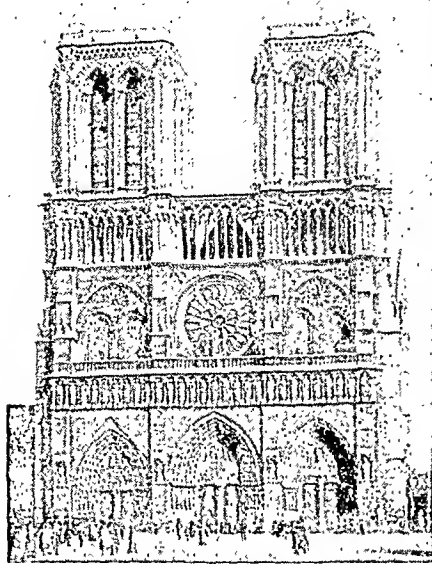
PARIS. Capital of France. Divided by the Seine into two parts, it covers about 30 sq.m. and has a pop. of about 3,000,000. It has developed in some 2,000 years from a cluster of fishermen's huts round the small island called



Paravane, towed from the bows of a liner, about to cut the mooring cable of a mine



Paris. Plan of the central part of the capital of France, showing the principal public buildings and the railway communications



Paris West front of the cathedral of Notre Dame.
It stands on the Ile de la Cité

the Ile de la Cité, is 110 m. in a straight line from the mouth of the Seine, 230 m. counting the windings of the river, and 285 m. by air from Croydon. Intersected by broad, tree-planted boulevards, brightened by noble squares and beautiful gardens, its two parts linked by thirty-two bridges, it is splendidly provided with transport by road and river. The airport is at Le Bourget, 15 m. to the N.E.

On the N. or right bank are the incomparable Louvre, Hôtel de Ville, Palais Royal, Palais d'Élysées, Champs-Élysées, Jardin des Tuileries, Bibliothèque Nationale, Archives Nationales, Halles Centrales (markets), Bourse, Banque de France, Imprimerie Nationale, Théâtre-Français, Opéra, Trocadéro, Madeleine, Musée Carnavalet, Montmartre, Auteuil and Longchamp racecourses, the beautiful Bois de Boulogne, the leading hotels and restaurants, the finest shops and most fashionable residences, and Père Lachaise cemetery.

The more historic S. or left bank covers the site of the original Gallic settlement of Lutetia mentioned by Caesar. Here are the great cathedral of Notre Dame, Saint-Chapelle, Panthéon, Musée de Cluny, the Luxembourg Gallery and Garden, Jardin des Plantes (with Zoological Gardens), the Invalides (with Napoleon's tomb), Palais de Justice and the famous Conciergerie, the Sorbonne, Collège de France and other educational institutions, the historic Quartier Latin, Hôtel des Monnaies (Mint), the Chambre des Députés, chief government buildings, Champ de Mars, Eiffel Tower, Gobelins tapestry factory, Observatoire, and Institut Pasteur.

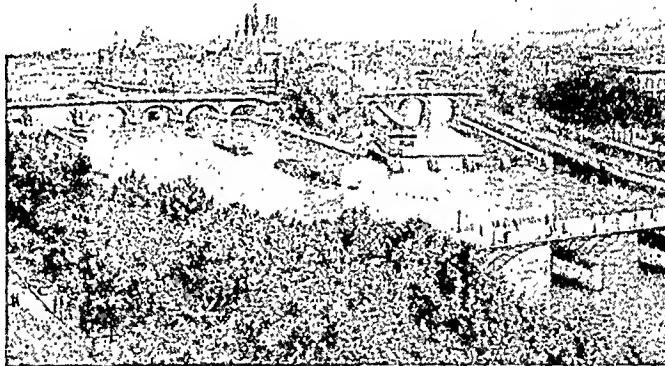
The city is divided into twenty arrondissements, each sub-divided into four quarters, and each with a mayor. There are two prefects and a municipal council. Nearly every form of French industry is carried on. During the 19th century Paris knew war and revolution more than any other great capital. See Bastille; Bois de Boulogne; Comédie Française; Eiffel Tower; Louvre; Luxembourg, etc.

PARIS, LOUIS PHILIPPE ALBERT, COMTE DE (1838-94). French prince. Grandson of Louis Philippe, he was born Aug. 24, 1838, was heir to the throne from 1842-48, when Louis Philippe was deposed. He lived in Germany and England, and served in the American Civil War, of which he wrote a history in 8 vols. In 1871 he returned to France, and remained there until 1886, when he and his family were again exiled. He died Sept. 8 1894.

PARIS, MATTHEW (c. 1200-59). English historian. Educated and ordained priest at St. Albans, 1217, he assisted and succeeded Roger de Wendover in compiling the chronicles of England kept by the abbey. A learned and accurate historian, his chief work is the *Chronica Majora*, the MS. of which is in the library of Corpus Christi College, Cambridge.

PARIS, DECLARATION OF. Four articles for the regulation of maritime warfare agreed to by the plenipotentiaries of the powers who concluded in Paris in 1856 the treaty of peace after the Crimean War. The articles are: (1) privateering is and remains abolished; (2) the neutral flag covers enemy goods, with the exception of contraband of war; (3) neutral goods, with the exception of contraband of war, are not liable to capture under the enemy flag; (4) a blockading force must be able to prevent all ingress to and egress from the enemy coast.

PARIS, TREATIES OF. Various international treaties signed in Paris. They include: (1) Treaty signed Feb. 10, 1763, by Britain, France, and Spain at the close of the Seven Years' War. (2) Treaty concluded May 30, 1814, by the Allies and France after the abdication of Napoleon I. (3) Treaty concluded between the Allies and France, Nov. 20, 1815, after the final overthrow of Napoleon I. (4) Treaty signed March 30, 1856, by France, Great Britain, Sardinia, Turkey, and Russia, at the close of the Crimean War. The treaty of June 28, 1919, at the close of the Great War, is known as the Treaty of Versailles (q.v.).



PARISH (Gr. paroikia, neighborhood, from para, near; oikos, house). Ecclesiastically, a district under the care of one parson or minister known as the incumbent. Parishes appear to have become general about the 9th or 10th century. For civil purposes the parish is the smallest area in local government.

PARISH COUNCIL. Every rural parish in England and Wales which has a population of over 300 has a parish council, while those with less than 300 inhabitants have one if the parishioners so desire, or two or more may be united under one council. These

councils consist of a number of members varying from 5 to 15, are elected by the parish meeting held in March, and hold office for three years. In 1928 these councils were abolished in Scotland.

PARK, MUNGO (1771-1806). British explorer. Born at Foulshields, in Selkirkshire, Sept. 20, 1771, he became a surgeon. In 1793 he was employed by the African association to explore the Niger. His adventures, described in his *Travels in the Interior of Africa*, 1799, awakened great interest, and he was commissioned by the government to make another expedition in 1805. He reached Bamabakoo, but on the journey thence down the Niger was, with his companions, drowned at Boussa. One native rower escaped, from whom the facts were learned in 1812.

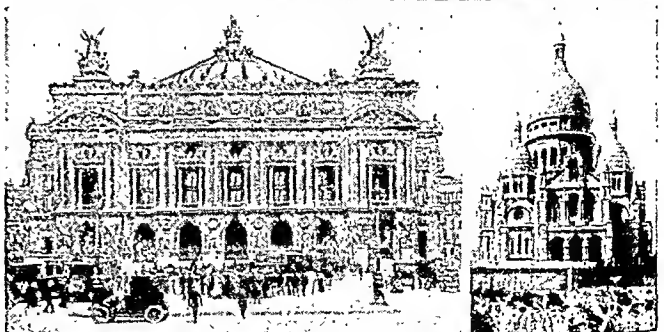
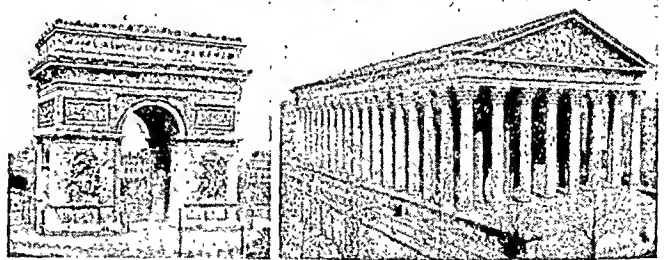


Mungo Park,
British explorer

PARKER, SIR GILBERT (b. 1862). British novelist. Born at Camden East, Addington, Ontario, Nov. 23, 1862, he was educated at Trinity College, Toronto. He travelled in the East and through Canada, and drew largely upon the land of his birth in his novels, which include *The Seats of the Mighty* (dramatised by its author), 1896. *The World in the Crucible*, 1915, deals with the Great War. Sir Gilbert Parker has also written an excellent

history of Old Quebec, 1903. He was M.P. for Gravesend, 1900-18. Knighted in 1902, he was created a baronet in 1915.

PARKER, SIR HYDE (1714-82). British sailor. Born at Tredington, Worcestershire, Feb. 25, 1714, he entered the navy as A.B. at 24, and became vice-admiral in 1780. In 1762, when captain, he captured a Spanish



Paris. Top: bridges across the Seine, and the historic Ile de la Cité. Centre, left: Arc de Triomphe; right, church of the Madeleine from the south-west. Bottom, left: The Opéra; right, church of the Sacré Coeur on the heights of Montmartre

ship which brought him about £30,000 in prize money. He served long in the West Indies, and fought the Dutch admiral Zoutman off the Dogger Bank in 1781. In Dec., 1782, he was lost in the 60-gun ship *Cato*, off S. America.

PARKER, SIR HYDE (1739-1807). British sailor. Second son of Admiral Sir Hyde Parker, he was commissioned in the navy in 1758. Knighted for his services in the American War of Independence and made a rear-admiral in 1793, his irresolution at the Battle of Copenhagen in 1801 led to his recall. He died March 16, 1807.

PARKER, JOSEPH (1830-1902). British Congregational minister. The son of a stonemason, he was born at Hexham, April 9, 1830.



Joseph Parker,
British divine
Elliott & Fry

Entering the Congregational ministry in 1852, he was in 1869 invited to the pastorate of the historic Independent church in the Poultry, London, and in 1874 removed the congregation to the City Temple, where he became one of the most popular preachers of the day. He died Nov. 28, 1902. He published many books, including *The People's Bible*, 25 vols., 1885-95; and *The Paraclete*, 1874.

PARKER, LOUIS NAPOLEON (b. 1852). British dramatist and composer. Born at Calvados, France, Oct. 21, 1852, from 1873-92 he was director of music in Sherborne School. He designed the Sherborne historical pageant in 1905, and was author, part author, or translator of nearly 50 plays, including *Disraeli*, *Drake*, and *Joseph and His Brethren*.

PARKER, MATTHEW (1504-75). English prelate. Born at Norwich, Aug. 6, 1504, and educated at Corpus Christi College, Cambridge, he became chaplain to Anne Boleyn in 1535, and in 1537 to Henry VIII. In 1544 he was appointed master of his college, and was twice elected vice-chancellor of Cambridge University. In danger of his life throughout Mary's reign, he was made archbishop of Canterbury by Elizabeth. Parker took a leading part in translating and publishing the Bishops' Bible, 1563-68. He died May 17, 1575.



Matthew Parker
English prelate

PARKES, SIR HENRY (1815-96). Australian statesman. Born at Stoneleigh, Warwickshire, May 27, 1815, he emigrated to Australia at 24. At Sydney he started *The Empire* newspaper, 1849, and agitated for colonial self-government. Member of the legislative council in 1858, he was colonial secretary 1866-68, and in 1872 became prime minister of New South Wales. Defeated in 1875, he returned to office for a few months in 1877, when he was knighted. He was prime minister again 1878-83, 1887-91. A consistent advocate of free trade, he was also the principal author of Australian federation. He died April 27, 1896. He wrote his autobiography, *Fifty Years in the Making of Australian History*, 1892.



Sir Henry Parkes,
Australian statesman

PARKHURST. British convict establishment, near Newport, Isle of Wight. One part is used as a convalescent prison for old and infirm convicts, the other as an ordinary convict institution. There is accommodation for about 750 convicts.

PARK LANE. London thoroughfare. Once notable for its palatial mansions, it runs N.W. from Piccadilly to the Marble Arch. From its junction with Hamilton Place, where is a handsome fountain by Thornycroft, 1875, it has Hyde Park on its W. side, and on the E., on the site of Grosvenor House, is an extensive and lofty block of modern flats.

PARK ROYAL. Dist. of Middlesex, England. Laid out as a showground of the Royal Agricultural Society in 1903, the estate was later split up into building sites.

PARLIAMENT. (Fr. *parler*, to talk). Name given in England to the great council of the realm which succeeded the Witenagemot of the Anglo-Saxons. It was used for meetings of the king's council summoned to consider public affairs and difficult legal cases. The prelates, earls, and barons gradually swamped the council and became the House of Lords; the lower clergy went off to convocation; and the knights of the shire and burgesses united to form the House of Commons, as it came to be called. Thus it became a legislature of two Houses, and in course of time the Commons became the dominant party.

Parliament makes and unmakes laws, retains or turns out ministries, and directly or indirectly controls British policy. On it have been modelled national governing bodies in every quarter of the globe.

PARLIAMENTARY PROCEDURE. In England at the commencement of a new Parliament the Commons are summoned to the upper chamber, where they are directed to elect a speaker. In the Commons, Mr. Speaker having been elected, the mace is placed on the table. Next day he heads the Commons to the Lords, and claims all their ancient rights and privileges. A few days later Parliament is opened by the speech from the throne in the House of Lords.

In both Houses the front Government bench is to the right of the Speaker; the Opposition benches are on the Speaker's left. The Speaker does not intervene in debate unless to guide its course and maintain order. The lord chancellor, who is ex-officio Speaker of the House of Lords, is free to vote, and frequently speaks. He has no casting vote, the not-contents carrying the division if the numbers are equal. See Commons, House of; Lords, House of.

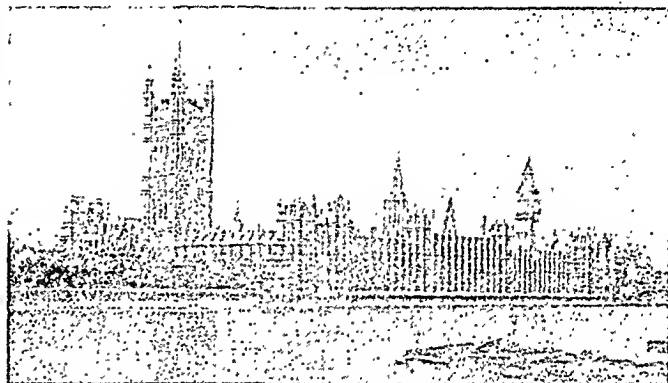
HOUSES OF PARLIAMENT. The buildings in which the two Houses meet is a fine pile overlooking the Thames at Westminster. It was built from designs by Sir C. Barry to replace a building burned down in 1834. In the Gothic style, it covers eight acres and contains 11 courts and quadrangles. It cost £3,000,000 and was completed in 1857, although used before that date.

Features of the building are the clock tower, 316 ft. high, containing Big Ben, the central tower, and the Victoria tower. The chief apartments are those in which the two houses meet, the House of Lords with the throne and the woolsack being especially fine, and those set apart for the use of the sovereign on ceremonial occasions, the royal court and the royal gallery. A fine terrace fronts the river. There are dining rooms, smoking rooms, libraries, etc., for the use of members, as well as private rooms for ministers and others. In the block are residences for the Speaker and other

officials. Statues and frescoes adorn the corridors and lobbies. Westminster Hall and S. Stephen's Hall, which escaped the fire of 1834, have been incorporated in the building.

PARLIAMENT ACT. Statute, enacted Aug. 18, 1911, limiting the power of the House of Lords and making other constitutional changes. By it the Lords can at the most delay a money bill for one month; such bills are defined with some precision, and the Speaker is the authority who decides doubtful cases. An ordinary bill, if passed by the Commons in three successive sessions, will become law at the expiration of that time even if rejected by the Lords. Two years, however, must elapse between its second reading on its first introduction and its final acceptance by the Commons, and it must be sent to the Lords a month or more before the end of a session.

PARMA. City of Italy, capital of the prov. of Parma. An ancient and handsome city on both banks of the river Parma, 75 m. by rly S.E. of Milan, its Lombard-Romanesque cathedral has a lofty campanile and an octagonal dome, containing a fresco of the Assumption, one of Correggio's greatest works. The Romanesque baptistery, with a Gothic upper storey, built of marble, is one of the finest in Italy. There are about 60 other churches, a ducal palace, or Palazzo della Pilotta, with art galleries, library, and museum, and a university founded in 1482. Pop. 72,000.



Houses of Parliament from the Thames. Extreme left, towers of Westminster Abbey; then the Victoria Tower; the lantern over the central hall; and the Clock Tower
Reginald Haines

DUCHY OF PARMA. At one time an independent Italian state, this dated from 1541, when Pope Paul III made his son duke of Parma. The duchy remained in the family of Farnese until its extinction in 1731. It then became a Spanish possession, and so remained until the time of the French Revolution.

The congress of Vienna, 1815, welded Parma, Piacenza, and Guastalla into a grand duchy of Parma. In 1860, when the grand duchy became part of the kingdom of Italy, the area was about 2,400 sq. m. and the pop. 500,000.

The most famous of the dukes of Parma was Alexander Farnese (1545-92), a grandson of the emperor Charles V. He was governor-general of the Netherlands at the time of the Spanish Armada, and died Dec. 3, 1592.

PARMOOR, CHARLES ALFRED CRIPPS, 1ST BARON (b. 1852). British politician. Born Oct. 3, 1852, and educated at Winchester and Oxford, he was called to the bar in 1877, sat in the House of Commons from 1895-1914, and was knighted in 1903. In 1914 he was made a peer and a member of the judicial committee of the privy council. He was lord president of the council in the labour ministry, 1924, and again in 1929.



1st Baron Parmoor
British lawyer
Russell

PARNAHYBA. Town and river of Brazil. The town, in the state of Piahy, stands on the river Parnahyba, 14 m. from its mouth. It exports cattle, hides, tobacco, and cotton. Pop. 52,990.

The river rises in the Serra das Mangabeiras, and after a course of about 800 m. discharges into the Atlantic.

PARNASSUS. Mountain of Greece. It is the highest peak (8,069 ft.) of a range in Phocis, ancient Greece, N. of Delphi. Parnassus was sacred to Apollo and the Muses, and also to Dionysus. Above Delphi is the celebrated Castalian spring.

The name Parnassians is given to a group of French poets and is derived from Le Parnasse Contemporain, a collection of aesthetic poems published in 1866. The contributors included Leconte de Lisle, Théophile Gautier, Théodore de Banville, and Charles Baudelaire. The Parnassians were succeeded by the Symbolists.

PARNELL, CHARLES STEWART (1846-91). Irish Nationalist. He was born at Avondale, co. Wicklow, June 27, 1846, of an English family long settled as landowners in Ireland, and was educated at Magdalene College, Cambridge. In 1875 he entered Parliament as a Home Ruler, and transformed the Home Rule party into an instrument which came near to paralysing the House of Commons. Parnell's aim was explicitly the establishment of an



Charles S. Parnell,
Irish Nationalist

independent parliament in Dublin. To that end in 1878 he organized the Land League, and urged the Irish peasantry to adopt every method short of positive crime to render the law nugatory. In Nov., 1890, Captain O'Shea secured a divorce, citing Parnell as co-respondent, and while fighting for the retention of his leadership Parnell died suddenly on Oct. 6, 1891, within four months of his marriage to Mrs. O'Shea. He was buried at Glasnevin. See Home Rule; Ireland.

PARNELL, THOMAS (1679-1718). English poet. He was born in Dublin, and educated at Trinity College, Dublin. Made a minor canon of S. Patrick's Cathedral, 1704, he was archdeacon of Clogher, 1706-16, and became vicar of Finglas in 1716. He died at Chester, Oct. 24, 1718. His work is marked by love of the classics, humorous fancy, grace, good taste, and moral feeling, and serves as a link between that of Pope (whom he aided in his translation of the Iliad) and Goldsmith. Especially notable are his Hymn to Contentment, A Night-piece on Death, and Epistle to Pope.

PAROTID GLAND. Largest of the salivary glands. Lying in the recess between the lower jaw and the ear, its function is to secrete saliva.

PARR, CATHERINE (1512-48). Sixth wife of Henry VIII. Born at Kendal Castle, Westmorland, daughter of Sir Thomas Parr, she first married Edward Borough (perhaps Lord Borough), then Neville, Lord Latimer, and, on July 12, 1543, Henry VIII. Surviving the king, she married Sir T. Seymour, June, 1547, and died at Sudeley Castle, Sept. 7, 1548.

PARR, THOMAS (c. 1483-1635). English centenarian, known as Old Parr. Tradition says he was born at Winnington, Shropshire, in 1483, and died in London in 1635, being buried in Westminster Abbey. The cottage in which he lived between Shrewsbury and Welshpool was sold to a namesake in 1917.



Catherine Parr,
Queen of England
After Holbein

PARRAKEET. Name given to many small long-tailed parrots. The ring-necked parakeet, well known in aviaries, has green plumage with a red collar. It is found in India and C o c h i n China. The grass parakeets of Australia have very beautiful plumage of green and blue, and are popular as pets.



Parakeet. Alexandrine parakeet.
green and black, with red bill
P. W. Bond

PARRAMATTA. Town and river of New South Wales, Australia. The town is on the river, 13 m. W.N.W. of Sydney. The orchards of the locality are celebrated. The river is only 10 m. long. Pop. 16,760.

PARRATT, SIR WALTER (1841-1924). British organist. Born at Huddersfield, Feb. 10, 1841, and educated privately, he was organist at Magdalen College, Oxford, 1872-82, and then at S. George's Chapel, Windsor. In 1883 he was made professor of the organ at the Royal College of Music, and from 1908-18 was professor of music at Oxford. Knighted in 1892, he died Mar. 27, 1924.

PARRET. River of England. It rises in Dorset, near Cheddington, and flows through Somerset, to the Bristol Channel. Navigable to Langport, its length is 35 m.

PARROT. Name applied broadly to all birds of the order Psittaci, of which there are about 500 species known. They have hooked bills, brightly coloured plumage, are monogamous, mostly sociable, and nest in tree holes. They are mainly fruit-eaters. The order includes the cockatoos (Ptyctolophidae), macaws (Conuridae), parakeets (Platyercidae), lorries (Trichoglossidae), the true parrots (Psittacidae), and others. The Psittacidae are mainly African, and of these the most familiar in Britain is the grey parrot. From May 20, 1930, the importation into Britain of parrots was prohibited, on account of a number of cases of parrot disease (psittacosis). See Kea; Loriquet; Macaw; Parakeet, etc.



Parrot. West African grey parrot,
Psittacus erithacus
W. S. Berridge, P.Z.S.

PARROT FISH (Scarus). Name applied to several species of tropical fish of the wrasse family. The teeth are modified to form sharp biting beaks; and this, with their brilliant colouring, has given rise to the popular name. They feed upon corals, molluscs, and seaweeds.

PARRY, SIR CHARLES HUBERT HASTINGS (1848-1918). British organist and composer. Born at Bournemouth, Feb. 27, 1848, he held professorships at the R.C.M. and at Oxford, was knighted in 1898, and made a baronet in 1902. He died Oct. 7, 1918. Parry's compositions include several fine oratorios, of which Judith and Job are the best known, and a beautiful setting of Milton's Blest Pair of Sirens. He wrote The Art of Music, 1893; Music of the 17th Century, 1902; and J. S. Bach, 1910. Consult Life, C. L. Graves, 1920.

PARRY, SIR WILLIAM EDWARD (1790-1855). British explorer. Born at Bath, Dec. 19, 1790, he entered the navy in 1806, was employed in protecting whalers in Spitsbergen,

1811-13, and five years later accompanied Ross's Arctic expedition. In 1819 he set sail in the Hecla to find the North-West Passage. Passing through Baffin Bay, he made 114° W. From 1821-25 he made two other Arctic voyages, and in 1827 reached 82° 45' N., a record unsurpassed for nearly fifty years. In 1829 he was knighted. He died at Ems, July 8, 1855. He wrote Voyages to the North-West Passage, 1821; and Narrative of an Attempt to Reach the North Pole, 1828.

PARSEES (inhabitants of Pars, or Persia). Religious community of India and parts of Persia. In India they numbered in 1921 rather more than 100,000, living mostly on the W. coast. Their religion is a form of Zoroastrianism, and from their regard for fire as an emblem of purity they are called Fire-worshippers. They are the most enterprising and educated native community in India, and many have devoted their wealth and ability to philanthropic public ends. They expose their dead on iron gratings in towers of silence, where the bones, denuded of flesh by vultures, drop into a pit, and are removed to a resting-place underground.

PARSLEY (*Carum petroselinum*). Biennial culinary herb of the natural order Umbelliferae. It was introduced into Britain from Sardinia in 1548. It succeeds best in a light loam.



Parsley Fern, tuft of the
delicate fronds

PARSLEY FERN (*Cryptogramma crispa*). Fern of the natural order Polypodiaceae. Native of Europe, Asia, and Alaska, it forms tufts among the stones in mountain districts. The fronds are bluish green, and much divided like a parsley leaf.

PARSNIP (*Pastinaca sativa*). Native British biennial edible plant of the natural order Umbelliferae. In its wild state it has no nutritive value, but under cultivation it has developed into the well-known root vegetable. Parsnips flourish in deep, rich loam.

PARSONS, SIR CHARLES ALGERNON (b. 1854). British engineer. Born June 13, 1854, a younger son of the 3rd earl of Rosse, he founded at Newcastle the firm of C. A. Parsons & Co. His great invention was the Parsons marine steam turbine. Knighted in 1911 and made F.R.S. in 1898, he was president of the British Association 1917 and 1919, and was awarded the O.M. in 1927.



Sir C. A. Parsons,
British engineer
Russell

PARSONSTOWN or BIRR. Urban dist. of Offaly (King's co.), Irish Free State. It stands on the Little Brosna river, 89 m. from Dublin, on the G.S. Rlys. S. Brendan's is the chief church. Known at first as Birr, its other name was given to it after it became the property of the family of Parsons, earls of Rosse, about 1610. The earl's seat is Birr Castle. Pop. 3,402.

PARTHENOGENESIS. Biological term to express a mode of reproduction in which impregnation of the female germ-cell by the male element is absent. Some species, e.g. many gall-flies and saw-flies, consist entirely of females. Examples occur among insects, rotifers, crustaceans, and some plants. Plant lice develop in the same way. From the unfertilised eggs of the queen bee only males result.

PARTHENON, THE (Gr. Virgin's chamber). Temple of Athena, on the Acropolis, Athens. In plan the Parthenon is a parallelogram, divided into two main parts. There were eight outside columns at each end, and 17 on each side. The portico at either end included an inner line of six columns. Its chief glory was the decorative sculpture by Pheidias (q.v.) and his school. With the exception of the inside sculptures, the Parthenon remained nearly intact till 1687, when the explosion of a powder magazine stored here by the Turks dislodged much of its splendid masonry. See illus. pp. 14, 381, 555.

PARTHIA. Country of ancient Asia. It lay S.E. of the Caspian Sea, and adjoined Media. It formed a part of the old Persian or Achaemenid empire, and when that empire was overthrown by Alexander the Great was included in the dominion of the Seleucid kings of Syria. About 250 B.C. it became an independent kingdom under Arsaces I. During succeeding centuries it increased enormously, and under Mithradates I (170-138 B.C.) became the Parthian empire, stretching from the Euphrates to beyond the Indus, with Ctésiphon as its capital. In A.D. 226 Parthia was conquered by Ardasir I and absorbed in the rehabilitated Persian empire.

PARTNERSHIP. According to the Partnership Act, 1890, "the relation which subsists between two or more persons carrying on a business in common with a view to profit." In England and Ireland the rights of a creditor are against the individuals who compose the firm, and all partnership debts are joint. In Scotland partnership debts are joint and several. A partnership ends by effluxion of time, agreement to dissolve, decree of dissolution, or death of a partner.

PARTRIDGE. Game bird of which two species occur in Great Britain. The French partridge (*Caccabis rufa*) is distinguished by



Partridge. Specimen of the common British partridge.

its more handsome plumage and bright red legs and beak, and prefers sandy soil and uncultivated land, while the grey partridge (*Perdix cinerea*) thrives best on rich soil and a mid cultivated fields. Partridges are found in coveys of from five to twenty, and feed upon insects, leaves, grain, and other seeds. At night the covey roosts in a circle in an open field, each bird facing outwards. The nest is made of grass and leaves placed in a hollow under a hedge or among standing corn. In Great Britain and Ireland the partridge-shooting season is from Sept. 1 to Feb. 1.

PARTRIDGE, SIR BERNARD (b. 1861). British cartoonist. Born in London, Oct. 11, 1861, son of Prof. Richard Partridge, F.R.S., he was first engaged in stained glass designing. He began to contribute to *Punch* in 1891, joined the staff in 1901, and later became chief cartoonist. He was knighted in 1925.

PARTRIDGE BERRY (*Mitella repens*). Small trailing evergreen herb of the natural order Rubiaceae. A native of N. America, it has oval, shining, small fragrant white flowers in pairs and it bears scarlet, edible berries.

Partridge wood is another name for the Cabage-bark tree (q.v.).

PASADENA. City of California, U.S.A. It is 9 m. N.E. of Los Angeles, and is a winter resort. On Mount Wilson is the Carnegie Solar Observatory. Pasadena was settled in 1874, and incorporated in 1886. Pop. 85,500.

PASCAL, BLAISE (1623-62). French philosopher, theologian, and mathematician. Born at Clermont-Ferrand, Auvergne, June 19,



Blaise Pascal, French philosopher

1623, he is famous as a great French prose writer. His philosophy was influenced by Epictetus, Montaigne, and Descartes. He came under the influence of the Jansenists, and about 1654 retired to Port-Royal, which his sister, Jacqueline, had entered, and where he adopted the ascetic mode of life. In 1656-57 he became the champion of Port-Royal against the Jesuits, writing pseudonymously the 18 *Lettres* familiarly known as *The Provincial Letters*. His *Pensées*, issued posthumously in 1670, though only fragments of a projected *Apology or Defence of Christianity*, have exercised perhaps a wider influence in theology than the *Lettres*. Pascal died in Paris, Aug. 19, 1662.

Pasha. Turkish title given to governors of provinces, high military and naval officers, and others. Bashaw is an early English form of the word.

PASQUE FLOWER (*Anemone pulsatilla*). Perennial herb of the natural order Ranunculaceae. A native of Europe and N. Asia, it has leaves much divided into narrow segments and dull purple, silky, solitary flowers supported on stout erect stalks. The seeds have feathery tails. In long, Easter (Lat. Pascha) eggs were often stained by rubbing them with the flowers.

PASSAGE, WEST. Urban dist. of co. Cork, Irish Free State. It is 6 m. from Cork, on the G.S. Rlys., has a harbour, and is a pleasure resort. Pop. 3,019.

Passaro. Cape of Sicily. It forms the S.E. corner of the island and is on the E. side of the small bay of Porto Palo.

PASCHENDAELE. Village and ridge of Belgium, in the prov. of W. Flanders. The village is 7½ m. N.E. of Ypres, and the ridge extends from Gheluvelt on the S. to the forest of Houthulst on the N. Village and ridge were captured by the Germans, Oct., 1914, and held until stormed by the British in Oct.-Nov., 1917. Lost in the German advance of April, 1918, the positions were regained by the Belgians in Oct., 1918.

PASSENGER DUTY. Tax levied upon railway travelling in Great Britain. It was imposed in 1841 at the rate of 5 p.c. on all money received from passenger traffic. An act of 1883 abolished it in the case of all fares not exceeding a penny a mile, and reduced it to 2 p.c. on short journeys in urban districts. It was entirely abolished in 1928.

PASSFIELD, SIDNEY WEBB, BARON (h. 1859). British sociologist and politician. Born in London, July 13, 1859, he entered the civil service in 1878, but left it in 1891. In 1892 he was elected to the L.C.C., of which he was a member for 18 years. One of the founders of the London School of Economics in 1913, he started *The New Statesman*. He entered Parliament in 1922 as a Labour M.P., and was president of the board of trade, Jan.-Nov., 1924. In 1929 he became colonial secretary and was made a baron.

Wehbs married in 1892 Beatrice Potter (b. 1858), an authority on social and industrial conditions. The Wehbs jointly wrote *The History of Trade Unionism*, 1894; *English Local Government*, 1906; and *A Constitution for the Socialist Commonwealth of Great Britain*, 1920. In 1926 Mrs. Wehbs published *My Apprenticeship*. When her husband became a baron she retained the name of Mrs. Sidney Wehbs.

PASSION, THE. Religious term for the sufferings and Crucifixion of Jesus Christ. It early became a custom in the Church to recite the story of the Passion as told in the Gospels, the narrative portion being sung to Gregorian tones by a tenor while individual speeches were allotted to other selected voices and the answers of the crowd were sung by a chorus. These musical compositions were known as Passion music, which in the hands of J. S. Bach attained its highest development.

PASSION PLAY. Scriptural drama presented periodically at Oberammergau, Bavaria. Representing Christ's Passion, it is presented by 600 performers, all natives of Oberammergau, who accept small fees, the profits going to charity. The play originated in a vow taken by survivors of the pest in 1633 to present once in every ten years living pictures of Christ's Passion. See Oberammergau.



Pasque Flower. Bloom of the species of anemone, formerly used for colouring Easter eggs

PASSION FLOWER (*Passiflora*). Large genus of climbing herbs and shrubs of the natural order Passifloraceae, natives chiefly of the warmer parts of America. The flowers are often large and showy, coloured blue, purple, red, white or yellow. The name (*flos passionis*) is due to the fact that the early Jesuits saw in the flower numerous emblems of the Crucifixion of Christ. See illus. below.

PASSIONISTS. Roman Catholic order of priests and laymen. It was founded about the year 1730 by S. Paul of the Cross (1694-1775), and formally approved by the pope in 1741. Its special work is to conduct nunsions and retreats and to undertake parochial work.

PASSOVER (Heb. pesach; Gr. pascha). Ancient Jewish feast. Instituted at the time of the exodus, it was so named from the passing over by the destroying angel of the thresholds of the Israelites when all the first-born of Egypt were smitten (Ex. 12). Celebrated on Nisan 15-22, it is also called the festival of unleavened bread.

PASSPORT (Fr. passeport). Safe-conduct and licence to travel. In Great Britain passports are issued to British subjects on the recommendation of a banker, mayor, magistrate, minister of religion, barrister or physician resident in the U.K. In 1930 the fee was 7s. 6d. Visas by the authorities of countries through which the traveller passes are often required, though for British subjects the visé has



Passion Flower foliage and bloom. See above

been abolished in Germany, France, Belgium, and Switzerland. The passport office is 1, Queen Anne's Gate Buildings, Dartmouth St., Westminster, London, S.W.1. There is a branch office at 36, Dale Street, Liverpool.

PASTEUR, LOUIS (1822-95). French biological chemist and physicist. Born at Dôle, Dec. 27, 1822, and educated at the École Normale, Paris, he held several professorships before becoming in 1867-69 professor of chemistry at the Sorbonne. He established the Pasteur Institute in Paris, 1888, and remained its director until his death, Sept. 28, 1895.

Pasteur first attracted notice by his discovery that vinous, acetous, and lactic fermentations were caused by micro-organisms in the air, and he formulated methods for the prevention of "diseases" in wines, beer, vinegar, etc. He studied silkworm disease, isolated the bacillus of anthrax, and prepared vaccines for rabies, diphtheria, and other diseases.

PASTEUR INSTITUTE. This is a research laboratory established for the purpose of combating hydrophobia, and named after Louis Pasteur. The first and most important, L'Institut Pasteur, was erected in Paris by public subscription, and opened Nov. 14, 1888.

A method of preserving wine, milk, and other liquids from deterioration by heating is called pasteurization. Pasteur showed that sufficient heat killed all micro-organisms.

PASTOR. Bird, known also as the rose-coloured starling (*Pastor roseus*). The plumage is pink on the back and under parts, violet-black on the head, neck, and tail, and greenish-black on the wings. It nests in W. Asia and S.E. Europe, and feeds mainly on locusts.



Pastor, also called rose-coloured starling
W. S. Herridge, F.Z.S.

PATAGONIA. Extensive region forming the southern extremity of S. America and belonging to Argentina and Chile. It extends S. from the Río Colorado to the Strait of Magellan, which divides it from the islands of the Tierra del Fuegian archipelago. A treaty, ratified in 1881, apportioned the territory E. of the Andes to Argentina and the W. coastal region to Chile. Argentine Patagonia is divided into the territories of Río Negro, Neuquén, Chubut, and Santa Cruz. Its area is 322,004 sq. m., or, including the E. section of Tierra del Fuego, 331,203 sq. m. The pop. is estimated at 106,625. The area of Chilean Patagonia is 584,491 sq. m. See Argentina.

PATELEY BRIDGE. Mining town of Yorkshire (W.R.). It stands on the Nidd, 10 m. from Ripon, on the L.N.E. Rly. Here are stone quarries. Sheep and cattle fairs are held. Pop. 2,500.

PATEN. In the service of the Eucharist, the plate on which the consecrated bread is placed: also in the Mass, the plate on which the Host is laid. The term is also used for the covering of the chalice. It is usually of gold or silver-gilt. See Eucharist.

PATENT. Exclusive right or privilege. By the statute of monopolies, 1624, the grant of a patent was restricted to the "first and true inventor," who, according to present practice, may comprise not only the actual inventor, but the first importer of an invention into the U.K. Evidence of ingenuity must be disclosed. The investigation period is restricted to 50 years. The normal protection period is 16 years. Interested parties may, within two months after the acceptance of the complete specification by the Patent Office, oppose the sealing of the patent. At any time not less than four years after the date of a patent, any

person may apply for its revocation on the ground that the protected product or process is manufactured or carried on wholly or largely outside the United Kingdom.

To deal with all matters affecting patents in Great Britain there is a Patent Office. The offices are at Southampton Buildings, London, W.C., where there is a valuable scientific library.

A patent medicine is a medicine or specific for the cure or relief of any physical malady, and of which the owners claim an exclusive right of sale. The Medicine Stamp Act, 1812, imposed a duty on patent medicines. The British Medical Association has published a handbook containing an analysis of the composition, cost of production, and selling price of the chief patent medicines.

PATER, WALTER HORATIO (1830-94). British scholar. Born at Shadwell, August 4, 1830, the son of a physician, and educated at King's School, Canterbury, and Queen's College, Oxford, he became a fellow of Brasenose College in 1864. A visit to Italy in 1865 inspired a number of essays which, collected in 1873, obtained wide recognition as *Studies in the History of the Renaissance*. In 1885 appeared *Marius the Epicurean*. Other publications include *Imaginary Portraits*, 1887, and *Plato and Platonism*, 1893. He died July 30, 1894.

PATERNOSTER ROW. London thoroughfare. It runs W. from Cheapside to Amen Corner, Warwick Lane. Long associated with the publishing trade, it was originally inhabited by makers of prayer-beads, the dealers in which, known as paternosters, moved here from St. Paul's Churchyard in the 13th century. The Chapter coffee house was famous in the 18th century as a publishers' meeting place.

PATERSON. City of New Jersey, U.S.A., on the Passaic river, 15 m. N.W. of New York. The river provides ample water power for industries. Silk is an important manufacture. Founded in 1791, Paterson became a township in 1831 and a city in 1851. Pop. 135,875.

PATESI. Sumerian name for the ruler of a city-state in early Babylonia. It regarded him as the steward of the city-god, in whose name he administered its affairs.

PATHAN. Name popularly denoting the Iranian peoples of E. Afghanistan and the N.W. frontier province of India. The predominant speech is Pushtu. The Pathans in India number about 4,000,000.

PATHOLOGY (Gr. pathos, disease; logos, discourse). Study of the essential nature of disease, particularly the structural changes and morbid processes in the body which are associated with disease. The investigator uses experimental pathology when he produces a disease in animals and studies its effects. The observation of morbid processes in sick persons is termed clinical pathology. The study of the changes in diseased tissues is sometimes known by the name of morbid anatomy.

PATIALA. Native state and town of the Punjab, India. The state has an area of 5,932 sq. m. and a pop. of 1,499,739. The ruler is a maharaja entitled to a salute of 17 guns. The capital is built round the old palace, and is a busy trading centre. Pop. 47,531.

PATIENCE. Card game for a single person. There are many hundreds of such games. In one class, after shuffling the cards, the player places them in sequence according

to some plan, the object being to do this by working through the cards for a certain number of times, perhaps three.

PATINA. Green coloration seen on bronze or copper articles which have been exposed to a moist atmosphere for a long period. It is imitated by wetting bronze articles with dilute acids, or applying a paint of copper carbonate. Japanese patina is a glossy black with a violet sheen, or golden sheen with shades of red and grey, according to the metal used.

PATMORE, COVENTRY KERSEY DIGHTON (1823-96). British poet. Born at Woodford, Essex, July 23, 1823, he was an assistant in the printed book dept. of the British Museum, 1846-66. His works include *The Angel in the House*, 1854-62, his most notable poem; *The Unknown Eros*, 1877; *Amelia*, 1878; and *Red, Root and Flower*, 1895. A man of difficult temperament and a mystic, he became a Roman Catholic in 1864, and died at Lymington, Nov. 26, 1896.



Coventry Patmore, British poet

PATMOS, OR PATIMA. Island of the Aegean, one of the Sporades group. On the S.E. side of the Aegean, it is famous as the place of banishment of the Apostle John. It belongs to Italy. Its area is 16 sq. m. Pop. 2,550. See Aegean Sea.

PATNA. Town of Bihar and Orissa, India. It is on the right bank of the Ganges, close to the mouths of the three tributaries, Son, Gogra, Gandak. The remains of a pillared hall, erected in the 3rd century B.C., were unearthed in 1912-13. The oldest mosque is that of Sher Shah (1540-45); the library has a collection of Arabic and Persian manuscripts. Pop. 119,976.

PATON, SIR JOSEPH NOEL (1821-1901). Scottish painter. Born at Dunfermline, Dec. 13, 1821, he became A.R.S.A. in 1847, and R.S.A. in 1856; and the queen's limner for Scotland in 1866. He painted religious and other subject pictures in the pre-Raphaelite manner, with strong but not always attractive colour. He was at his best in black and white work. Knighted, 1867, he died in Edinburgh, Dec. 26, 1901.

PATRICIA. District of Ontario, Canada. The most N. area in the prov., it was formed from parts of Keewatin and the N.W. Territories in 1912. Its area is 146,400 sq. m.

PATRICIAN. Member of the ruling order in ancient Rome, as opposed to the plebs or plebeians. Descendants of the original citizens, they had the monopoly of the priestly offices and the exclusive right of interpreting the law. The senate was recruited almost exclusively from their ranks.

PATRICK (c. 387-493). Patron saint of Ireland. He was born probably near Dumbarton, Scotland. Escaping from servitude in Antrim, he became a monk at Tours, was ordained by S. Germain of Auxerre, and entrusted by Pope Celestine I with the conversion of Ireland, where he founded numerous churches, religious houses, and bishoprics. Croagh Patrick, at Clew Bay, and the island in Lough Derg, co. Donegal, were among his places of retreat for meditation and devotion. (See Derg). He died at Saul, near Downpatrick, on March 17, 493 or 460. His literary remains are the valuable Confession, preserved at Dublin, and the Letter to Coroticus.

PATRINGTON. Town of Yorkshire (E.R.). It is in the East Riding, 14 m. by rly. S.E. of Hull, and has a trade in seed, corn, and coal. Pop. 1,137.



Pathan from the North-West Frontier of India

PATTESON, JOHN COLERIDGE (1827-71). British missionary. Born in London, April 1, 1827, the son of Sir John Patteson, a judge, he was educated at Eton and Balliol College, Oxford. He was ordained in 1853, and in 1861 was made bishop of Melanesia. After ten years of devoted service he was murdered, Sept. 20, 1871, on the island of Nukupu.

PATTI, ADELINA JUANA MARIA (1843-1919). Anglo-Italian vocalist. Born at Madrid, Feb. 19, 1843, she made her operatic début as Lucia in 1859 in New York. In 1861 she sang with great success in London, and then visited the chief cities of Europe. Madame Patti was for long the most popular soprano in the world. Her farewell concerts in London lasted from 1895 to 1908. She was thrice married, her third husband being a Swede, Baron Cederström. She died Sept. 27, 1919.



Adelina Patti, Anglo-Italian vocalist

PATTISON, MARK (1813-84). British scholar. Born Oct. 10, 1813, at Hornby, Yorkshire, the son of a clergyman, he was educated at Oriel College, Oxford. Elected fellow of Lincoln College in 1839, he won a reputation as tutor and lecturer there. In 1861, after six years away from Oxford, he was chosen rector of the college, and he remained there until his death at Harrogate July 30, 1884. In 1841 he was ordained. He married Emilia Frances Strong, who later became the wife of Sir Charles Dilke.



Mark Pattison, British scholar

Pattison wrote a life of Casaubon and began one of Scaliger. His Memoirs, those of a disappointed man, appeared in 1885. He is regarded as the original of Isaac Casaubon in George Eliot's Middlemarch.

PAU. Town of France. The capital of the dept. of Basses-Pyrénées, on the right bank of the Gave du Pau, 66 m from Bayonne, it stands at a height of 670 ft., with a delightful climate, and is a favourite winter resort. It was from 1512-89 the capital of the little state of Béarn. Pop. 37,711. See France.

PAU, PAUL MARIE CÉSAR GERALD (b. 1848). French soldier. He was born at Montélimar, Nov. 29, 1848, and educated at St. Cyr. Entering the French army as a lieutenant of infantry, he served in the Franco-Prussian War, 1870-71, where he lost an arm. He reached the rank of general in 1897, and commanded the 16th, and then the 20th army corps. In 1914 he was given general direction of the French offensive in Alsace. In 1915-16 he was engaged on military missions to Russia, Italy, and Rumania, but in 1917 he was again commanding French forces in Alsace.



P. M. C. G. Pau, French soldier

PAUL. Urban dist. of Cornwall. It is 2 m. from Penzance. The Spaniards burned the village in 1593. In the neighbourhood are remains of a British camp. Pop. 5,669.

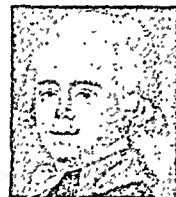
PAUL, SAINT. Born at Tarsus, in Cilicia, about the same time as Jesus Christ was born in Judea, Paul's name was originally Saul. A Jew of the Dispersion, he learned the local trade of tent-making, and was sent to Jerusalem to be a rabbi. Among the first opponents of the Christian religion, he headed a persecution intended to suppress it; but on the way

to Damascus, where he was going to hunt out the Christians, he was converted by a vision.

Paul spent three years in Arabia, thinking over his experience. On leaving Arabia, he went to Jerusalem; but the disciples were afraid of the persecutor turned apostle, till Barnabas won for him their confidence. The opposition of the Jews was too strong, however, and he went to Tarsus, spending some years evangelising his native province. Then, in company with Barnabas, he was sent forth on his first missionary journey round Cilicia. On his second missionary journey he evangelised the cities of Greece, among them Athens and Corinth. The third journey went over the same ground, but its principal centre was Ephesus. On arriving in Jerusalem at the end of it, he was arrested at the instance of the Jews, appealed to Caesar, and was sent to Rome for trial. He was beheaded under Nero.

PAUL. Name of five popes. Paul I was pope from 757 to 767. Paul II, a nephew of Eugenius IV, was pope from 1464 to 1471. Paul III, a member of the Farnese family, was made a cardinal in 1483 by Alexander VI. He became pope in 1534 and reigned until his death, Nov. 10, 1549. Paul IV, a member of the Caraffa family, was pope from 1555 to 1559. Paul V, a Borghese, was pope from 1605 to 1621.

PAUL (1754-1801). Tsar of Russia. He was born Oct. 1, 1754, the son of Catherine the Great and Peter III. After the murder of Peter, in 1762, Catherine seized the throne, and Paul led an obscure existence until her death, when he banished her counsellors, joined the allied powers against Napoleon, and later entered into an alliance with Napoleon in order to crush the Bourbons. On March 23, 1801, he was assassinated.



Paul I, Tsar of Russia

PAULINUS, GAIUS SÆTORIUS (fl. 41-69). Roman general. In 59 he was appointed governor of Britain, and in 61 subdued Anglesey. Summoned south to quell the Iceni, who had rebelled under the leadership of their queen, Boadicea, Paulinus gained a decisive victory over them near London. The following year he was recalled to Rome.

Another Paulinus was a follower of S. Augustine. He became the first bishop of York, and then bishop of Rochester.

PAUPERISM (Lat. pauper, a poor person). State of dependence upon the community through lack of means of subsistence.

In ancient Greece and Rome the maintenance of the poor was a matter of state concern, and feudalism involved the dependence of the serf upon his lord for maintenance.

The Church in the Middle Ages was a great almsgiver, so when the religious houses fell, the poor suffered. Compulsory contributions for their support began in



Anna Pavlova, Russian dancer, in her garden at Hampstead
Miss Compton Collier

1535, the duty of relief for the poor being put upon every parish.

In 1601 a law was passed which has since formed the basis of the English poor law system, and has been copied in Ireland. Overseers were appointed in every parish and power was given to them to levy taxes on the inhabitants for the relief of the poor. In 1723, and again in 1834, changes were made, one being the introduction of the workhouse and another the grouping of parishes into unions.

Later the overseers and, in 1929, the boards of guardians were abolished; the duties of the boards were transferred to the county and county borough councils.

In England and Wales the expenditure on pauperism for 1928-29 was £36,200,000. For the year 1928 the number of persons in receipt of relief was 1,364,691. In Scotland, in 1923, 240,580 were relieved. See Poor Law.

PAUSANIAS (c. A.D. 150). Greek traveller and geographer. Perhaps a native of Lydia, he travelled extensively in Greece, embodying the results of his journeys in a work in 10 volumes, *The Itinerary of Greece*.

Pavane (Lat. pavo, peacock). Stately dance tune in duple time, joining with the galliard in the earliest kind of suite.

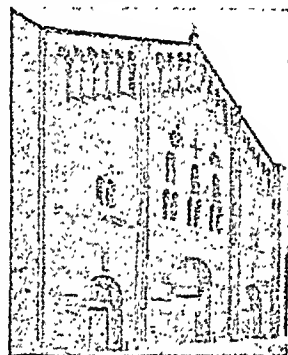
PAVIA. City of Italy. The capital of the prov. of Pavia, it is the ancient Ticinum. It stands on the Ticino, near its junction with the Po, 22 m. by rly. S. of Milan. A magnificent 14th century covered bridge connects with the suburb of Ticino. The cathedral was founded in 1487. S. Michele, one of the finest specimens of the Lombard basilica, dates from the 11th century.

The university is a handsome building, dating from 1490, but Pavia was a centre of learning as early as the 9th century. Near by is the Certosa (q.v.). There is trade in silk, wine, olives and olive oil, corn, hemp, and Parmesan cheese. Pop. 50,000.

BATTLE OF PAVIA. At Pavia, on Feb. 24, 1525, the French, under Francis I, were routed with a loss of 10,000 men, Francis himself being taken prisoner.

PAVLOVA, ANNA. Russian dancer. Born in Russia, she made her first appearance at the Imperial Opera House, St. Petersburg, and soon became the most noted dancer in Europe. She made her début in London in 1909, at the Palace Theatre, and later toured America.

PAWNBROKER. Person licensed to lend money not over £10 at interest on the security of articles deposited with him. In Great Britain, on loans of 10s. and under, the pawnbroker's charge is 1d. for the ticket and interest at 1d. per calendar month on each florin or part of a florin; between 10s. and 40s. the charges are 1d. for the ticket and 1d. a month per florin. In both these cases additional interest at the rate of 1d. for each 5s. or part thereof may now be charged. On larger sums up to £10 the charge for the ticket is 1d. and the interest 1d. per half-crown. Special contracts, however, may be made with loans exceeding 40s. Every pawnbroker must take out an annual licence at a cost of £7 10s. Pledges may be redeemed at any time within one year and seven days.



Pavia. Facade of the church of S. Michele, dating from the 11th cent.

PAXTON, SIR JOSEPH (1801-65). British architect and gardener. Born at Milton Bryant, Bedfordshire, Aug. 3, 1801, he was gardener at Chatsworth. He was knighted for his design of the Great Exhibition building of 1851, and had charge of its erection as the Crystal Palace at Sydenham. M.P. for Coventry 1854-65, he died June 8, 1865.



Sir Joseph Paxton,
British architect
After Oakley

PAYMASTER GENERAL. Government official. His department pays out public money in accordance with the votes of Parliament and as requisitioned by the treasury.

PAYN, JAMES (1830-98). British novelist. Born at Cheltenham, Feb. 28, 1830, and educated at Eton, he edited *Chambers's Journal* 1858-74, and the *Cornhill Magazine*, 1882-96. His works include *What He Cost Her*, 1877; *By Proxy*, 1878; *Thicker than Water*, 1883; *The Talk of the Town*, 1885, which deals with the Shakespearean forger Ireland. Some *Literary Recollections*, 1884, contains interesting reminiscences of contemporary literary society, and *The Backwater of Life*, published posthumously in 1899, some cultured essays. He died in London, March 25, 1898.

PAYNE, JOHN HOWARD (1791-1852). American actor and playwright. Born in New York, he made his stage debut at the Park Theatre there, Feb. 24, 1809, as Young Norval in John Home's tragedy, *Douglas*. He acted in England, and adapted many plays from the French. Payne was American consul at Tunis, 1842-45 and 1851-52, and died there, April 9, 1852. He is chiefly remembered as the author of *Home, Sweet Home*.



Peach. Blossom and, right, fruit



Peas in the pod

PEA (*Pisum sativum*). Annual climbing herb of the natural order Leguminosae. Its seeds, in pods, form one of the most popular of vegetables. The garden pea is said to have been introduced into Britain from S. Europe in 1548. The variety known as sugar pea has edible pods. See *Sweet Pea*.

PEABODY, GEORGE (1795-1869). American philanthropist. Born at South Danvers, Massachusetts, Feb. 18, 1795, he amassed a large fortune in business 1814-43. He then moved to London, where he set up as a merchant and banker and became known for his charitable gifts. He died in London, Nov. 4, 1869, and after lying in state in Westminster Abbey his remains were taken to America. In 1868 South Danvers was renamed Peabody.

PEABODY TRUST. This fund was established in 1862 by George Peabody, to build houses for the working classes of London. Blocks of buildings were erected in various parts of London until there were 18 of them.

PEACE. River of Canada. Rising W. of the Rockies in the mountains of British Columbia, it passes through the Rockies

and empties itself into the Great Slave Lake. Its length is 1,067 m. and its basin covers 117,000 sq. m. The Peace River district in Alberta possesses 30,000,000 acres waiting for colonists and vast mineral resources.

PEACE, CHARLES (1832-79). British criminal. Born in Sheffield, May 14, 1832, he received his first sentence for robbery in 1851. Before his execution at Leeds on Feb. 25, 1879, for the murder of Arthur Dyson on Nov. 29, 1876, he confessed to many burglaries and to the murder of Constable Cock at Manchester in 1876. For this crime a man named William Hahron had been convicted and sentenced to death, and was suffering penal servitude for life at the moment of Peace's confession. Hahron received a free pardon and £800 compensation.



Charles Peace,
British criminal

PEACE CONFERENCE. Meeting of representatives of belligerents following hostilities to settle territorial and other questions. The term is specially associated with the meeting of representatives of the Allied powers in Paris which drew up the peace treaties following the Great War. It was formally opened on Jan. 18, 1919. The terms were presented to Germany on May 7, and signed June 28; those to Austria were presented June 2, and signed Sept. 10; Bulgaria signed on Nov. 27. See *Verailles*.



Peacehaven. Bungalow town of Sussex. It stands on the cliffs between Brighton and Newhaven.

PEACH (*Prunus Persica*). Small fruit-bearing tree of the natural order Rosaceae.

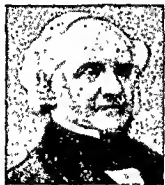
It is a native of Asia, was cultivated before the Christian era, and was introduced into Britain in the 16th century. The flowers are pink, white, and red, and the fruit, in the case of the peach itself, is large, pale yellow and crimson in colour, and smooth-skinned. The nectarine, a variety, is much smaller in size.

There are two types of peaches, known as freestone and clingstone. In the former the flesh parts readily from the stone, but in the latter, fibrous cords from the stone hold the flesh around it. A white double-flowered peach (*Persica vulgaris flore pleno*) is grown as an ornamental shrub.

PEACOCK (*Pavo*). Genus of the pheasant family. The common peacock (*P. cristatus*) is a native of India and Ceylon. It was introduced into Europe at an early date, and was a favourite table bird with the Romans.

The peacock is one of the handsomest of birds, especially at the breeding season, when the male displays his gorgeously eyed train for the delectation of the hens. The green or Java peacock is a native of Burma, Malay Peninsula, and Java.

PEACOCK, THOMAS LOVE (1785-1866). British novelist and poet. Born at Weymouth, Oct. 18, 1785, the most notable of his poems is *Rhododaphne*, 1818. He is remembered best for his satiric novels; *Headlong Hall*, 1816; *Nightmare Abbey*, 1818; *Maid Marian*, 1822; and *Crochet Castle*, 1831. He died at Halliford, near Chertsey, Jan. 23, 1866. One of his daughters married George Meredith (q.v.).



George Peabody,
American
philanthropist

PEACOCK BUTTERFLY. Name given to butterflies of the species *Vanessa Io*. The wings are purplish above, with dusky base and hind margins. There is a large eye-spot on each. On the under side the wings are brown, with black markings. The caterpillar is black, with spots of white.



Peacock Butterfly. *Vanessa Io*, a species which appears in August
J. J. Ward

PEAK. Wild tableland of Derbyshire. It is north of Buxton and forms the S. end of the Pennine Chain. Its highest point is Kinder Scout (2,088 ft.), other heights being Axe Edge, near Buxton (1,860 ft.), and Mam Tor (1,700 ft.). Castleton is regarded as the capital of the Peak, and Chatsworth is known as the palace of the Peak. Peveril Castle, near Castleton, figures in Scott's *Peveril of the Peak*. Peak Forest is a station on the L.M.S. Rly. 36 m. from Derby. The Peak Cavern, Castleton, goes 500 yards into the limestone.



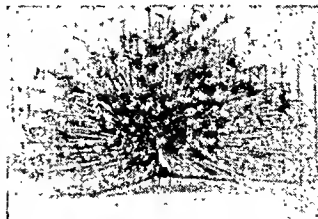
Pear. Fruit of cultivated variety

PEAR (*Pyrus communis*). Tree of the natural order Rosaceae. It is a native of Britain, and from E. Europe to the Himalayas, and is propagated in the same way as apples, chiefly by grafting. The fruit is slightly woody. Late pears should never be left on the trees after the middle of November, but picked and carefully stored. The pear, particularly in an uncooked state, should be avoided by bilious persons. See *Perry*.

PEARL. Secretion deposited by many bivalve molluscs, and a few univalves, in the form of thin layers of calcium carbonate one upon the other. The iridescent play of colour is due to irregular refraction caused by obstruction to light by the numerous thin layers. Pearls dissolve in acids, and discolour if exposed to alkali or even to constant warmth against human skin. The best pearls are produced by the pearl oyster. The finest blacks come from the South Seas and the Gulf of Mexico. Imitation pearls are fashioned out of mother-of-pearl. "Cultured" pearls are produced by introducing into the flesh of the oyster a foreign substance, which the oyster covers with nacre.



Pearl found in an oyster shell off Turtle Island in 1909



Peacock with train outspread

PEARL. Type, half the size of long primer, a size smaller than ruby and a size larger than diamond. Known also as 5 point, about 15 lines make an inch in depth.

PEARSON, SIR CYRIL ARTHUR (1866-1921). British newspaper proprietor. Born Feb. 24, 1866, at Woolkey, Somersetshire, he founded *Pearson's Weekly* and *The Daily Express*, and amalgamated *The Evening Standard* with *The St. James's Gazette*. Overtaken by

blindness, he devoted himself to the welfare of those similarly affected, organizing St. Dunstan's Hostel (q.v.). He was made a baronet in 1916. He wrote *Victory over Blindness*, 1919. He died Dec. 9, 1921.

PEARY, ROBERT EDWIN (1856-1920). American explorer. Born May 6, 1856, he entered the U.S. navy in 1881, and was employed in the survey of the proposed Nicaragua Ship Canal. In 1898 he charted the coast N. of Greenland, and in 1908 began the voyage which, according to his own account, led to his discovery of the N. Pole, April 6, 1909. Promoted rear-admiral, 1911, he died at Washington, Feb. 19, 1920. See *Arctic Exploration*.

Peary Land is a desolate ice-bound tract of N. Greenland named after Robert E. Peary.



R. E. Peary,
American explorer

PEAT. Spongy substance of vegetable origin common to almost every temperate country. The larger part of British peat appears to be composed of mosses, hill peat being mainly sphagnum and andromeda, while lowland is principally hypnum moss.

The process of formation is similar to that of the coal measures, but the oldest peat deposits are, geologically speaking, modern compared with coal. Peat bogs cover about 6,000,000 acres in the British Isles, Ireland possessing 3,000,000 acres. They vary greatly in depth.

PECCARY (Dicotyles). Genus of hog-like ungulate mammals with only three toes on the hind foot. They are natives of America from Paraguay to Arkansas.



Peccary. The collared peccary, a tailless mammal of America

PECKHAM. Dist. of London. Part of the met. bor. of Camberwell, S.E., it lies N. of Peckham Rye and Nunhead and W. of New Cross and Hatcham. Peckham Rye, 64 acres, a public recreation ground from time immemorial, has been definitely public property since 1882. Peckham Rye Park, over 42 acres, opened in 1894, has been since enlarged.

PECTIN. Gelatinous substance found in fruits, as apples and gooseberries, and in fleshy roots, as carrots and beets. It causes jams made from fruits to set into a jelly and has a nutritive value similar to that of starch.

PECULIAR PEOPLE. Protestant sect, founded in 1838 by John Banyard. They refuse to make use of medical treatment in case of sickness, relying on prayer and anointing with oil to effect a cure.

PEDAL. Mechanism of musical instruments. Pedals are of various kinds. (1) On the pianoforte they are two levers for the feet, one on the right which allows the tone to be sustained as long as the strings will naturally vibrate, and one on the left which softens the tone. (2) On the harp they are foot levers to raise the pitch of the strings a tone or semitone. (3) On the organ they are wooden keys for the feet controlling the deepest toned pipes, and levers moving the swell shutters and controlling groups of stops.

In music, a note sustained regardless of any changes of harmony is called a pedal point.

PEDICULOSIS. Affection of the skin caused by a minute parasite, of which there are three varieties: the *Pediculus capitis* or head louse, the *P. corporis* vel *vestimentorum* or body louse, and the *P. pubis* or crabs louse, which infects the pubic hair. Children are more often affected than adults with *P. capitis*, and girls more than boys owing to their longer hair.

PEDLAR. General term for an itinerant vendor of small wares. In Great Britain a pedlar is one who sells goods, or his skill in handicraft, as tinkering, chair-mending, etc., on foot. He must obtain annually a licence from the police. See *Hawker*.

PEDOMETER (Lat. pes, foot; Gr. metron, measure). Instrument for indicating the number of steps taken in walking, thus enabling the distance covered to be determined. It is usually constructed in the form of a watch, upon the dial of which are recorded the number of revolutions of a mechanism actuated by a bob or weight oscillated by the movement of the body, or in some cases by a cord connected with the foot. Adjustments are made for the length of step, thus permitting the distance covered to be determined more accurately.

PEDRO I (1798-1834). Emperor of Brazil, 1822-31. Son of John VI of Portugal, he was proclaimed emperor of Brazil in 1822, and in 1825 the independence of that country was recognized. In 1826 he became king of Portugal, but abdicated in favour of his daughter, Maria. After an outbreak in Rio de Janeiro he abdicated the Brazilian throne also, April 7, 1831, and returned to Portugal.

He was succeeded by his son Pedro II, who was proclaimed emperor on his father's abdication. He reigned until he was dethroned after the revolution of 1889, and he died in Paris, Dec. 5, 1891.

PEEBLES. Burgh and co. town of Peebles-shire, Scotland. It stands on the river Tweed, 23 m. S. of Edinburgh on the L.M.S. and L.N.E. Rlys. The chief buildings are the parish church, and those erected for municipal purposes by the liberality of Andrew Carnegie. The town has a hydropathic establishment and a good golf course. Tweed and woollen cloth are manufactured. Market day, Tues. Pop. 5,537.

PEEBLES SHIRE OR **TWEEDDALE.** Inland county of Scotland. Its area is 347 sq. m., and is traversed by the Tweed. Broad Law (2,754 ft.) is the highest summit. Peebles is a pastoral county, and sheep are reared in large numbers. Peebles is the co. town. In conjunction with part of Midlothian one member is sent to Parliament. Pop. 15,300.

LITERARY ASSOCIATIONS. William and Robert Chambers were born in the co. town. James Nicol (1769-1819), poet and miscellaneous writer, was born at Innerleithen. Sir Walter Scott found much inspiration in the county, as also did T. T. Stoddart (1810-80) and J. C. Shairp in *The Bush* Aboon Traquair.

PEEL. Town and watering place of the Isle of Man. It is 11 m. N.W. of Douglas, on the Isle of Man Rly. There are manufactures of sails, nets, boats, etc., but the



Peel. Ruins of the castle on St. Patrick's Isle; right, the roofless cathedral of S. German

people are principally engaged in the fisheries. Joined to the mainland by causeway is St. Patrick's Isle, which contains the ruin of Peel Castle, mentioned in Scott's *Peveril of the Peak*, and the remains of S. German's Cathedral, a cruciform structure dating partly from the 12th century. Pop. 2,455.

PEEL, ARTHUR WELLESLEY PEEL, 1ST VISCOUNT (1829-1912). British statesman. Born Aug. 3, 1829, the youngest son of Sir Robert Peel, he was educated at Eton and Balliol College, Oxford, and entered the House of Commons as Liberal M.P. for Warwick in 1865. He was elected Speaker in 1884, and ranks as one of the ablest occupants of that high office. He retired in 1895, and was made a viscount. In his later years he was associated with proposals for temperance reform. He died Oct. 24, 1912.



Viscount Peel,
British statesman
Elliott & Fry

PEEL, WILLIAM ROBERT WELLESLEY PEEL, 1ST EARL (b. 1867). British politician. The eldest son of the 1st viscount, he was born Jan. 7, 1867, and called to the bar in 1893. He was leader of the municipal reform party and chairman of the L.C.C., and entered Parliament, 1900. In 1919-21 he was under-secretary for war, and in 1922-24 and 1928-29 secretary for India. He was made an earl in 1929.

PEEL, JOHN (1776-1854). Cumberland yeoman, remarkable for his passion for fox-hunting. Born at Caldbeck, Nov. 13, 1776, he died there, Nov. 13, 1854. He is the hero of the song *D'ye ken John Peel?* written by J. W. Graves about 1828-29.

PEEL, SIR ROBERT (1788-1850). British statesman. He was born near Bury, Lancashire, Feb. 5, 1788, the son of a wealthy cotton manufacturer, and was brought up in an atmosphere of intelligent Conservatism. He was educated at Harrow and Oxford, and entered Parliament in 1809. At 24 he became secretary for Ireland; six years later he retired from the Liverpool ministry, to return in 1822 as home secretary, in which capacity he carried several valuable reforms,



Peeblesshire. Map of the inland county of S.E. Scotland

including the establishment of the Metropolitan Police.

In 1834 and in 1839 Peel was called to office as prime minister, but in both cases was obliged to resign after a few weeks. It was not till 1841 that he was able to take office with a decisive Conservative majority behind him. Advancing in successive budgets along the path towards free trade, he introduced the measure repealing the Corn Laws, but at the very moment when the bill passed its final stage Peel was defeated on an Irish question and resigned, June 29, 1846. The Liberals came into office, and were there maintained by the general support of the Peelites, with whom they ultimately coalesced in 1852. Peel died on July 2, 1850, from injuries caused by a fall from his horse.



Sir Robert Peel,
British statesman
After Lawrence

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PEERAGE (Lat. par, equal). Word now applied to peers and members of their families, i.e. to those who can succeed to titles. In the United Kingdom there are five ranks in the peerage, duke, marquess, earl, viscount, and baron. The bishops and the law lords are lords of parliament, but not peers. Peers are created by letters patent.

A peerage may be limited to sons and their descendants, or be extended to daughters or to a brother. The early peers owed their position to tenure of land. A woman can be a peeress, but cannot sit in the House of Lords. Peerages, or works giving biographical details of peers and their families, include Burke, Cokayne, and Debrett. There is also a Jacobite peerage. See Baron; Duke; Earl, etc. The so-called peerage bill was introduced into Parliament in 1720 to prevent the sovereign from creating new peerages. The bill was rejected by the Commons.

PEGASUS. In Greek mythology, the winged horse which sprang from the blood of the Gorgon Medusa, when her head was struck off by Perseus. Pegasus created Hippocrene, the spring of the Muses, with a kick of his hoof.

A club of barristers who are interested in horse racing is called the Pegasus Club. It holds meetings for point-to-point races.

In astronomy, Pegasus is the name of one of the constellations.

PEKINESE. Small breed of dog. It is purely a domestic pet and is seen in several colours, but the golden-tan self-coloured dogs are the truest to type.

The maximum weight is 18 lb., but the smaller dogs are the more desirable.

PEKING OR **PEIPING**. Former capital of China. Situated about 100 m. from the gulf of Chih-li, its pop. is estimated at over 1,300,000. The ancient capital of Yen, Peking became the capital of the Chinese empire in 1264, under Kublai Khan.

It includes the Chinese or outer city and the Tartar or Manchu city, within which is

the Imperial city, inside which is the Forbidden city. The circuit of the outer walls is 24½ m., of the Tartar City 14 m., of the Imperial City 6 m. A moat and a brick wall in the centre of the Imperial city mark off the Forbidden city, in which are the imperial palaces. In the Tartar city is the observatory, which dates from the 13th century. There are some wonderful temples. The Chinese city is the commercial section. There is a national university, also a medical training college. Peking is connected by rly with Hankow, Manchuria, and Kalgan. In 1928 Peking was taken by the nationalists, who changed its name to Peiping and removed the government to Nanking. See China.

PELAGIUS (c. 360-420). British theologian. A great traveller and a student of early literature, he held that sin is not transmitted from Adam, but that each child born into the world is morally clean; that it is possible for him not to sin; and that for all his good deeds he accumulates merit with God. His views were (about A.D. 409) embodied in a Latin commentary on the Epistles of St. Paul, the original form of which was discovered in 1906.

PELARGONIUM. Genus of flowering and ornamental-foliaged plants, including half-hardy succulent and shrubby perennials of the natural order Geraniaceae. Most are natives of S. Africa. See Geranium.

PELECYPODA. Class of the Mollusca, alternatively termed Lamellibranchiata and, popularly, bivalves. The general form and structure of the animals and their shells are exhibited by such familiar species as the cockle, mussel, scallop, and oyster. See Bivalve; Mollusc.

PELÉE, MONT. Volcano of Martinique, French West Indies. Small eruptions had been recorded in 1762 and 1851, and on May 8, 1902, a great eruption destroyed St. Pierre and 30,000 people; on Aug. 30 a second eruption destroyed two villages and 2,500 people. The new cone is 4,400 ft. in altitude.

PELEUS. In Greek legend, king of the Myrmidons in Thessaly, and father of Achilles. His wedding with Thetis, a sea-deity, daughter of Nereus, was of great magnificence, all the gods being invited, except Eris, the goddess of Discord. Pron. Pee-léwss.

PELEW OR **PALAU ISLANDS**. Group in the Pacific Ocean. They lie E. of the Philippines and W. of the Carolines. The total area of the 26 islands is 170 sq. m. and the pop. about 10,000. The islands were sold by Spain to Germany in 1899 and are ruled now by Japan.

PELHAM, HENRY (c. 1696-1754). British statesman. Younger son of Thomas Pelham, made Baron Pelham in 1706, he was educated at Westminster School and Hart

Hall, Oxford. His eldest brother, Thomas Holles Pelham, became duke of Newcastle. Henry entered parliament in 1717. In 1724 he was made secretary at war, and in 1743 became prime minister and chancellor of the exchequer. During his term of office, eleven years, he followed the financial policy of Walpole. He died March 6, 1754. See Newcastle, Duke of.

PELIAS. In Greek legend, king of Iolcus, the throne of which he had seized from Aeson. When

Jason came to claim Iolcus, Pelias sent him in search of the Golden Fleece, in the hope that he would perish. See Argonauts.

PELICAN (Pelicanus). Small genus of about six species of large birds. Their food is fish, which they seek in the shallow waters of rivers and lakes.

The long upper mandible is hooked at the tip, and the lower mandible carries a large pouch, formed by the loose, naked skin of the neck, in which fish can be temporarily stored.

PELION.

Mountain range of ancient Greece. It is in the Thessalian district of Magnesia, near the coast, S.E. of Mt. Ossa. It is famous in Greek mythology as the scene of the conflict between the gods of Olympus and the giants, who are said to have piled Pelion and Ossa on Olympus, to reach the sky.

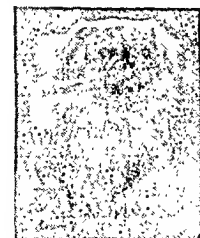
PELISSIER, HENRY GABRIEL (1874-1913). British comedian. A son of Frederic Pellissier, a London diamond merchant, he established the troupe called The Follies, whose songs, dances, and especially parodies of popular plays—potted plays, as they were called—were for some years a feature of London theatrical life. The troupe first appeared in March, 1907, at The Royalty, but it was at The Apollo in 1908 that they made their reputation. Pellissier married, in Sept., 1911, Fay Compton. He died Sept. 25, 1913.



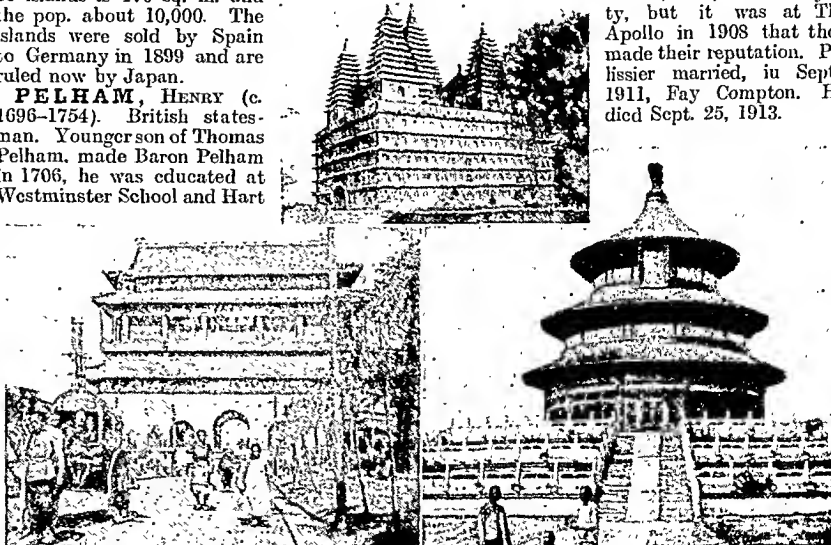
Henry Pelham,
British statesman



Pelican. White species of this large bird
Gambier Bolton, F.Z.S.



Pekinese Dog, a Chinese breed



Peking. Left, ancient city gate. Right, part of the 15th century Temple of Heaven, one of the greatest shrines in China. Above, Temple of the Five Towers, built in 1474, in the suburb of Hai-Tien

PELLEGRINI, CARLO (1839-89). Italian caricaturist. Born at Capua, he served in Garibaldi's army, came to England in 1865, and was engaged by Vanity Fair. To this journal he contributed hundreds of portraits of notabilities over the signatures Singe or Ape. He died in London, Jan. 22, 1889.

PELLITORY (*Parietaria ramiflora*). Perennial herb of the natural order Urticaceae. It is a native of Europe, N. Africa, and W. Asia, and is usually found growing on old walls. It has greenish flowers. Under the influence of sunshine, or slight irritation, the anthers explode and little clouds of pollen are seen.

PELOPONNESE or **PELOPONNESUS** (Gr. island of Pelops). The S. portion of ancient Greece. It was divided into seven states. Achaëa, Corinthia, Elis, Argolis, Messenia, Laconia, and Arcadia. It is the modern Morea. See Greece.

PELOPONNESIAN WAR. This name is given to the war in 431-404 B.C. between Sparta and Athens. The ostensible cause was the quarrel between Coreyra and Corinth, in which Athens supported the former and Sparta the latter. In reality, it was a struggle between the democratic Ionians of Athens, the islands, and the maritime towns, and the oligarchical, continental Dorians, represented by Sparta.

PELOPS. In Greek legend, the son of Tantalus, king of Phrygia. Being expelled from his native country, he migrated to Pisa, where he became one of the suitors of Hippodamia, daughter of King Oenomaus. The conditions of winning were that he should enter for a chariot race with her father, in which unsuccessful competitors were put to death. Pelops won the race by inducing Myrtilus, the king's charioteer, to remove the lynch-pin from his master's chariot wheel.



Mary Herbert,
Countess of
Pembroke
After Mark Gernads

PELOTA (Lat. *pila*; Span. *pella*, ball). Ball game popular in Spain and Spanish America. Players wear a curved basket attachment for the right hand. The game is known in Spain as *el ble a cesta*, or basket play. The hard ball weighs about 4 oz., is made of rubber and wire, and is covered with leather. It is struck violently with the cesta against two walls of cement at right angles, known as the frontón and the pared respectively.

Pelton. Colliery centre of Durham. It is 6 m. from Durham, with a station on the L.N.E.R. Pop. 8,815.

PELVIS (Lat. basin). Bony girdle which connects the trunk with the lower extremities, supports the weight of the body, and contains the pelvic viscera. The pelvis consists of the two innominate or hip bones, one on each side, which meet in front, and are separated behind by the sacrum, terminating in the coccyx.

PEMBA. British island off the coast of Tanganyika Territory, Africa. Of coral formation, it has an area of 372 sq. m., and is divided into three districts. The chief products are cloves, copra, and rubber. Pop. 88,691.

Pemba Bay is on the coast of Portuguese E. Africa. About 120 m. N. of Mozambique, it is one of the finest harbours in the world.

PEMBREY. Seaport of Carmarthenshire, Wales. It is 4 m. from Llanelly, on the Gwent. It has a harbour and docks, and there are copper-smelting works. The river Burry enters the sea here. Pop. 5,544.

PEMBROKE. Borough, seaport, and market town of Pembrokeshire, Wales. It stands on the S. side of Milford Haven, 42 m. W. of Swansea, on the G.W.R. S. Mary's church has an old massive tower; the castle is

one of the finest ruins in Wales, and there are remains of a Benedictine house, Monckton Abbey. Market day, Mon. Pop. 15,481.

The borough includes Pembroke Dock, 2 m. away. This was a government dockyard from 1814 until it was closed in 1925. In 1929 it was handed over to the Royal Air Force.

PEMBROKE. Town of Ontario, Canada. It stands on Lake Allumette, a widening of the Ottawa river, 220 m. from Montreal. Industries include lumber mills, saw mills, brick-yards, and tanning. Pop. 7,875.

PEMBROKE, EARL OF. British title held by the family of Herbert. The first earl was Gilbert de Clare, created in 1138, and the second his son Richard (Strongbow). In 1176 the title passed to Strongbow's son-in-law, William Marshal. In 1245 William de Valence secured the earldom by marriage. In 1551 Sir William Herbert was made earl, and the title has since been held by his descendants. The earl's chief seat is Wilton House, near Salisbury, built in its present form by Inigo Jones. His eldest son is called Lord Herbert.

PEMBROKE, MARY HERBERT, COUNTESS OF (1561-1621). Fourth daughter of Sir Henry Sidney and wife of Henry Herbert, earl of Pembroke. Born at Ticknell Palace, Bewdley, Worcestershire, Oct. 27, 1561, she was one of the most learned women of her time and a patroness of Spenser, Ben Jonson, and other poets. Her brother, Sir Philip Sidney, wrote his *Arcadia* (q.v.) for her. She died Sept. 25, 1621, and was the subject of the famous epitaph "Underneath this sable hearse," attributed to Ben Jonson.

PEMBROKE, WILLIAM HERBERT, 3RD EARL OF (1580-1630). English statesman. Born at Wilton, April 8, 1580, he was lord chamberlain to James I, held office under Charles I, and was chancellor of Oxford University. To him and his brother Philip Shakespeare dedicated his *First Folio*. He died at Wilton House, April 10, 1630.



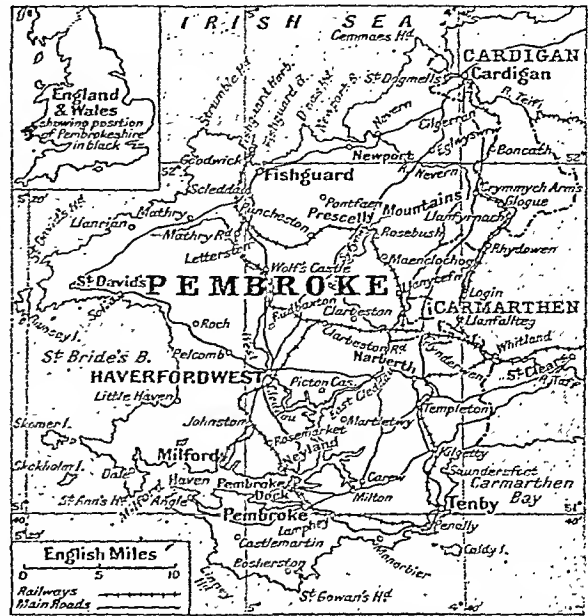
William Herbert,
3rd Earl of
Pembroke
After Van Dyck

PEMBROKE COLLEGE. College of the university of Oxford. It was founded in 1624 by James I, and so named as a mark of esteem for the earl of Pembroke, then chancellor of the university. The buildings are in S. Aldate's, opposite Christ Church, and its most distinguished name is Samuel Johnson.

Pembroke College, Cambridge, was founded in 1346, in memory of her husband, by Mary, widow of Aymer de Valence, earl of Pembroke. The younger Pitt was educated here.

PEMBROKESHIRE. Maritime co. of Wales. It has a rugged and irregular coastline, and an area of 614 sq. m. The surface is scored with valleys. The Teifi divides it from Cardiganshire. The G.W.R. serves the co. Haverfordwest is the co. town. Fishguard is a modern port and Newport an old one. The chief industry is the rearing of cattle. The co. is in the diocese of S. David's and sends one member to Parliament.

Called Dyfed, Pembrokeshire was ruled by the princes of Wales until after the Norman conquest. In the 12th century Flemings settled here, and Pembrokeshire was divided into a Welsh part in the N.W. and an English



Pembrokeshire. Map of the south-western county of Wales

part in the S.E. The English part became a palatine earldom until 1536. The co. contains a number of castles, and its ecclesiastical buildings, which include those at S. David's, Tenby, and Haverfordwest, are particularly interesting from an architectural point of view. Pop. (1921) 92,000.

Pemmican. Preparation of food. It is made by the American Indians with lean meat, dried and pounded into a paste.

PENAL SERVITUDE. In English criminal law, a form of punishment which in 1853 superseded transportation. Imprisonment may extend from a minimum of three years to a maximum of life. Convicts wear a dress marked by a broad arrow, and are employed on useful work, taught a trade, etc. *P.*; good conduct a remission of sentence may be earned, and the home secretary is empowered to grant licence or tickets-of-leave to convicts. Convict establishments are Dartmoor and Parkhurst (the former used exclusively for males, the latter chiefly occupied by prisoners in ill-health), Broadmoor for criminal lunatics, Aylesbury for females, and Peterhead, Scotland. See Hard Labour.

PENANCE (Lat. *poenitentia*, repentance). Eccles. term for the turning of a sinner from sin to repentance; for the acts that form the visible proof of repentance; for the penitential discipline of the Church, and, in the R.C. communion, for the sacrament for the remission of sin committed after baptism. Originally the expiatory part of penance involved heavy and lasting penalties. In process of time the penalties came to be confined to prayers, fasting, and alms-giving.

PENANG. One of the Straits settlements. A British crown colony since 1867, it comprises the island of Penang, Province Wellesley on the Malay Peninsula, and the Dindings. Penang Island has an area of 108 sq. m., and contains George Town, the port and capital. Province Wellesley includes 280 sq. m., and has 45 m. of coast. It is traversed by the main W. railway of Malaya from Singapore to Siam, and a branch goes to Prai, whence steam ferries make connexion with George Town. Both Penang and Prov. Wellesley have numerous motor roads. The Dindings Territory covers 183 sq. m. and comprises a group of islands, of which Pangkor is the largest.

Penang Island was bought from the native state of Kedah in 1785, and Province Wellesley was ceded by the same state in 1798. Pop., including the Dindings, 306,000. See Malaya

PENARTH. Urban dist., watering place, and seaport of Glamorganshire, Wales. It stands on the Ely, 4 m. from Cardiff, on the G.W.R. It has a tidal harbour and commodious docks. Pop. 17,097.

Penates. Household gods of the ancient Romans, at one time distinct from, but afterwards identified with, the Lares (q.v.).

PENDLEBURY. District of Lancashire. It is 3½ m. N.W. of Manchester, on the L.M.S. Rly. It forms part of the urban district of Swinton and Pendlebury. Pop. 10,130.

PENDLESIDE SERIES. In geology, the name given to a series of rocks between the upper division of the Carboniferous limestones and the Millstone grits.

PENDULUM. Rigid body free to swing on a horizontal axis under the influence of gravity. A compensation



Penelope. From a Greek sculpture in the Vatican

pendulum is one compensated against changes of temperature. Besides its use in regulating clocks and for obtaining the value of the acceleration due to gravity, the pendulum has been used in the famous experiment of Foucault to show the rotation of the earth. A ballistic pendulum is one used to measure the velocities of explosives. See Ballistics; Clock; Gun.

PENELOPE. In Greek legend, wife of Odysseus (q.v.). The long absence of her husband caused a number of suitors for her hand to come to the royal palace at Ithaca, where, in spite of her refusals, they lived riotously. She promised to make up her mind as soon as she had finished a garment, of which she secretly unwove each night as much as she had woven in the day. Pron. Pe-nel'oppy.

PENETANGUIS SHENE OR **PENETANG.** Town of Ontario, Canada. It is on an inlet of Lake Huron, in Simcoe co. During the war with the U.S.A. the town was fortified as a Canadian naval station. Pop. 4,037.

Penge. Urban dist. of Kent. Adjoining Lower Sydenham, it is 6 m. S. of London, on the S.R. Pop. 26,430.

PENGUIN.

Name applied to the several genera of the order Impennes. They are sea-birds with boat-shaped bodies, legs placed very far back, the toes webbed, and the wings useless for flight, but efficient paddles. The birds stand erect, move grotesquely, and assemble in thousands at their breeding places. The Macaroni Penguins (Eudyptes) have long, curling crests on their heads. The "Jackass" or braying penguin is found at the Cape of Good Hope. Their range extends from the equator to the Antarctic.



Penguin. King penguin, from the Antarctic seas

PENICUIK OR **PENNYCUIK.** Burgh of Midlothian, Scotland. It stands on the N. Esk river, 10 m. from Edinburgh. The buildings include the tower of the old church of S. Kentigern and the Cowan Institute. The name means cuckoo's hill. Pop. 2,673.

PENINSULAR WAR. Struggle carried on by Great Britain as the ally of Spain and Portugal against France between 1808-14. This name was given to it because it was waged in the Iberian peninsula. The Spanish people, over whom Napoleon had placed his brother Joseph, rose in revolt, and secured the surrender of a French force at Baylen in July, 1808. The Portuguese joined the movement, and in Aug., 1808, the directors of British policy, having realized the possibility of striking at France through Spain, sent out Sir A. Wellesley (later duke of Wellington). The battles in the campaign included Vimero, Corunna (in which Sir John Moore was killed), Talavera, Busaco, Fuentes d'Onoro, Albuera, Salamanca, and Vittoria, after which the French, driven into their own country, finally stood before Toulouse, which was entered in April, 1814, when the abdication of Napoleon ended the war.

The British losses were put down as 36,000. The French lost heavily, too, while this "running sore," as Napoleon called it, was one of the chief causes of his overthrow.

PENISTONE. Market town and urban dist. of Yorkshire (W.R.). It stands on the Don, 12 m. from Sheffield, on the L.M.S. and L.N.E. Rlys. There is an old grammar school here. Penistone gives its name to a division returning one member to Parliament. Market day, Thurs. Pop. 3,791.

PENKRIDGE. Market town of Staffordshire. It is 6 m. from Stafford on the L.M.S. Rly. It has an agricultural trade, and stone is quarried in the neighbourhood. Market day, Mon. Pop. 2,570.

PENLEY, WILLIAM SYDNEY (1851-1912). British actor. Born at St. Peter's, Thanet, the son of a schoolmaster, he made his name as a comedian in The Private Secretary. His reputation, however, rests still more upon his appearances in Charley's Aunt. He died Nov. 11, 1912.

PENMAENMAWR. Urban dist. and watering place of Carnarvonshire, Wales. It is about 4 m. from Conway on the L.M.S. Rly. Penmaenmawr Mt., 1,550 ft. high, is the N. extremity of the Snowdon range. Pop. 4,000.

PENN, WILLIAM (1644-1718). English Quaker, founder of Pennsylvania. The son of Sir William Penn (1621-70), he was born in London, Oct. 24, 1644, and

while at Christ Church, Oxford, became converted to Quakerism, which led to his imprisonment for infringing the Conventicle Act. In 1676 he took a leading part in the foundation of a Quaker colony in West New Jersey, and five years later secured a grant of the territory which was to form the state of Pennsylvania (q.v.). In 1682 he crossed to America to take possession of his territory, fixed on the site for its capital, to be named Philadelphia (q.v.), and made his treaty of friendship with the Indians. Penn remained in Pennsylvania until 1684, and again from 1699-1701, but his later life was passed in supporting the efforts of the Friends in England. He died at Ruscombe on May 30, 1718, and was buried at Jordans (q.v.).

PENNANT OR **PENNON** (Lat. penna, plume). A long flag narrowing to a point, sometimes forking at the end, formerly borne on a lance by a knight bachelor. In the nautical sense, the pennant, or pendant, is a long streamer-like flag flown at the mast of a vessel in commission, and lowered when the vessel goes out of commission. A broad pennant, short and forked, is flown to show the ship of the commodore of a squadron.



William Penn, English Quaker After H. West

PENNELL, JOSEPH (1860-1926). American etcher. Born at Philadelphia, U.S.A., July 4, 1860, he spent much time in Great Britain, and was the author, with his wife, Elizabeth Robins, of the standard Life of J. McWhistler. He was a prime authority on lithography. Great industrial undertakings, e.g. the Panama Canal, and British munition works during the Great War, furnished subjects for his art. He died April 23, 1926.

Pennenden Heath. Common in Kent. Near Maidstone, it has been made into a recreation ground for that town.

PENNINE CHAIN. Mountainous region of N. England. It extends S. from the Scottish border as far as the great curve of the Trent; the S. portion is the Peak. Its continuity is broken by the Tyne and Aire Gaps. On the N.W. it is continuous with the Cumbrian upland, the lowest point being the Shap saddle between Edendale and the



W. S. Penley, in character as The Private Secretary

flats round Morecambe Bay. The loftiest summits are Cross Fell, 2,892 ft., Mickell Fell, 2,591 ft., Wharfedale, 2,414 ft., Ingleborough, 2,373 ft., and Kinder Scout, 2,088 ft.

PENNSYLVANIA.

State of the U.S.A. The Delaware river forms the E. boundary, and the state touches Lake Erie in the N.W. corner. The other rivers include the Susquehanna and Allegheny. Its area is 45,126 sq. m. Iron, coal, anthracite, and petroleum are found in large quantities. The chief crops are hay, corn, wheat, and oats. There are numerous steel works,

and the state engages in tinplate and iron working, and the making of pig iron rails, silks, woollens, leather, glass, and tobacco. Rly. and waterway transport are highly developed. Harrisburg is the capital, and the chief towns include Philadelphia, Pittsburg, Reading, and Erie. Pennsylvania owes much to William Penn, who gave it that liberal and democratic basis which helped its rapid growth. Estimated pop. (1928) 9,854,000.

PENNY. British bronze coin, one-twelfth of a shilling. Originally the penny was a silver coin, of which 240 weighed a pound. Hence the pennyweight (dwt.), the 240th part of 1 lb. troy. Till the reign of Edward I the coin was indented with a cross, enabling it to be divided into halfpennies and farthings. Silver pennies were coined until the reign of Charles II, but steadily decreased in weight. The bronze penny was introduced in 1800.

PENNY BANK. This name is given to a class of savings bank that receives deposits as low as a penny. Many such were established in Great Britain during the 19th century.

PENNYROYAL

(Mentha pulegium). Perennial herb of the natural order Labiatae. A native of Europe, N. and W. Asia, and N. Africa, it has a creeping root-stock. The small leaves are oval or oblong, with toothed edges. Its tubular, two-lipped, lilac flowers are borne in whorls around the upper part of the stems. From the fresh tops and leaves a medicinal oil is distilled.



Penny, British copper coin, one-twelfth of a shilling

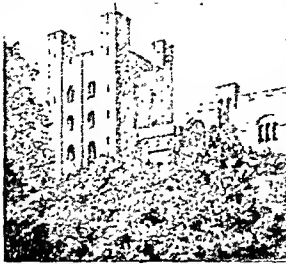
PENNYWORT OR **PENNY-LEAF**. Name given to a wall plant better known as the wall pennywort; also to the white-rot or marsh pennywort (*Hydrocotyle vulgaris*).

PENOBSCOT. River of Maine, U.S.A. Rising close to the Canadian border, it enters the Atlantic through Penobscot Bay. It is about 360 m. long, and supplies water power to many paper and pulp mills.

Penobscot Bay is an inlet on the coast of Maine, U.S.A. It is divided into two portions by a chain of islands, and is 30 m. long.

PENRHYN. District of Carnarvonshire, Wales. It is chiefly known for its connexion with the slate quarries, the slate being shipped from Port Penrhyn on the Menai Strait.

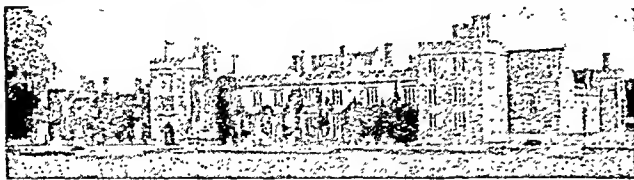
The title of Baron Penrhyn has been borne by the family of Douglas-Pennant since 1866. Richard Penryn was made Baron Penryn in 1763. In 1808 the estates passed to a kinsman, George Hay-Dawkins-Pennant, and from him to his daughter, who became the wife of Col. E. G. Douglas (1800-86), a son of the earl of Morton. He was made Baron Penrhyn in 1866. The family seat is Penrhyn Castle, near Bangor.



Penrhyn, N. Wales. Keep and garden front of the 18th century castle
Frith

PENRITH. Urban dist. and market town of Cumberland. It is 12 m. from Carlisle on the L.M.S. and L.N.E. Rlys. There is a 14th century grammar school and the ruins of a castle. In the neighbourhood are Edenhall and Brougham Castle. Penrith Beacon is 940 ft. high. The chief industries are hewing, tanning, and a trade in agricultural produce. Market day, Tues. Pop. 8,342.

PENRITH. Town of New South Wales, in Cumberland co. It is 34 m. W. of Sydney by rail, and stands at the foot of the Blue Mountains in the valley of the Nepean river. It was one of the first settlements. Pop. 2,500.



Penshurst, Kent. Penshurst Place, the mansion of Lord de L'Isle and Dudley, where Sir Philip Sidney was born in 1554. See below

PENRYN. Borough and market town of Cornwall. It stands on the estuary of the Penryn river, $3\frac{1}{2}$ m. from Falmouth, on the G.W. Rly. The chief industries are tanning, brewing, the making of chemicals and paper, and the export of granite. In the Middle Ages it was a seaport. Market day, Sat. Pop. 3,151.

PENSHURST. Village of Kent. It is 5 m. S.W. of Tonbridge on the S.R. The church, dating from about 1200, but much restored, has some old brasses and other monuments of note. Penshurst's chief glory is Penshurst Place, in its park of 350 acres. It passed in 1552 to Sir William Sidney, grandfather of Sir Philip Sidney, in the possession of whose descendants it has remained. Pop. 1,531. See illus. above.

PENSION (Lat. pensio, payment). Stated allowance made to certain classes of retired workers, soldiers, sailors, civil servants, and others. In Great Britain £1,200 is distributed

by the state each year among literary and artistic persons or their survivors. These are the civil list pensions.

Fighting men's pensions were the subject of legislation in the 16th century. The Crimean War saw the establishment of the Royal Patriotic Fund, which raised the sum of nearly £1,500,000.

The Great War was responsible for an enormous addition to pensions paid by the state. These war pensions, for which special legislation had to be passed, are of several classes. A disablement pension is awarded to ex-service officers and men, and at the outset is a temporary award based on medical assessment of the degree of disablement. This temporary pension is usually given for a period of 12 months, after which the case is reviewed and a final award made. The pension for a private soldier 100 per cent. disabled is 40s. a week, and 7s. 6d. for the first child, and 6s. for each other child. A widow's pension, which ceases on re-marriage, is 26s. 8d. a week if she is over 40 or with children. If under 40 and without children it is 20s.

The expenditure in the year 1929-30 was estimated at about £53,743,500. The pensioners of former wars have had their pensions increased to the modern scale, and allowances are given to dependants other than widows and children.

CONTRIBUTORY PENSIONS. In addition to the old age pensions (q.v.) there is in force a system of contributory pensions introduced in 1925 and extended in 1929. By this, persons insured under the health insurance scheme pay an extra sum weekly, and both they and their wives receive pensions of 10s. a week at the age of 65 instead of waiting until they are 70. Moreover, if the insured man dies at any time, a pension of 10s. a week is granted to his widow, with additional allowances for each young child. If he leaves orphans they are entitled to 7s. 6d. a week each. The combined contribution for health and pensions is 1s. 6d. a week for men and 1s. 1d. for women in Great Britain. In Northern Ireland it is 1s. 4d. and 11d. respectively.

The Ministry of Pensions is a department of the British Government. It was formed in 1916 to deal with the payment of pensions to sailors, soldiers, and their dependants. The minister has a salary of £2,000 a year, and the head offices are at 18, Great Smith Street, Westminster, London, S.W.1., and the issue offices are at Acton, W.

PENTATEUCH (Gr. pente, five: teuchos, volume). Term used by Christian scholars from the time of Tertullian and Origen to designate collectively the first five books of the O.T. (Genesis, Exodus, Leviticus, Numbers, Deuteronomy). Some scholars contend that the sixth book (Joshua) is inseparable from the other five, and that it is better to use the term hexateuch (q.v.).

PENTECOST (Gr. pentecostē, the 50th). Jewish festival, also known as the Feast of Weeks. It is observed on Sivan 6-7, and was so called because it was celebrated 50 days from the morrow of the Sabbath after the Passover. The festival corresponds with the Christian Whitsuntide.

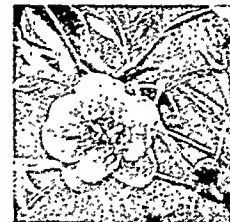
PENTLAND FIRTH. Strait separating the Orkney Islands from Caithness, Scotland, and connecting the North Sea with the Atlantic Ocean. The channel is 14 m. long and from 6 to 8 m. broad. There is a lighthouse on one of the rocks known as Pentland Skerries, at the E. entrance.

PENTLAND HILLS. Range in Scotland. It extends for about 16 m. S.W. through Midlothian, Peeblesshire, and Lanarkshire, and has a breadth of from 4 to 6 m. The highest summits are Seald Law (1,898 ft.) and Carnethy (1,980 ft.). See Edinburgh.

PENTONVILLE. Dist. of London. In the borough of Islington, it is named after the estate of Henry Penton, M.P. (d. 1812), which began to be built upon about 1773. Pentonville prison was erected in 1842 by Sir Joshua Jebb, in the Caledonian Road, Islington, and was the first of what were known as model prisons to deal with the new solitary confinement of convicts. See Prison.

PENTSTEMON OR **BEARD-TONGUE**. Genus of perennial herbs and sub-shrubs of the order Scrophulariaceae. They are natives of America, and have tubular two-lipped showy flowers of red, blue, violet, or white, in upright sprays. Many species, with varieties and hybrids, are grown in gardens.

PENZANCE. Borough, market town, seaport, and watering place of Cornwall. It stands at the head of Mount's Bay, 325 m. from London and 8 m. from Land's End, with a station on the G.W. Rly. It has a very mild climate. There is an old market cross, the Morrab gardens, and a statue



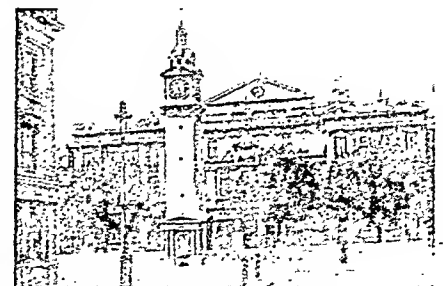
Peony. The Chinese variety, *Paeonia Intea*

to Sir Humphry Davy, a native. St. Michael's Mount and the Seilly Isles can be visited from here. The industries include fishing for mackerel and pilchard, and the shipping of tin, china clay, granite, etc. Market day, Thurs. Pop. 12,096. See Land's End.

PEONY (*Paeonia*). Genus of hardy perennial herbs, some of which are evergreen.

of the order Ranunculaceae. They are natives of Asia, S. Europe, and America. *Paeonia officinalis* and *P. albiflora* were introduced into Britain in 1548. They range in height from 2 to 5 ft., and their colours vary from white to crimson, though there is a yellow variety. The tree peony (*P. moutan*), of China and Japan, grows to a height of about 12 ft., with a shrubby habit.

PEOPLE'S PALACE. Institution in Mile End Road, East London, England. The original foundation was a bequest by J. E. B. Beaumont (1774-1840), to provide for the recreation and moral and intellectual advancement of the working classes in the East End of London, and large donations to the endowment fund were subsequently made. The existing buildings, opened in 1887, include the Queen's Hall, where industrial and other exhibitions and concerts are held, a technical school (now the East London College, attached to the university of London), and other equipment for education, recreation, etc.



People's Palace, London. Main front of the building, which is in Mile End Road

PEPPER (*Piper nigrum*). Climbing shrub of the order Piperaceae. It is a native of the E. Indies, and has a wavy stem and large, broad oval, alternate leaves. The minute flowers—without sepals or petals—are crowded in hanging sprays. The little rounded red fruits ultimately become black, when they are the peppercorns of commerce. When ground to powder they form black pepper; white pepper is produced from the shrub's fruit of which the outer fleshy coat has been removed before ripening.



Pepper. Leaves and flower sprays. Inset, fruit

PEPPERCORN. Berry of the pepper plant, used as a synonym for something of little or no value. A peppercorn rent is a term in English law for a nominal rent.

PEPPERMINT (*Mentha piperita*). Strong-scented perennial herb of the order Labiatae. It is a native of Europe, and has creeping underground stems which send vertical branches into the air. The opposite, coarsely toothed leaves are oval or broad lance-shaped, the flowers purple, in loose spikes. Oil of peppermint, extensively used as a gastric stimulant in certain forms of dyspepsia, is distilled from the leaves. See Mint.



Peppermint. Branch with foliage and flowers

PEPPER TREE (*Drimys aromatica*). Small aromatic evergreen tree of the order Magnoliaceae. A native of Tasmania, it has oblong leaves with transparent dots, and white flowers, the sexes being separate. The many-seeded, globular fruit is sometimes used as a substitute for pepper.

PEPSIN. Enzyme or ferment present in the gastric juice of the stomach. It acts upon protein, the essential constituent of meat, converting it into simpler substances in the process of digestion. Pepsin only acts in this way in the presence of free hydrochloric acid. See Digestion; Pancreas.

PEPYS, SAMUEL (1633-1703). English diarist. Born in London, Feb. 23, 1633, fifth son of John Pepys, tailor and member of an old East Anglian family, he was befriended by a relative, Sir Edward Montagu, 1st earl of Sandwich, and held several offices in connexion with the admiralty, including that of secretary. He represented Castle Rising and Harwich in Parliament, and proved an untiring and patriotic official. He was president of the Royal Society,



Samuel Pepys, English diarist. Nat. Port. Gall.

1684-86. He died May 26, 1703.

Among the MSS. preserved with Pepys's library at Magdalene College, Cambridge, was his Diary, written in cipher, Jan. 1, 1659-May 31, 1669. In this work, the most intimate human document of its kind, he supplies a vivid picture of his own character, and throws invaluable sidelights on the court, official, and social life of his time. The Diary was first deciphered by John Smith, 1819-22, and first published 1825. Pron. Peeps

PERA or **BEYOGLU**. Suburb of Istanbul (Constantinople). Situated on the N. side of the Golden Horn and adjoining Galata, it

is the European quarter. An underground cable lift descends from Pera to Galata and affords access to the Galata bridge and the quays. See Golden Horn; Istanbul.

PERAK. Most northerly of the Federated Malay States. It surrounds the Dindings, a detached portion of Penang, and lies between Kedah and Siam on the N. and Selangor on the S., and has a long coast on the Strait of Malacca. Tin is mined, and rubber and rice are grown. Its area is 7,800 sq. m. Pop. 600,000. See Malaya.

PERCEVAL, SPENCER (1762-1812). British statesman. Born Nov. 1, 1762, second son of John Perceval, 2nd earl of Egmont, he entered Parliament as Tory member for Northampton in 1796. On Pitt's retirement in 1801 Perceval became solicitor-general, and attorney-general in 1802. He was leader of the House after Pitt's death in 1806, and became chancellor of the exchequer in 1807, and prime minister and first lord of the treasury in 1809. Perceval was assassinated in the lobby of the House of Commons on May 11, 1812, by Bellingham, a crazy bankrupt.



Spencer Perceval, British statesman after Sir W. Beechey

PERCH (*Perca fluviatilis*). Fresh-water fish of the order Acanthopterygii. It is a native of Britain, the greater part of Europe, and much of N. Asia. The skeleton is shown in p. 603. It has a somewhat oblong body, with the back humped above the pectoral fins. There are two dorsal fins, of which the anterior is conspicuous from its superior size and strong, sharp-pointed rays. Ordinarily the perch attains a length from 9 to 12 ins. and a weight of 2-3 lb. See Climbing Perch.



Perch, a fish common in European and North Asiatic rivers

PERCUSSION. Musical term. Percussion instruments are those in which sound is set up by being struck either with sticks (gong, and all drums), with hammers (pianoforte, dulcimer, glockenspiel, xylophone, etc.), with a steel rod (triangle), with clappers (bells), or, being in pairs, by being struck against one another (cymbals, castanets, etc.).

PERCUSSION CAP. Small case of explosive, which may be ignited by the shock of a blow and is used to convey ignition to the propellant charge of a gun or rifle. In the old muzzle-loading guns the percussion cap was a separate copper case, containing fulminate of mercury, which was placed on a hollow nipple, the bore of which communicated with the powder chamber. The next efforts to improve firearms were made with the object of combining powder, shot, and means of ignition in one cartridge, which could be inserted in the breech, and in 1836 the pin-fire breech-loader was introduced. In this a projecting pin on the cartridge was driven in by the hammer and ignited a ball of fulminate.

PERCY. Name of a noble English family. It was founded by William de Percy, who was granted large holdings in the northern counties by William the Conqueror. Henry, 12th Baron Percy, was created earl of Northumberland, July 16, 1377. The title died out in 1670, but was revived for the family of Seymour, and passed later to Sir H. Smithson, whose son took the name of Percy. See Northumberland.

PERCY, THOMAS (1729-1811). British prelate and man of letters. Born at Bridgnorth, April 13, 1729, he devoted himself to the study of old literatures, and published, in 1765, the famous *Reliques of Ancient English Poetry*. The foundation of this work was a folio MS. of about 200 poems which had been compiled about the middle of the 17th century. Percy's translation of P. H. Mallet's *Northern Antiquities*, published in 1770, aroused a similar interest in old Norse records. Of Percy's original work the only piece that deserves to be remembered is the ballad, *O Nancy, wilt thou go with me?* Made dean of Carlisle in 1778, and bishop of Dromore in 1782, he died Sept. 30, 1811.



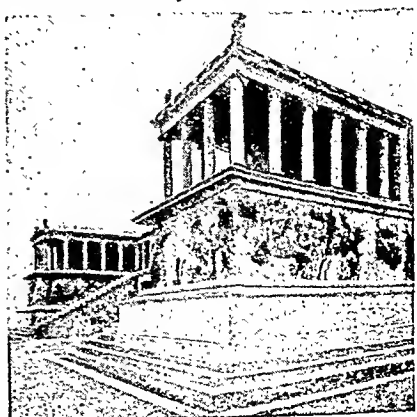
Thomas Percy, British prelate After Reynolds

PEREGRINE FALCON (*Falco peregrinus*). Bird of prey formerly much used for hawking. A native of Britain, and found in most other parts of the world, it nests chiefly on sea-cliffs. Adult birds have the crown of the head and the moustaches bluish black, the back and upper parts bluish grey. The size is about that of the rook. It has a very rapid, graceful flight. Its prey is chiefly the larger birds, including pigeons, grouse, and duck. See Falcon.

PÈRE LACHAISE. Cemetery of Paris. Situated in the N.E. of the city, in the Boulevard de Ménilmontant, it is the oldest and largest extra-mural cemetery of Paris, covering about 212 acres. The ground occupied by it formerly belonged to the Jesuits, and the cemetery received its name from Père François de La Chaise, who was superior of the order in Paris. On the suppression of the order the ground was sold and passed through a number of hands, until in 1804 it was purchased by the municipality and converted into a cemetery. It is celebrated by reason of the famous people buried there.

PERENNIAL. Plant that lives through a number of years. The term is restricted in its use to herbaceous plants, to distinguish the long-lived species from annuals and biennials. Perennial herbs with stems die down to the earth, as a rule, before winter, their vitality being preserved in root-stocks, bulbs, or tubers. Stemless and creeping perennials, such as the primrose and white arabis, retain at least some of their leaves until the new leaves of spring are expanded.

PERGAMUM or **PERGAMUS.** Ancient city of Mysia, Asia Minor. The modern Bergama, it is about 20 m. from the sea, on the N. bank of the Caicus. The kingdom established by Philetaerus in 280 B.C.



Pergamum. Restoration of the south wing of the great altar of Zeus

reached its zenith in 190 B.C. under Eumenes II, who was tactful enough to identify himself with the all-conquering Romans, and received from them most of W. and central Asia Minor. Eumenes founded the great library and beautified the city with many fine buildings and sculptures. In 133 B.C. Attalus III, the last king, died, and the kingdom passed to the Romans. Excavations have revealed a great altar of Zeus, with colossal reliefs of the battle between the gods and giants, now in Berlin. Another example of the statuary of the Pergamene school is the Dying Gaul, falsely called the Dying Gladiator, now at Rome.

PERGOLA (Ital. arbour). Name given to a trellis erection spanning a garden walk, upon which flowers and creepers, e.g. clematis, wistaria, and jasmine are trained. It was introduced from Italy.

PERI. In Persian mythology, a fairy-like being of a race between angels and demons. They are harmless and beautiful, but are excluded from Paradise.

PERICARDIUM (Gr. peri, around; kardia heart). Fibro-serous membrane which encloses the heart. The base of the pericardium is attached to the central part of the diaphragm, and the apex surrounds the commencement of the aorta or main blood vessel of the body. The pericardium contains in health a small amount of lymph, the function of which is to lubricate the two surfaces and thus facilitate the movements of the heart.

Inflammation of the pericardium is called pericarditis. The most frequent cause is acute rheumatism. Counter-irritation should be applied over the heart, and sometimes fluid is drawn off by tapping.

PERICLES (c. 499-429 B.C.). Athenian statesman. He made his appearance in public life in 469, and, six years later, in conjunction with his colleague Ephialtes, procured the important reform restricting the powers of the aristocratic Areopagus (q.v.). The murder of Ephialtes in 461 left him without a rival in his own party. In 443 B.C. the exile of the conservative leader Thucydides left him without a rival in the state, in which he continued supreme until his death in 429.

Pericles regarded the state as existing in the interests of the whole, not of a class. He made Athens free, and he made her the first state in the Grecian world, but he did not give her the organization which might have fitted her to retain the position he won for her. He saw that the true policy for Athens was to establish her own naval supremacy, and her primacy in a league of maritime states. The age of Pericles was the most brilliant in the history of Greece. See Greece.

PERIDOTITE. Name given to a group of crystalline igneous rocks. They consist chiefly of olivine, together with augite, hiotite, hornblende, hypersthene, and magnetite, etc. The rocks are rich in magnesia, and for that reason are alternatively known as magnesian rocks. Peridotites are often rich in iron, and on decomposition pass into serpentine, most of which rock has been so formed. See Olivine; Serpentine.



Pergamum. Bronze group of a Gaulish warrior slaying his wife and himself to avoid capture. Museo delle Terme, Rome

PERIM. Rocky island in the straits of Bab-el-Mandeb under British control. It commands the entrance to the Red Sea, and is 97 m. W. of Aden. It is about 5 sq. m. in area, and is a coaling depot. It is administered as a dependency of Aden. Pop. 1,200. See Arabia.

PERIPATUS. Caterpillar-like animal about three inches in length, whose organization is intermediate between that of the annelids and the arthropods. The cylindrical body is built up of soft rings, and has 17 pairs of short conical feet ending in a pair of hooked claws. The head bears a pair of antennae, two simple eyes, and a mouth provided with swollen lips and four horny jaws. Originally classed as a slug, and later as a worm, it has since been put in a class (Onychophora) by itself. About 50 species of peripatus are known, which have been found in S. Africa, S. America, the W. Indies, and New Zealand.

PERISCOPE (Gr. peri, around; skopein, to watch). Apparatus for observing from a concealed position or enabling an observer to see over obstructions. It consists usually of reflecting mirrors or prisms fixed in a tube, one set of mirrors reflecting the object down the tube and the other to the eye of the observer. The submarine periscope has additional lenses in the tube itself and a special eyepiece. The diagram gives a sectional view of a submarine periscope. The picture enters at A, is reflected down by prism B to prism C, thence to eye-piece D. E is the valve to shut out water if the periscope is shot away, while F is the wheel to rotate the instrument. The trench or field periscope consists of two mirrors fixed at the ends of a collapsible framework. See Altiscope; Camera; Submarine.

PERITONEUM (Gr. peritonein, to stretch around). Serous membrane which lines the walls of the abdominal cavity and is reflected over the internal organs, so as to cover them more or less completely. The function of the peritoneum is to facilitate the peristaltic movements of the intestine.

Inflammation of the peritoneum is termed peritonitis. It results from injury of the membrane or extension of disease from one of the abdominal organs. Most often the infecting organism is the *Bacillus coli*, which is normally present in the intestine. Peritonitis may be general, and either acute or chronic. The symptoms of acute peritonitis are severe and continuous pain in the abdomen, accompanied by vomiting. Where perforation of the bowel is suspected, operative treatment is the only hope. Chronic localised peritonitis may follow an acute attack or be due to alcoholism, cancer, chronic rheumatism, or Bright's disease. It may be treated with plasters and iodine.

PERIWINKLE (*Littorina littorea*). Marine snail with thick stony shell. It is abundant on all parts of the British coasts. The mollusc has a distinct muzzle extended in front of a pair of tentacles or antennae, at the base of which are the eyes. Its principal food is marine algae, which are rasped by the very efficient tooth ribbon. Periwinkles, or winkles, are found at low-water mark in nearly all parts of the world.

PERIWINKLE (*Vinca minor*). Perennial herb of the order Apocynaceae. It is a native of Europe and W. Asia. It has tough trailing stems about 2 ft. long, which root from the base of the paired oval varnished leaves. The blue-purple flowers are borne singly, chiefly on short, erect stems. The greater periwinkle, which is familiar in gardens, is similar, but larger in all its parts. It is a native of Europe and N. Africa.

Periwinkle. Flower of *Vinca minor*

PERJURY. Wilfully swearing falsely in a judicial proceeding after having taken a lawful oath, on a matter material to the issue. The statement need not be known to be false, if a person who knows nothing of the matter takes it upon himself to swear that it is true when it is not true. The statement must be positive; and as a rule "I believe," or "to the best of my knowledge" will protect the deponent. Perjury is a misdemeanour, and so is subornation of perjury, i.e. procuring another to commit perjury. Both are punishable by fine, imprisonment, or penal servitude. See Oath.

PERKIN, SIR WILLIAM HENRY (1838-1907). British chemist. He was born in London, March 12, 1838. In 1856, while endeavouring to prepare quinine synthetically, he obtained a beautiful mauve dye or Perkin's purple, so founding the aniline dye industry. Perkin also invented several other important aniline dyes. He was the first to prepare the perfume coumarin synthetically. He retired in 1873, and devoted the rest of his life to physical and chemical researches. Knighted in 1906, he died July 14, 1907.

PERLIS. Most northerly of the non-federated Malay States. It adjoins Kedah on the S., has a coastline of 25 m. on the W., and is elsewhere bounded by Siam. Rice, rubber, and coconuts are cultivated, and tin is mined. Kangar is the chief town. The area is 316 sq. m. Pop. 40,000.

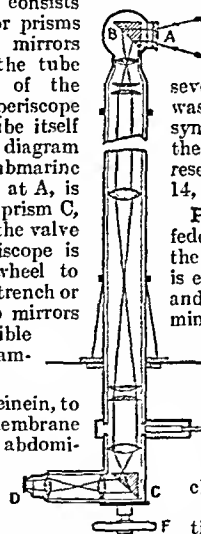
PERMANGANATES. Salts of permanganic acid. The best known is potassium permanganate, a purple-coloured substance used in solution as a disinfecting agent, and also as an oxidising agent in analytical chemistry. It is unknown in a pure state.

PERMEABILITY, MAGNETIC. Conductivity of a material for magnetism, the ratio of the flux density to the magnetising force. Iron, steel, nickel, and cobalt are magnetic substances, and are hence called ferromagnetic metals. The permeability of pure iron is 250 to 8,000; of nickel, 250 to 400; of cobalt, 150; and of cast steel, 1,500. Soft iron is used for the core of electromagnets on account of its high permeability. An alloy of nickel and iron, known as permalloy, has a permeability of 9,000 to 100,000. Used as a coating for the conductor of a long submarine cable, permalloy increased the speed of working fivefold. See Magnetism; Reluctance.

PERMIAN. In geology, name given by Sir R. Murchison to the rocks overlying the coal measures. So called from their occurrence in Perm, Russia, in which country they cover a very large area, they consist largely of sandstones and shales, and reach a thickness of over 4,000 ft. in some strata. They are found over large areas of Europe, N. America, in Africa, Australia, and Asia. The Permian rocks supply a fine quality of building stone, the magnesian limestone of the N.E. of England being particularly notable. They are rich in fossils, including the shells of many mollusca, corals, etc., and tree ferns.



Pericles, Athenian statesman. British Museum

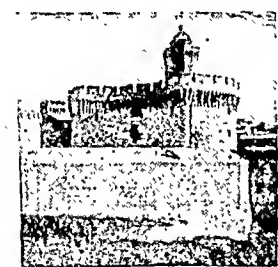


Submarine periscope. See Text

PERNAMBUCO OR RECIFE Seaport of Brazil. It stands on the Atlantic coast, 380 m. N.E. of Bahia, and is a terminus of rly. lines running to the N., S., and interior. The city comprises (1) the old settlement of Recife, still the chief commercial centre, situated on a sandy peninsula, and connected with the mainland by bridges; (2) São Antonio, on the island of São Antonio; (3) Boa Vista, on the mainland, the residential section. Pernambuco has some of the finest churches and public buildings in Brazil. Its exports include sugar and cotton. Pop. 327,843.

PÉRONNE. Town of France. It stands on the right bank of the Somme, 94 m. from Paris and 35 from Amiens. The chief building is the church of S. Jean, and there are ruins of a castle. During the Great War the Germans occupied the town, Sept. 24, 1914, and held it until March 18, 1917. The Germans regained it March 24, 1918, but on Sept. 1, 1918, it was entered by the Australians. The historic town hall was reduced to ruins, but has been rebuilt. With Maricourt, Péronne has been adopted by Blackburn. Pop. 4,241.

PERPENDICULAR (Lat. perpendiculum, a plummet). Term used for something exactly upright. In architecture, the Perpendicular period refers to the phase of Gothic architecture which began towards the end of the 14th century and lasted till the Renaissance, about 1500. It was peculiar to England, and its principal characteristic was verticality, even the window tracery consisting of vertical members. Arches consisted either of two arcs or four; columns were composite or clustered, with small capitals, generally moulded; roofs were of the hammer beam type. The Perpendicular period witnessed a great increase in the use of panelling, and the perfection of fan tracery vaulting. The western part of the nave of Westminster Abbey is Perpendicular architecture at its best.



Perpignan. Part of the old castle of the counts of Roussillon

See Architecture; Gothic Architecture.

PERPIGNAN. Town of France. It stands on the right bank of the Têt, about 40 m. S.S.W. of Narbonne. On a height overlooking the town is the citadel which encloses the old castle of the counts of Roussillon. Among important buildings are the cathedral of S. Jean, founded 1324, and the old university, containing a library and museum. Pop. 68,835.

PERRAULT, CHARLES (1628-1703). French author. Born in Paris, Jan. 12, 1628, he became secretary to Colbert, and signalled his admission to the Academy in 1671 by a long poem, *Le Siècle de Louis XIV*, which precipitated a six years' dispute with Boileau on the respective merits of the ancients and the moderns. His fame rests on a series of fairy tales, which he made his own by the delightful style in which they were written. Issued in volume form, 1697, as *Histoires ou Contes du Temps Passé*, by Perron Darnemour, they achieved immense popularity. Perrault died May 16, 1703.



Charles Perrault, French author

PERRY (Old Fr. a pear). Alcoholic fermented pear-juice. Normandy and Brittany, and in England, in the counties of Worcester, Gloucester, Hereford, Devon, and Somerset. It is a sweet and aromatic beverage, containing from 5 to 9 p.c. of alcohol. See Cider.

PERSEPHONE OR PROSERPINE. In Greek mythology, daughter of Zeus and Demeter, the goddess of agriculture. She was carried off while gathering flowers by Pluto, the god of the underworld, and thenceforward spent six months of the year in the underworld, and six months with her mother. The rape of Persephonē is symbolical of the process of agriculture. See Demeter Pron. Per-sefonce.

PERSEPOLIS (Gr. city of the Persians). Capital of the ancient Persian empire after Pasargadae. It was situated some 35 m. N.E. of the modern Shiraz. The palaces and other public buildings are built on a terrace of masonry some miles from the city proper, and were approached by splendid stairways. The great hall alone covered 2½ acres.

PERSEUS. In Greek legend, son of Zeus and Danaë. Polydectes, king of Seriphus, wishing to marry Danaë, got rid of Perseus by sending him to Libya to secure the head of Medusa, the Gorgon. With the help of Athena, Perseus succeeded in his task, and on his return journey passed through Ethiopia, where he saved Andromeda (q.v.) from the sea-monster and made her his wife. Reaching Seriphus, and finding that Polydectes had been treating his mother unkindly, he turned the king and his whole court into stone by showing them the Gorgon's head. Perseus is also regarded as the founder of the city of Mycenae. Pron. Pers-yewss.

In astronomy, Perseus is a N. constellation extending from Cassiopeia to Taurus. It is traversed by the Milky Way.

PERSHING, JOHN JOSEPH (b. 1860). American soldier. Of Alsatian descent, he was born in Missouri, Sept. 13, 1860. In 1886 he entered the U.S. army, and in 1898 took part in the Spanish-American War. In 1899 he was sent to the Philippines, and with the rank of general had charge of the expedition against the Moros of Mindanao in 1902. Appointed military attaché at Tokyo, he was in Manchuria with Kuroki's army during the Russo-Japanese War in 1905. After serving again in the Philippines, he was placed in command of the El Paso patrol on the Mexican border, and in 1916 led the punitive expedition sent into Mexico in pursuit of Villa. On the entry of the U.S.A. into the Great War, he was made commander-in-chief of the American expeditionary force, May 18, 1917. In 1921 he succeeded Peyton March as chief of the staff, a post he retained until 1924.

PERSHORE. Parish of Worcestershire. It stands on the Avon, 8 m from Worcester, on the G.W. Rly. The chief building is the abbey church of the Holy Cross, with a fine tower and an Early English choir. Pershore is noted for plums. Other industries are the manufacture of agricultural machinery and jam. Pop. 3,384.

PERSIA. Country of Asia. In ancient times Persia included the whole of the tableland enclosed S. by the Arabian Sea, E. by the Indus valley, W. by the Persian Gulf and Mesopotamia, and N. by the depression between the Caspian and Aral Seas. The total area of this region is nearly a million sq. m., but modern Persia occupies only some 628,000 sq. m. Tehran is the capital, other towns including Isfahan (Isfahan), the old capital, Tabriz, and Meshed. The pop. is estimated at about 9,000,000.

The climate generally is one of great aridity combined with excessive heat, although on some of the uplands extreme cold prevails. Date palm cultivation has made great strides along the shores of the Persian Gulf; cedars, oaks, beech, and box flourish on the N. slopes of the Elburz range. Food products include the cereals wheat, barley, and millet. The lowlands yield silk, cotton, olives, opium, and tobacco. The higher ground is pastoral country, from whose sheep and goats is gained the wool for the celebrated carpets. There are pearl fisheries in the Persian Gulf. Mules, camels, and small horses are reared. Minerals include coal, iron, copper, lead, turquoise, and rock salt. The country is rich in oil.

The first inhabitants of the country in historical times appear to have been of Sumerian stock, but on the fall of the Assyrian Empire an Aryan people, the Medes, became the heirs of its political power, and to a great extent of its civilization. Media became a powerful empire under Cyaxares (d. 584 B.C.). His son, Astyages, was attacked by an army of Persians under Cyrus, and in 550 the empire of Media passed into the hands of the kindred Aryan people of Persia. Darius, a usurper, attacked and reduced the Greek cities of Thrace and Macedonia and refounded the Persian Empire on a more solid basis. The rise of Macedonia under Philip and Alexander brought about the temporary fall of Persia.

At the death of Alexander, what is now Persia was ruled by the dynasty of the Seleucids, descendants of one of his generals. The Parthians, a Turanian tribe from the N., produced the Arsacid dynasty, about 249 B.C., who gradually seized the whole of Persian soil. The Parthian power was superseded by the Sassanian dynasty, which ruled the land until 651, a period marked by constant wars with the Byzantine Empire. The Turks then got possession of Persia, and for nearly 600 years it was part of the Caliphate, but with its own petty rulers. In 1055 the Seljuk Turks united the country again, but when, in the 13th century, their power waned it was overrun by the Mongols, who founded a dynasty that lasted for about a century. They were driven out by Tamerlane, whose son and his descendants ruled until about 1500.



Persia. Map which shows its strategic situation in relation to the Persian Gulf and the Bagdad and Turkistan Railways



John Pershing, American soldier
Russell

See Constellation.

In 1499 a new dynasty, that of the Sufavi, was founded and an era of conquest began. Georgia was annexed, and Abbas, the great shah, who belonged to the Sufavi dynasty, extended his sway over Afghanistan and Baluchistan. He made Ispahan his capital, and in his reign the English, followed by the Dutch and the French, began to trade with Persia. A little later the Russians began to show their interest in the country.

The Sufavi dynasty was overthrown by the subject Afghans, who revolted and, in 1722, captured Ispahan. The Turks took advantage of Persia's weakness, and in 1736 a Turk, Nadir Kuli, made himself shah. His reign, short but tyrannical, was followed by another period of disorder, in which Afghanistan and Baluchistan became independent. In 1795 a new dynasty, that of Kajar, appeared, but the country's decline was hardly arrested. Teheran again became the capital.

Early in the 19th century Georgia and other districts were annexed by Russia, and in 1856-57 a short war with Great Britain ended in the shah recognizing the independence of Afghanistan. More than once, external pressure combining with internal disorder, the country seemed likely to fall to pieces, but this did not happen. In 1907 Great Britain and Russia agreed by treaty to respect the independence of Persia, at the



Persia : some types. 1. Workers in the opium fields. 2. Peasant at prayer. 3. Woman in outdoor dress

same time marking out their respective spheres of influence.

A nationalist movement was begun in Persia in 1905, and in 1906 a constitution adopted. Before that time the shah had been an absolute ruler. In 1921 the nationalist leader, Riza Khan, turned out the government and set up one controlled by himself. He himself was war minister until, in Oct., 1923, he made himself premier. At this time the shah left Persia, and Riza contemplated a republic, but religious influences were against this idea. In Oct., 1925, the meljis (national assembly) deposed the absent shah, and in Dec. Riza was chosen shah, the crown being made hereditary in his family. The finances were reformed under American control.

PERSIAN ART. From Babylonian and Assyrian art developed old Persian art. The sun-dried brick of the Assyrians was discarded for stone, though their peculiar raised palaces were repeated in Persia, and the columnar feature, seen in the remains of the palace of Cyrus at Pasagardae, was borrowed from the Medes. Persian constitutes one of the five main schools of Mahomedan art. It is seen to

perfection in the tomb of Zobeide at Bagdad. Notable examples of religious art are the mosque of Masjid Shah at Ispahan and the beautiful glazed tile and interlaced ornament work of the mosque at Tahriz. Methods of inlaying metal on metal, at first silver on iron or bronze, were skilfully practised.

PERSIAN GULF. Arm of the Indian Ocean, the ancient Persicus Sinus. It stretches N.W. from the Gulf of Oman on the S. to the Shatt-el-Arab and the adjacent regions on the N., and is more than 500 m. long.

During the Great War the British made much use of this area, the strategic key to almost the whole of the Middle East. See Basra; Fao; Mesopotamia.

PERSIMMON OR VIRGINIAN DATE PLUM (*Diospyros virginiana*). Small tree of the order Ebenaceae, native of N. America. It has rather thick, oval-oblong, alternate leaves and pale yellow, bell-shaped flowers. The wood is very hard and blackish. See Ebony.

PERSIUS (A.D. 34-62). Roman satiric poet, whose full name was Aulus Persius Flaccus. Born at Volaterrae, in Etruria, Dec. 4, A.D. 34, he studied Stoic philosophy in Rome under Cornutus, and died Nov. 24, 62. He left six Satires, which display original genius, in spite of their immaturity, excess of literary allusion, and obscure style. They have been edited, with a prose translation, by J. Conington, 1872, and there are verse translations by Dryden and Gifford.

PERSONAL PROPERTY. Term peculiar to English law. It comprises all goods, chattels, choses in action, leaseholds; but not freeholds, copyholds, or things thereunto annexed. The distinction is quite illogical, and the most logical division of property is into movable and immovable. See Intestacy.

PERSONATION (Lat. persona, mask, person). In English law, pretending to be someone else. A person who does this in order to obtain property is guilty of a felony by the False Personation Act, 1874, passed in consequence of the Tichborne case. To personate a master so as to give a false character to a servant is a misdemeanour under an old statute of George III; and the Ballot Act, 1872, made it a criminal offence to personate a voter at a parliamentary or municipal election.

PERSPECTIVE (Lat. perspicere, to look through). In art, the representation of objects occupying different planes upon a single plane surface in such a way that the representation shall appear the same to the eye as the objects themselves; also the science or laws determining such representation. The colour as well as the size and form of objects being affected by distance, perspective is divided into two species, linear and aerial. Linear perspective concerns itself with the apparent form and grouping of objects, aerial perspective with their distinctness and colour.

PERSPIRATION. Excretion of water from the skin through the sweat glands. In the human being the sweat glands consist of

small coiled tubes situated in the deepest part of the true skin, from which a duct passes up to the surface. Sweat glands are abundant all over the skin. There is always a certain amount of activity in the glands, but the secretion, as soon as it reaches the surface, is evaporated, and thus normally the skin feels dry. Under the influence of exercise, heat, or certain emotions, the activity of the glands is greatly increased. The physiological function of sweating is to assist in regulation of the body temperature. Anidrosis is abnormal diminution in the quantity of sweat excreted. See Hyperidrosis.

PERTAB SINGH, SIR (1845-1922). Indian ruler and soldier. Early in his career he was put at the head of the administration of Jodhpur by his brother, the maharaja, and in this capacity introduced reforms, constructed railways, etc. He took part in the Mohmand expedition, 1897, and the Tirah campaign, 1898, led Jodhpur imperial troops in China, 1900, and two years later became ruling chief of Idar in Gujarat, but abdicated in favour of his son. An hon. commandant of the Imperial Cadet Corps, he served in the Great War, 1914-15. He died Sept. 3, 1922.



Sir Pertab Singh, Indian soldier
Vandryk

PERTH. Burgh and county town of Perthshire, Scotland. On the Tay, it is 48 m. by rly. N. of Edinburgh, and is served by the L.M.S. and L.N.E. Rlys. In the church of S. John, John Knox preached his famous sermon against idolatry. The county buildings



Perth, Scotland. General view across the L.M.S. Railway Bridge over the Tay

occupy the site of the palace in which the Gowrie conspirators met. An imposing bridge, by Smeaton, across the Tay communicates with the suburb of Bridgend, and along the W. bank of the river extend two public parks—the N. and S. Inch. Dyeing and distilling are the staple industries. From here steamers go to Dundee and other ports on the E. coast. It has valuable salmon fisheries and large cattle markets. Pop. 33,210.

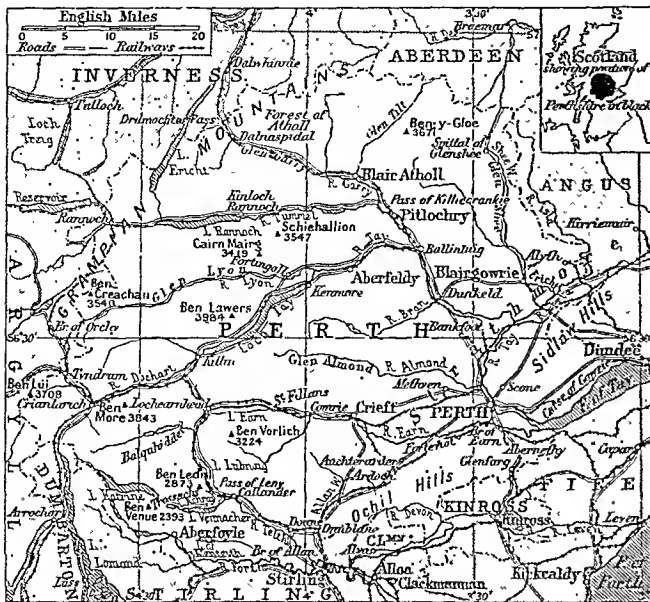
The title of earl of Perth has been borne since 1605 by the family of Drummond, except that between 1760 and 1853 it was in abeyance.

PERTH. Capital of Western Australia. It stands on the Swan river, 12 m. from its mouth. Its port is Fremantle. Notable buildings include the town hall and the post office. It is the seat of the university of W. Australia.



Perth, capital of Western Australia. View from King's Park
Courtesy of the Australian Government

South Perth is a suburb across the river. The growth of the city was due to the discovery of gold in the neighbourhood soon after 1890. In 1929 the mayor became a lord mayor. Pop., with suburbs, 196,251.



Perthshire. Map of the Scottish county celebrated for its scenery

PERTHSHIRE. County of Scotland. Its area is 2,294 sq. m. It belongs partly to the Highlands and partly to the Lowlands, and is pierced by the Firth of Tay. In the N. and W. are the Grampians, and in the S. and E. are the Sidlaw and Ochil Hills. The chief river is the Tay. The many lochs include Tay, Vennachar, Rannoch, Katrine, and Achray. Across the S.E. stretches the valley of Strathmore, and in the E. is the Carse of Gowrie. Beautiful glens—Garry for instance—abound, and herein are the Trossachs, the pass of Killiecrankie, and other famous spots.

Perth is the capital and largest town, others being Crieff, Blairgowrie, Dunblane, and Auchterarder. In the county, too, are Abernethy and Blair Atholl. Much of the land is given up to deer forests and grouse moors. Oats, barley, and wheat are grown; cattle and sheep are reared. The county is served by the L.M.S. and L.N.E. Rlys. Pop. 125,503.

PERTINAX, PUBLIUS HELVIUS. Roman emperor from Jan. 1 to Mar. 28, A.D. 193. A man of humble birth, born at Alba Pompeia in Liguria, he entered the army and distinguished himself in the wars with the Parthians and in Britain. After the murder of Commodus he became emperor, but was soon murdered.

Pertinax is the nom-de-plume of André Gérard, French publicist. Born Oct. 18, 1882, from 1908-14 he was London correspondent of the Echo de Paris, in which an article by him, signed "Pertinax," appeared daily after 1917.

PERU. S. American republic bordering the Pacific. It is bounded N. by Ecuador and Colombia; E. by Brazil, S.E. by Bolivia, and S. by Chile. The Ecuador and Colombia frontiers are still unsettled. The long dispute with Chile over Tacna and Arica was settled in 1929, Tacna going to Peru and Arica to Chile. Lima is the capital, and Callao the chief port. The area is about 532,000 sq. m. Pop. estimated at 6,147,000.

The country's vast mountain system cuts Peru into three distinct longitudinal zones: the rainless coastal plain, from 30 to 60 m. wide; the sierra or mountain system itself, about 250 m. wide; and the montaña, the remote inland re-

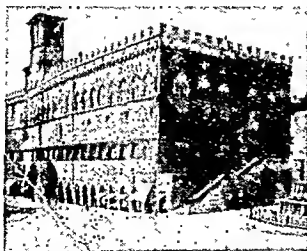
gion of forest. Three great navigable rivers cut their way by deep gorges through the lofty chain of the Eastern Cordillera, the Marañon, the Huallaga, and the Ucayali.

The name of Peru is traditionally identified with wealth in the precious metals, particularly silver. Nowadays the chief minerals are petroleum, copper, silver, and lead. The vegetable products far exceed the minerals in value, notably sugar, cotton, and coffee. Guano, once a prolific source of wealth and revenue, is still gathered. Cinchona and other medicinal plants abound. There is a considerable export of alpaca, llama, and sheep wool. The country has about 300 m. of railways.

In 1533 the Inca empire fell, and about the middle of the 16th century the authority of the Spanish viceroy was established. For two centuries the history of Peru was virtually the history of Spanish S. America.

For the viceroy held authority over almost all the Spanish governors upon the continent. Peru declared its independence in 1821, but it was not until 1824 that the Spanish dominion in S. America ended. For three years Peru recognized the authority of Simon Bolivar, but upon his departure, in 1826, the republic entered upon the stormy career characteristic of such tropical republics, presidents and dictators succeeding one another with bewildering rapidity.

Between 1845 and 1862 Ramon Castilla brought to Peru comparative tranquillity, better administration, and economic progress, but after him the old disorders recurred, and frontier disputes became frequent. The frontiers of Peru, Bolivia, and Chile in the coastal desert were not a burning question until it was discovered that the desert might yield great wealth, first in the form of guano, and then in that of nitrate. Latterly Peru has shared the general South American movement of consolidation and settlement. During the Great War Peru broke off diplomatic relations with Germany. Peru was one of the signatories of the treaty of Versailles, and is a member of the League of Nations. As the result of a revolution in Aug., 1930, Col. Cerro became president. See Inca.



Perugia, Italy. Palazzo del Municipio, built 1281-1333

antiquities. The municipal palace (1281-1333) has a valuable collection of pictures. The money changers' hall (1453) has beautiful frescos by Perugino. Pop. 81,409

PERUGINO or **PIETRO VANNUCCI** (1446-1524). Italian painter. Born at Città della Pieve, he worked in Florence and Perugia till 1480, when he was employed by Pope Sixtus IV on the decoration of the Sistine chapel and other portions of the Vatican. He was among the first of the Italians to use the oil medium successfully, though he painted also in tempera, and his graceful figures, with their landscape background, made his reputation. There are five works by him in the National Gallery, London.



Perugino, Italian painter. Self-portrait

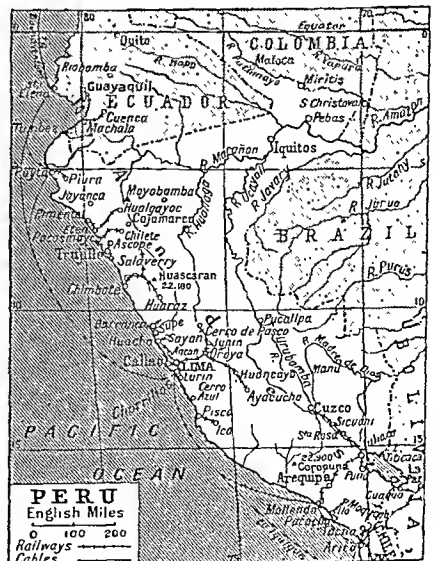
PERUVIAN BARK. Former name for the bark of various species of cinchona imported from Peru and Bolivia for the sake of the quinine contained in it. The species yielding the highest percentage of quinine is *C. calisaya* and *C. ledgeriana*, known as yellow barks. Another species is red bark. See Cinchona.

PERVISE. Village of Belgium. It lies 4½ m. S. of Nieuport, on the line of the Nieuport-Dixmude rly. It was held by the French against the German attacks on the Yser front in 1914, and later was part of the front held by the Belgian army. See Yser.

PESCADORES or **FISHERS' ISLANDS** Group of islands belonging to Japan. In Formosa Strait, between the island of Formosa and the mainland of China, it covers nearly 50 sq. m. Rice, millet, and other cereals are produced. Navigation is extremely dangerous. A possession of China down to 1895, when it was ceded to Japan, the group is officially called Hokoto by the Japanese, and is known as Pang-hu to the Chinese. About 20 of the islands are inhabited. Pop. 60,000.



Peru. Indians in dress similar to that worn in the Inca period



Peru. Map of the Andean republic

PESETA. Spanish silver coin. The monetary unit of Spain, its nominal value is about 94d. It is divided into 100 centimos and coined in 1, 1, 2, and 5 peseta silver pieces, and 5, 10, 20, and 25 peseta gold pieces.



Peseta. Obverse and reverse of the Spanish coin.

PESHAWAR. Capital of the N.W. Frontier Province, India. It lies near the Bara, 190 m. from Kabul, and occupies a strategic position in relation to the Khyber Pass. A broad-gauge rly. joins the town with Jamrud and with Campbellpur, where connexion is made with the two great rlys. of N.W. India. Pop. 104,452. Fighting took place around Peshawar between British troops and Afridi tribesmen, in Aug., 1930. Pron. Pesháh-wer.

PESO (Lat. *pensum*, weight). Coin used in several countries of S. and Central America. Argentina, Chile, Uruguay, Panama, Paraguay,



Peso. Silver coin used in Guatemala. Half actual size

Honduras, Salvador, Colombia, and Guatemala have each a silver coin of one peso, which is divided into 100 centavos or other similar unit. The Mexican dollar is called the peso. *Peseta* is a diminutive.

PESTALOZZI, JOHANN HEINRICH (1746-1827). Swiss educationist. Born at Zürich, Jan. 12, 1746, in 1780 he opened a school for waifs and strays, and wrote the successful moral tale, *Leonard and Gertrude*, 1781. From 1798-99 he conducted a school for orphan children at Stanz, on the Lake of Lucerne, and from 1799 to 1825 a school first at Berthoud and then at Yverdon, where he put into practice his educational theories, which are based on the idea that understanding is only possible by that spontaneous perception which is a result of observation. His views are in *How Gertrude Teaches her Children*, 1801. He died Feb. 17, 1827.

PÉTAÏN, HENRI PHILIPPE (h. 1856). French soldier. Born at Cauchy-à-la-Tour, Pas-de-Calais, April 24, 1856, he became a sub-lieutenant of infantry in 1878. At the outbreak of the Great War he was in command of the 4th brigade. As commander of an army in Sept., 1915, he participated in the offensive in Champagne, and in Feb., 1916, was placed in command of the defences of Verdun. He later became chief of the staff, and in May, 1917, succeeded Nivelle as commander of the armies of the north and north-east. In March, 1918, when Foch was made generalissimo, Pétain became commander-in-chief, and in 1922 became inspector-general. He was made a marshal, Nov. 19, 1918.



Marshal Pétain, French soldier

PETAL (Gr. *petalon*, thin sheet of metal). In a flower, the inner series of floral leaves, as distinguished from the outer series, or sepals. See *Corolla*; *Flower*.

PETER. One of the twelve apostles. A son of Jonas, apparently a native of Capernaum, he was in partnership with his brother Andrew as a fisher on the lake of Galilee when called to be an apostle. Originally called Simon, he received the name of Cephas or Peter from Christ, who, in reference to the meaning of the name, declared that on this rock He would

build His Church. He preached the first sermon after the great Pentecost, and was the first to admit a Gentile to the Church. He is believed to have preached throughout Asia Minor, to have gone to Rome, and to have met death by crucifixion, perhaps under Nero, A.D. 68. See *Papacy*.

PETER, EPISTLES OF. Two books in the New Testament, attributed to S. Peter. Several works have survived which were ascribed to the apostle, but were not in reality his. The claim for the first epistle may be accepted, and we may conclude that it was written from Rome before A.D. 64. It is addressed to the Christians in Asia Minor, encouraging them to face persecution. It is probable that the second epistle was written by a disciple of Peter in his master's name.

PETER I, THE GREAT (1672-1725). Tsar of Russia. Son of the Tsar Alexis, he was born May 30, 1672, and succeeded to the tsardom jointly with his elder brother, Feodor, in 1682. In 1689 he overturned the regency of his sister Sophia, though without officially deposing his brother. A war with Turkey gave him the port of Azov in 1696, and the opportunity for creating a Russian navy. In 1697 he visited European courts and worked with his own hands in the shipyards of Holland and England. He returned to Russia to complete the suppression of a revolt raised by the party hostile to western innovations, and brought with him engineers, artisans, and scientists.



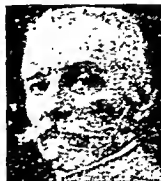
Peter the Great, Tsar of Russia After J. M. Wattier

In 1699, after the accession in Sweden of Charles XII, he formed a coalition with Poland and Denmark for a partition of the Baltic provinces of Sweden, but Charles crushed Denmark, shattered Peter's huge army at Narva, and then turned on Poland. Peter was left at leisure to found his new capital of Petersburg. When Charles again turned upon Russia his army was annihilated at Poltava in 1709. A war with Turkey, ended by a humiliating peace, followed. Peter then made himself master of Finland, and extended his empire at the expense of Sweden in the north and of Persia in the south-east. He died Jan. 28, 1725, and was succeeded by his widow Catherine I (q.v.).

Peter's grandson, who became Peter II (1715-30), succeeded Catherine I in 1727. In the hands of court officials, he died Jan. 29, 1730.

Another grandson, Peter III, was tsar for six months in 1762. A son of Peter's daughter Anne, he was murdered by his wife Catherine, who succeeded him.

PETER (1844-1921). King of the Serbs, Croats, and Slovenes. Son of Alexander I, prince of Serbia, 1842-58, Peter Karageorgevitch was born at Belgrade, July 11, 1844. Exiled with the rest of the family, he fought in the foreign legion during the Franco-Prussian War. On the assassination of King Alexander, June 10, 1903, Peter was elected king by the National Assembly on June 15. In June, 1914, he committed the regency of the kingdom to the crown prince Alexander, his second son, but was with the army during the first part of the Great War, accompanying it in the retreat of 1915-16 to Greece, where he spent his second exile. On the reconquest of Serbia, Peter returned to Belgrade, where he died Aug. 16, 1921. His son Alexander (q.v.) succeeded him as King of Yugoslavia. See *Serbia*; *Yugoslavia*.



Peter, King of the Serbs

PETER THE HERMIT. Medieval preacher. He was a priest at Amiens when Pope Urban II, in 1095, declared a crusade, and he became one of the most successful of the wandering preachers who went through France urging its claims. He led one band of crusaders from Cologne to Constantinople, and after some vicissitudes reached the Holy Land. He is said to have died in 1115.

PETERBOROUGH. City and market town of Northamptonshire. It stands on the Nene, 76 miles from London, and is served by



Peterborough. West front of the cathedral

the L.M.S. and L.N.E. Rlys., being a railway centre. The cathedral contains examples of several styles of architecture. Notable features are the magnificent west front, the nave, and the central tower. The staple industries are the making of railway rolling stock and agricultural implements. The diocese covers the county of Northampton. In 1928 the area of the city was enlarged. Market days, Wed. and Sat. Pop. 35,533. (See *Apse*.)

The soke of Peterborough, a district around the city, forms a separate county for administrative purposes. It has an area of 83 sq. m.

PETERBOROUGH. Town of S. Australia. It is near Terowie, the rly. junction of the line from Broken Hill to Port Pirie and the main line from Adelaide to Perth. Pop. 2,966

PETERBOROUGH. City of Ontario, Canada. It stands on the river Otonabee, 72 m. from Toronto, and is served by the C.N. Rlys. Its industries include lumber and flour mills. There is a R.C. cathedral. Pop. 20,994.

PETERHEAD. Burgh and seaport of Aberdeenshire, Scotland. It stands on the north side of Peterhead Bay, 44 m. from Aberdeen, on the L.N.E. Rly. The burgh consists of two parts, Peterhead proper and Keith Inch, separated by the harbour, which includes a large harbour of refuge, built 1886-1921 by prisoners from the convict prison near. The chief industry is the herring fishery; another is the polishing of red granite, which is extensively quarried in the neighbourhood. Pop. 13,000.

PETERHOF. Town of the Russian Soviet Republic. It is 15 m. S.W. of Leningrad, with which it is connected by railway, on the S. shore of the bay of Kronstadt. Founded in 1711 by Peter the Great, it is celebrated for its château, formerly a favourite summer residence of the tsars. Pop. 8,925.

PETERHOUSE OR **S. PETER'S COLLEGE.** Oldest of the Cambridge colleges. It was founded in 1257 by Hugo de Balsham, bishop of Ely, on the lines of Merton College, Oxford; its charter is dated 1284. The principal court assumed quadrangular form in the 15th century, the N. range being begun in 1424. The existing chapel, consecrated in 1632, contains specimens of Munich glass.

PETER MARTYR (1205-52). Dominican monk and saint. He was born at Verona, and at the age of 15 admitted by S. Dominic to his order. He conducted missions with great success in the Romagna, Tuscany, Bologna, and Milan, and, appointed in 1232 head of the Inquisition, is said to have acted with greater zeal than mercy. He was murdered in 1252, and canonised in 1253.

Peter Martyr was also the name given to an Italian Protestant reformer whose surname was Vermigli (1500-62). An abbot in Italy, he became a Protestant. In 1547 he was

made professor of theology at Oxford, but on the accession of Mary he returned to Strashourg, and later became a teacher of Hebrew at Zürich, where he died.

PETER PAN.

Children's play by Sir J. M. Barrie. It was produced Dec. 27, 1904, at the Duke of York's Theatre, London. Based on Barrie's tale, *The Little White Bird*, 1902, the play, retold as *Peter and Wendy*, 1911, deals with the adventures among fairies, pirates, and Indians of some

Peter Pan, Statue by Sir G. Frampton in Kensington Gardens

children who follow the guidance of Peter, the boy who never grew up. In 1912 a statue of Peter by Sir G. Frampton was erected in Kensington Gardens. See Barrie, Sir J. M.

PETERSFIELD. Urban dist. and market town of Hampshire. It is 55 m. from London and 19 m. from Portsmouth, on the Southern Rly., on which line it is a junction. The church of S. Peter is partly Norman. Near is Bedales co-educational school. Market day, Wednesday (alternate). Pop. 3,933.

PETERSHAM. District of Surrey, part of the hor. of Richmond. The church of S. Peter, founded 1505, has some interesting monuments. In the churchyard is the grave of Mary and Agnes Berry, Horace Walpole's "Elder-Berries." See Ham; Richmond.

PETER'S PENCE. Tax levied in England by the pope from the 8th or 9th century, and subsequently extended to other countries. It was withheld by England in 1366 in order to bring pressure to bear on the pope to agree to the statute of praemunire, and was abolished by Henry VIII in 1534. It has been since revived as a voluntary contribution to the pope.

PETHICK-LAWRENCE, FREDERICK WILLIAM (b. 1871). British politician. Born Dec. 28, 1871, he became a harrister. He edited *The Echo*, 1902-5, the *Reformers' Year Book*, 1904-8, and *The Labour Record and Review*, 1905-7. In 1901 he married Emmeline Pethick, assuming her surname, and was associated with her in the agitation for woman suffrage. Labour M.P. for West Leicester from 1923, he became financial secretary to the Treasury in 1929.

PETITION (Lat. petere, to seek). Term used for a request, generally one from an inferior to a superior. The right of petitioning the king was established in the time of Henry IV, and in 1689 was laid down in the Bill of Rights. Until the time of Henry VII, legislation was usually based on petition, the laws being drafted by the judges from the petitions received. The modern petition is usually to one of the Houses of Parliament.

What was known as the Petition of Right was a statement of constitutional claims drawn up by Wentworth, Pym and others, passed through both Houses and signed by Charles I on June 7, 1628. To-day the term petition of right is given in English law to the method of obtaining redress against the crown.

PETITS CHEVAUX (Fr. little horses). Gambling machine. It is a miniature representation of horses with their jockeys, which revolve round a circular space in the centre of a long table. The mechanism is so contrived that each horse revolves independently, and the momentum is applied so as to leave the result of each spin a matter of pure chance.

PETRA (Gr. rock). Ruined capital of the Nabataeans. Known also as Sela, Joktheel, or Regem, it lies under Mount Hor, between the Dead Sea and the Akabah (Aqaba) Gulf. A gorge leads to a rose-red temple with graceful columns and sculptures of winged war-maidens, Arab war-horses, and war dances. Beyond is a mountain-ringed oval space, about one mile long and $\frac{1}{2}$ m. broad. Here stood the vanished city of Petra, which is represented by thousands of rock tombs, ranged in tiers on the sandstone flanks of encircling mountains.

In Assyrian and Babylonian invasions Petra became the refuge of the Nabataeans. They used the valley as a burial place and treasure store, and it was raided in 312 B.C. by Macedonians, and later by Pompey. In A.D. 105 Trajan captured the city.

Treasure hunters began to break into tombs, and Saracens in the 7th century wrecked the

town in search of buried spoil. In addition to the empty funeral caves, little remains, even in ruin, except the temple in the gorge, a great amphitheatre, and the wreck of a colossal classic temple on the mountain top of El-Deir. In the Great War Petra was used as a base by T. E. Lawrence (q.v.), in his attacks on the Turks.

PETRARCH (Ital. Petrarca) (1304-74). Italian poet and humanist. Son of a notary, who was exiled with Dante from Florence, he was born at Arezzo, Tuscany, July 20, 1304. He early displayed a love for the classics, but studied for the law, which, after his father's death in 1326, he abandoned for letters. He took minor orders, found generous patrons, particularly in the Roman house of Colonna, and won the friendship of Azzo di Correggio. In 1327, in the church of S. Clara, Avignon, he first saw the Laura who inspired his muse. This lady, to whom he addressed some 300 sonnets, has been doubtfully identified with Laura di Noves, the wife of Hugo de Sade.

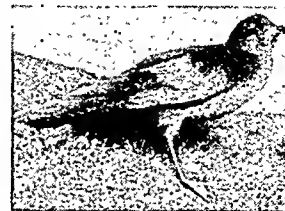
While pursuing ardently his Latin studies, and regarded by his younger literary contemporaries as their leader, he took a deep and constant interest in public affairs. He travelled in France, Germany, and the Netherlands, and undertook many important public missions. He wrote a treatise on government, and in 1351 his advice was sought in the drafting of a constitution for Rome, in which city, on Easter Sunday, 1341, he had been crowned poet laureate. He found a congenial retreat at Vaucluse, but later moved to a village, since called Arqua Petrarca, near Padua, where he died, July 18, 1374. In 1928 his house at Vaucluse was opened as a museum.



Petrarch, Italian poet

Petrarch has been called the first of the moderns. His fame soon spread throughout Europe, largely through his sonnets and other poems, which exerted a lasting influence on the love poetry of France and England.

PETREL (Dim. of Peter, from some species appearing to walk on the water). General name for about 100 species of oceanic birds,



Petrel. Storm petrel, *Procellaria pelagica*, or Mother Carey's Chicken

constituting the order Tuhinares. It includes the albatross, diving petrels (*Poecanoides*), storm petrels (*Procellaria*), flat-billed P. (Prion), fulmar P. (*Fulmarus*), and the shearwater P. (*Puffinus*). They have a rudimentary hinder toe, hooked bill, and tubular nostrils. They nest in burrows or rock-clefts, and lay a single egg. The name indicates more particularly the storm petrel, or Mother Carey's chicken (*Procellaria pelagica*), which breeds in Britain, chiefly in Scotland and Ireland.

PETRIE, SIR WILLIAM MATTHEW FLINDERS (b. 1853). British Egyptologist. Born at Charlton, June 3, 1853, he surveyed Stonehenge and ancient British earthworks, 1875-80. Applying similar methods to the pyramids of Gizeh, 1880, he undertook thereafter, down to 1914, systematic excavations in Egypt. In 1890 he excavated Lachish for the Palestine Exploration Fund. Edwards professor of Egyptology at University College, London, from 1892, he founded the Egyptian Research Account, 1894. Besides numerous works covering the whole field of Egyptian history, he wrote *Some Sources of Human History*, 1919; and *Hill Figures of England*, 1926. He was knighted in 1923.

Petrograd. Name applied from 1914 to 1924 to the town known as Leningrad (q.v.).

PETROLEUM OR ROCK OIL. Dark brown, black, or dark green mineral oil, the raw material from which petrol, paraffin oil, lubricating oils, fuel oil, paraffin wax for candles, and many other products are manufactured. Its main constituents are carbon and hydrogen. It is mined by means of wells, up to 4,000 or 5,000 ft. deep, lined with iron or steel tubes, through which it is conveyed to the surface. A tower-like derrick contains the drilling machinery, and serves as a support in lowering the tools and lengths of casing. The stratum in which the petroleum occurs is porous, usually sandstone or limestone.

Crude oil, in countries where it is abundant, is transported through pipe lines, sometimes hundreds of miles in length. The oil is treated by fractional distillation in order to obtain various products. At a moderate temperature vapours are given off which condense into petrol or motor spirit. Greater heat sets free another set of vapours, which when condensed and purified become paraffin oil. With yet higher ranges of temperature lubricating oils are obtained; and the residue left in the still may in some cases be used as fuel oil. Some crude oil is heated sufficiently to remove the petrol, the remainder being used as fuel oil. Again, crude oils of one class yield paraffin wax, and those of another class yield asphalt.

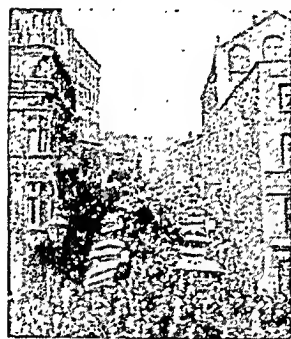
Oil fuel is being used to a greater extent every year, and is employed by the largest and most modern British liners. The navy uses it almost exclusively. Its use on British railway engines in place of coal has begun; and many heating and steam-raising plants burn the liquid fuel. Some grades are used in the internal combustion or oil engine. See Oil.

PETROLIA. Town of Ontario, Canada. It is 50 m. from London, being a station on the C.N.R., and obtained its name from the oil-fields in the vicinity. Pop. 3,148.

PETROLOGY (Gr. *petra*, rock; *logos*, science). Science of rocks. It is one of the divisions of geology, overlaps the kindred science of mineralogy, and is concerned with the composition, chemical and mineralogical, the structure, and the classification of rocks. Rocks for examination under the microscope are usually cut into thin sections, and for chemical analysis or for separation purposes crushed into small grains. In putting a rock into its proper category some characteristics which have to be considered by the petrologist are its composition, hardness, colour, crystalline or non-crystalline character, specific gravity, etc. See *Geology*; *Rock*.

PETRONIUS (d. A.D. 65). Roman writer, whose full name was Gaius Petronius Arbitr. Although he passed his days in sleep and his nights in business or pleasure, as governor of Bithynia he was a capable administrator. Apparently he aroused the jealousy of Tigellinus, and anticipated his fate by opening his veins in a warm bath. Petronius was the author of a remarkable work of fiction, called *Satyricon*, of which considerable fragments have been preserved. It describes the adventures of a Greek freedman in Italy.

PETTICOAT LANE. Name, until about 1830, of Middlesex Street, London; E. Running N. from High Street, Whitechapel, to Widegate Street, Bishopsgate, it was known in Stow's time as Hog Lane. In the 17th century Petticoat Lane was the centre of a colony of French refugee weavers, but it has for many years been a Jewish quarter, notable for its Sunday morning



Petticoat Lane, London, during the Sunday morning market

open-air market, in which secondhand clothing forms a conspicuous feature.

PETTIE, JOHN (1839-93). Scottish painter. Born at Edinburgh, March 17, 1839, he came to London in 1862. He attracted attention with his *Drumhead Court Martial*, 1865; became A.R.A. in 1866, and R.A. in 1873. He died Feb. 21, 1893. Pettie was essentially an interpreter of chivalrous romance.

PETTY OFFICER. In the British navy, rank below and next to warrant officer, corresponding to that of non-commissioned officers in the army. Candidates are selected from leading seamen of very good character with at least one year's seagoing service, and have to pass a stringent examination and in addition possess a gunnery or torpedo qualification.

PETTY SESSIONS. In English law, sittings of two or more justices of the peace or of a stipendiary magistrate. The courts of petty session are those which try in a summary way, without a jury, certain minor offences, and the amount of punishment which may be inflicted is strictly limited.

PETUNIA. Perennial ornamental herb of the order Solanaceae. A native of S. America, it was introduced into Britain early in the 19th century. The plants are from 6 ins. to 2 ft. high, and the funnel or salver shaped flowers are chiefly red, violet, blue, and white.

PETWORTH. Town of Sussex. It is 14 m. from Chichester on the Southern Rly. S. Mary's Church has memorials of the Percy and Wyndham families. Petworth House, now the seat of Lord Leonfield, was built by the 3rd earl of Egremont about 1800. It contains carvings by Grinling Gibbons and some fine pictures. Pop. 2,435.

PEVENSEY. Village of Sussex. It stands on Pevensay Bay, 6 m. from Eastbourne, and 12 m. from Hastings, with a station on the Southern Rly. It occupies the site of the Roman station of Anderida, and was the landing place of William the Conqueror. A castle, of which ruins remain, was built here by the Normans, who erected it within the Roman walls. This is now the property of the nation, to whom it was given by the duke of Devonshire. Other buildings of interest are the church of S. Nicolas, and the Old Mint House. Pop. 764. See *Anderida*.

PEWSEY. Market town of Wiltshire. On the Avon near the Kennet and Avon canal, 11 m. from Marlborough, it is served by the G.W. Rly. The valley in which it lies is called the vale of Pewsey. Market day, first Wed. in month. Pop. 1,700.

PEWTER. Alloy at one time very largely used for the manufacture of drinking vessels, flagons; salt cellars, trays and plates, inkpots, etc. Its preparation in Great Britain was more or less regulated for many generations by the Pewterers' Company of London. While the composition of pewter has varied very much, the commonest variety consists of about 80 p.c. tin and 20 p.c. lead. As a metal pewter is soft, somewhat resembling tin in colour, but duller and darker. Old pewter is a favourite subject of collectors.

The Pewterers' Company has a history going back to the middle of the 14th century. Its first charter was granted in 1474, arms being allowed in 1479. The first hall, in Lime Street, E.C., was built in 1497, and destroyed in the fire of 1666, was rebuilt in 1678, again burnt in 1840, and then rebuilt a second time.

PFENNIG. Coin of the German currency. It represents the one-hundredth part of a mark (q.v.), and normally copper coins of 1 and 2 pfennig value were issued. Iron pieces of 5 and 10 pfennigs were coined in 1915, aluminium pieces of 1 and 50 pfennigs in 1916 and 1919 respectively, and zinc pieces of 10 pfennigs in 1917. Since 1927 50 pfennig pieces consisting of pure nickel have been minted.

PHAEDRA. In Greek mythology, daughter of Minos, king of Crete, and wife of Theseus, king of Athens. She took her own life because the passion she had conceived for her stepson, Hippolytus, was not returned by him. See *Hippolytus*.

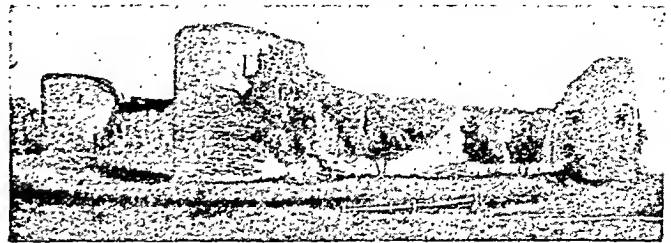


Petunia. Flower of the South American plant

built about 1800 B.C., are the remains of an earlier one. Two miles away, at Hagia Triada, is a small palace of about 1600 B.C.

The Phaestus disk is a clay tablet now in the Candia Museum, Crete, discovered at Phaestus in 1908. It bears on both sides in spiral lines 241 pictorial characters printed from 45 stamps. The pictures include a mastless galley and seamen. See *Aegean Civilization*.

PHAETHON (Gr. *shining*). In Greek mythology, the son of Helios, the sun-god.



Pevensy, Sussex. Walls of the ruined castle, from the north-west

Attempting once to drive his father's chariot across the skies, he proved too weak to control the spirited horses, with the result that he came so near to earth that a portion of it was burned, the parched condition of the Sahara being attributed to this mishap.

From his name was taken that of phaeton, a high, four-wheeled open carriage, for one or two horses. Invented in the second half of the 18th century, it had long popularity as a showy equipage for fashionable whips.

PHALANX (Gr.). Tactical formation of infantry introduced by Philip of Macedon and perfected by Alexander the Great. The Macedonian spearmen, armed with very long spears, were arranged many ranks deep, so that a large number of spears projected beyond the first line. With this formation the charge was made, and to it Alexander's great victories over the Persians at Issus, 333 B.C., and Arbela, 331 B.C., were largely due. The Roman legionaries checkmated the phalanx by giving it no opportunity to charge, by luring it on to broken ground, and thereupon breaking it up with missiles.

PHALAROPE (Gr. *phalaris*, eot; *pous*, foot). Small, migratory shore bird related to the snipe. Two species occur in Great Britain, the red-necked phalarope and the grey phalarope. The former breeds in the Hebrides and the Shetlands. The latter is an irregular winter migrant to the S. coasts of England.

PHARAOH. Kingly title in ancient Egypt. In the pyramid age this term denoted the royal estates, and during the Middle Kingdom tended to be used symbolically. With the new Empire it became a personal title, and in Shishak's time accompanied the personal name. Thereafter Pharaoh came to denote colloquially the reigning king.

PHARISEES (Heb. *parush*, separated). Religious party among the Jews. They sprang from the Chasidim during the Maccabean wars, and were originally the patriots of the nation, who insisted on the permanent separateness of the Jews from the Gentiles, and upon the eternal and unchanging authority of the law of Moses. As the champions of Jewish nationalism they were politically opposed to the Sadducees and Herodians; but all were agreed to oppose the teaching of Christ. See *Scribe*.

PHARMACY. Greek word meaning originally the use of drugs. It appears to have been at first practised by priests, and later in Europe it was largely in the hands of monks. In the 17th century the word began to be used for the compounding of medicines, and the work of the chemist became quite distinct from that of the medical man. After 1852, in Great

Britain, registered chemists were distinguished from unregistered ones, since when the former have been known as pharmaceutical chemists. See Chemist; Dispenser.

The Pharmaceutical Society was established in 1841 for the purpose of advancing chemistry and pharmacy. It conducts examinations for those wishing to qualify for registration as pharmaceutical chemists and institutes proceedings against persons who contravene the Pharmacy Acts. The offices are at 17, Bloomsbury Square, London, W.C.1.

The British Pharmacopoeia, an authoritative work on the preparation, constitution, and dosage of drugs and medicines, is issued by the General Medical Council and revised from time to time. It first appeared in 1864.

PHAROS. Western extremity of the city of Alexandria, Egypt. Formerly an island, it was joined to the city by a causeway which divided the harbour into two portions. Here stood the ancient Pharos, or lighthouse, accounted one of the seven wonders of the world, built under Ptolemy II, about 260 B.C. The site of the old lighthouse was later occupied by the picturesque Port Kait Bey. See Alexandria.

PHARSALUS. Town of ancient Greece, in the dist. of Pharsalia, Thessaly. Situated near the river Enipeus, it was the scene of fighting during the war between Rome and Macedonia (197 B.C.). The battle of Pharsalus was fought Aug. 9, 48 B.C., on the territory (Pharsalia) of the town of Pharsalus, between Caesar, with 22,000 men, and Pompey, with twice that number. It was the decisive battle of the civil war. See Lucan.

PHARYNX (Gr. throat). Cavity extending from the base of the skull to the level of the cricoid cartilage of the throat, where it becomes continuous with the oesophagus or gullet. The Eustachian tubes (q.v.) open into the upper part of the pharynx, one on each side. Inflammation of the pharynx is known as pharyngitis. Acute pharyngitis may be the simple sore throat of a common cold, or may be due to more serious infection from scarlet fever, diphtheria, etc. Chronic pharyngitis or "clergyman's sore throat" results from over-use of the voice. Treatment demands rest of the voice and abstinence from smoking and alcohol. Astringent sprays containing menthol may be prescribed.

PHEASANT. Family (Phasianidae) of game birds greatly esteemed for the table. It includes over 50 genera, and comprises the partridges, quails, domestic poultry, guinea fowl, and peafowl.

The common pheasant (*Phasianus colchicus*) is a native of Turkey, Greece, and Asia Minor, and is believed to have been introduced into Britain by the Romans. It has, however, been freely interbred with other spe-

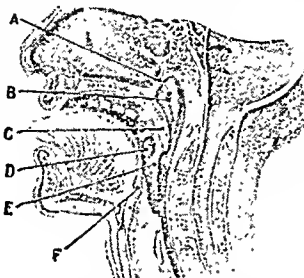


Pheasant. Cock of the common variety, *Phasianus colchicus*, of the game bird W. S. Berridge, F.Z.S.

cies introduced later, notably the ring-necked pheasant from China and the green pheasant from Japan. The pheasant feeds upon insects and snails, in addition to seeds, grain, and berries. It will flourish in the coverts without attention if protected from foxes and poachers. In Great Britain the close time for pheasants is from Feb. 2 to Sept. 30. See Argus Pheasant; Guinea Fowl.

PHEASANT'S EYE or **BIRD'S EYE** (*Adonis annua*). Annual herb of the order Ranunculaceae. A native of Europe (rare in Britain), W. Asia, and N. Africa, it has short, branching stems, with numerous much-divided leaves. The flowers are nearly globular. The petals are crimson with a darker spot at the base, which constitutes the pupil of the eye indicated by the name. Pheasant's eye is also applied to the poet's narcissus.

PHEIDIAS (c. 490-432 B.C.). Sculptor of ancient Greece. Born at Athens, the son of Charmides, he was employed on the famous statue of Athena Parthenos, and became superintendent of all the artistic undertakings carried out during the administration of Pericles. Thus he directed the execution and decoration of the whole group of buildings on the Acropolis. Later he was accused of impiety and of misappropriation of the treasure entrusted to him, and is said either to have died in prison or to have fled to Elis.



Pharynx. Section of throat showing position of the pharynx. A. Posterior edge of nasal septum. B. Orifice of Eustachian tube. C. Soft palate. D. Palatine tonsil. E. Pharyngo-palatine arch. F. Epiglottis

PHELPS, SAMUEL (1804-78). British actor. He was born at Devonport, Feb. 13, 1804, and made his first London appearance as Shylock at The Haymarket, Aug. 28, 1837. For the next five years he played with Macready at Covent Garden and Drury Lane. On May 27, 1844, he opened Sadler's Wells Theatre with Macbeth, and gave his last performance there, March 15, 1862, having produced in the interval no fewer than 31 of Shakespeare's plays and made the theatre a power in the dramatic world. He died Nov. 6, 1878.



Samuel Phelps, British actor

PHENACETIN. Colourless crystals. Sparingly soluble in water, it is tasteless and odourless. It is frequently employed to relieve headache, neuralgia, migraine, and the pains of sciatica and locomotor ataxia and similar troubles. Phenacetin is one of the substances derived from coal tar.

PHILADELPHIA. Ancient city of Lydia, Asia Minor. Founded by Attalus Philadelphus, king of Pergamum, about 150 B.C., it is now represented by the town of Ala-Shehr, at the N.E. base of Mt. Tmolus (Boz Dag), 80 m. E. of Smyrna. Pop. 22,000.

PHILADELPHIA. City and port of U.S.A. It stands on the right bank of the Delaware river, 96 m. from its mouth and 90 m. by rly. from New York, and is intersected by the Schuylkill river. Broad Street bisects the city from N. to S., and where Market Street cuts it at right angles is City Hall Square. The chief wholesale houses occupy Market Street, and S. of it is Chestnut Street, with retail stores and newspaper offices.

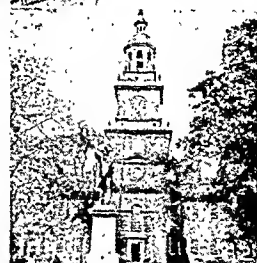
William Penn, in 1682, founded Philadelphia as a Quaker colony, and later it was the political centre of the young republic. In Independence Hall the Declaration of Independence was signed. Here is the Liberty

Bell (see illus. p. 72), which announced that the declaration had been adopted. Close by is the old Congress Hall, the first regular home of Congress, and a few streets away is Carpenters' Hall. The Penn Treaty Park, in Beach Street, commemorates the elm under which, in 1682,



Penn made his bargain with the Indians.

Philadelphia is a busy industrial and commercial city. It is a great oil shipping port. Sugar and petroleum refining, printing and publishing, and shipbuilding are important industries. The City Hall is an immense white marble structure surmounted by a statue of Penn. Other notable buildings are the Masonic Temple, the Stock Exchange, and the Girard Bank. New buildings include a magnificent art gallery and a beautiful free library. The private art collections of Philadelphia are famous. Pennsylvania and the Philadelphia and Reading Rlys. have their head offices in the city. The university of Pennsylvania dates from 1740. Pop. 2,064,200.



Philadelphia. 1. City Hall. 2. Independence Hall where the Declaration of Independence was signed, July 4, 1776

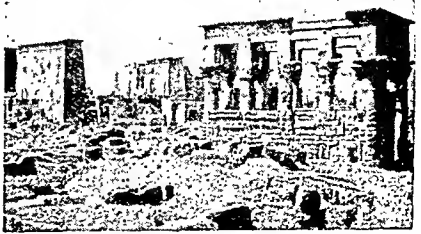
PHILAE. Small island in the Nile near Assuan (Aswan), celebrated for its exquisite temples. Here are the small unfinished Roman hall colloquially called "Pharaoh's Bed," and two Ptolemaic structures, the Temple of Hathor and the great Temple of Isis. These buildings are now submerged during part of each year owing to the building of the dam at Assuan (q.v.). See illus. below.

PHILEMON. Friend and disciple of S. Paul. To him the apostle addressed one of the epistles belonging to the group known as the epistles of the captivity. It is concerned with a runaway slave of his, who had become one of S. Paul's converts. The slave, Onesimus, had wronged his master and been unprofitable, and S. Paul sends him back and pleads for his forgiveness. The epistle may have been written between about A.D. 60 and 62.

PHILEMON. In Greek legend the name of an aged man who with his wife Baucis (q.v.) received Zeus and Hermes when they visited the earth and no one else entertained them.

PHILIP. One of the apostles. A native of Bethsaida, it was he who estimated the cost of feeding the hungry multitude that had come some distance to hear Christ (John 6).

Another Philip was one of the seven deacons selected by the apostles to relieve them of the work of caring for the poor.



Philae. Left, ruins of the Temple of Isis; right, the Kiosk, called Pharaoh's Bed. See above

PHILIP. Name of six kings of France. Philip I (1052-1108) was the son of Henry I. He added much to the effective area of his little kingdom in a series of wars with the rulers of Normandy, Anjou, and Flanders.

Philip II (1165-1223), known as Philip Augustus, was the eldest son of Louis VII, whom he succeeded in 1198. His great work was the consolidation of the French monarchy. He accompanied Richard I on the Third Crusade, but returned prematurely, and in 1193 invaded Normandy. Later he conquered Normandy, Maine, Anjou, Touraine, and Poitou, 1204-6.

Philip III (1245-85), called the Bold, was a son of Louis IX. His reign was uneventful. He was succeeded by his son Philip IV (1268-1314), called the Fair, who carried on a war with England (1294-99), was defeated by the Flemings at Courtrai, 1302, and in that year started his great struggle with the Papacy over the taxation of the clergy. His younger son became Philip V, and during his short reign (1316-22) did much for France. He was succeeded by his cousin, a son of Charles of Valois, who became Philip VI (1293-1350). In 1337 the long war with England began, and in 1346 Philip was beaten at Crécy.

PHILIP. Name of five kings of Spain. Philip I (1478-1506) was a son of the emperor Maximilian I and the founder of the Hapsburg dynasty in Spain, which he obtained through his mother, who was a daughter of Ferdinand and Isabella.

Philip II (1527-98) was the son of Charles V, and upon the latter's abdication, in 1556, became the chief monarch in Christendom. As his second wife he married Mary, Queen of England. Philip looked upon himself as the champion of the Catholic faith, and he lost the northern Netherlands through his persecution of Protestants. The defeat of his Great Armada, with which he hoped to crush England, was the beginning of Spain's decline. He died Sept. 13, 1598.

He was succeeded by Philip III (1578-1621), his son by his fourth wife, Anne of Austria. Under the reign of his son and successor, Philip IV (1605-65), Spain was brought to the verge of ruin by the aggressive foreign policy of Olivares. Philip V (1683-1746), who founded the Spanish Bourbon dynasty, was a grandson of Louis XIV, and obtained the throne as a result of the war of the Spanish Succession. He died July 9, 1746.

PHILIP II (382-336 B.C.). King of Macedonia. The younger son of King Amyntas, he was brought up, not in his native country, but at Thebes, where he studied military science under Epaminondas. Recalled to Macedonia in 364 to act as regent for his nephew Amyntas, he seized the throne and then set about

bringing the Macedonian army under discipline and organization which would make it a first-rate instrument of war. Philip created the Macedonian phalanx, and added to it the cavalry organization which gave the combined arms an overwhelming superiority over the traditional Greek tactics. Athens took alarm at his growing power, and united with Thebes to oppose him, but they were decisively

beaten at Chaeonea, 338 B.C., and at a congress of the Greek states Philip was elected captain-general in 337. Philip was the father of Alexander the Great.

Philip V (c. 237-179 B.C.), king of Macedonia, was the son of Demetrius II. In 215 he concluded an alliance with Hannibal in consequence of which the Romans formed a combination against him in 211 which kept Philip busy fighting until 205, when a peace was concluded. The war was renewed by the Romans in 200, and in 197 Philip was completely defeated.

PHILIPHAUGH. Battlefield in Selkirkshire. It is 3 m. from Selkirk. Here, Sept. 13, 1645, the marquis of Montrose was defeated by the parliamentarians under David Leslie. The victory was stained by a massacre of Irish prisoners and women. See Montrose, Marquess of.

PHILIPPEVILLE. Port of Algeria, forming the main entrance to the dept. of Constantine. The city, founded by the French in 1838, stands on the site of an ancient city identified with the Rusiada of the Romans. It is a terminus of the rly line from Constantine, 54 m. S., handles much of the trade of E. Algeria and the Sahara, and has steamer connexion with Algiers and Marseilles. It was bombarded by the German cruisers Goeben and Breslau, Aug. 4, 1914. Pop. 29,242.

PHILIPPI. City of ancient Macedonia. Founded by Philip of Macedon, it was situated on a spur of Mt. Pangaeus near the river Gangas. One of the first Christian churches was founded here by the Apostle Paul, whose letter to the inhabitants is included in the N.T. It is important as the scene of two battles fought in 42 B.C. between the forces of Brutus and Cassius, and those of Octavian. In the second engagement here, Brutus was defeated and committed suicide, and his army was annihilated. The result was to make Octavian and Antony masters of the Roman world. See Augustus; Brutus.

PHILIPPIANS, EPISTLE TO THE. One of the epistles of S. Paul, belonging to the group known as the epistles of the captivity. It is addressed from prison to the Church of Philippi, which S. Paul founded on his second missionary journey. Since the imprisonment was probably in Rome rather than in Caesarea, the epistle may be assigned to A.D. 63. It is a very personal letter, expressing S. Paul's thanks for gifts and other friendly acts, and his great joy in the

Gospel, and exhorting the Philippians to rejoice with him.

PHILIPPICS. Series of speeches by Demosthenes. They were so called because their purport was to warn his countrymen against the designs cherished by Philip of Macedon for the overthrow of Greek independence.

PHILIPPINE ISLANDS. Group of islands in the N. part of the East Indies, belonging to the U.S.A. They number more than 7,000, and cover about 115,000 sq. m. Among the principal islands are Luzon, Mindanao, Palawan, Negros, Panay, Samar, Mindoro, and Cebu. Manila is the capital.

Mainly of volcanic origin, the Philippines are traversed by mt. ranges, well clothed with vegetation and separated by plains of great fertility, watered by innumerable lakes and rivers, which afford ample means of transport. Large forests of teak, ebony, sandal, and other valuable woods occur, and among the economic plants are the Manila hemp, coconut, gomuti palm, pineapple, cotton, tea, coffee, cocoa, indigo, sugar cane, tamarind, and tobacco. Rice is cultivated, and bananas and other fruits produced. Gold is the most valuable mineral. Pop. 12,353,800. See map below.

PHILIPPOPOLIS on Plovdiv City of Bulgaria. On the Maritsa, here navigable, it was the capital of the former Turkish province of E. Rumelia, and lies about 100 m. N.W. of Adrianople. On the trunk rly from Sofia to Istanbul (Constantinople), and with a branch line to Burgas, it is a trade centre. There are fine churches and mosques. It was named after Philip of Macedon. Pop. 84,655.

PHILIPPUS, MARCUS JULIUS Roman emperor, A.D. 244-249. He was commander of the army which the emperor Gordian III led against the Persians, and incited a mutiny, as a result of which Gordian was murdered and Philippus was proclaimed his successor. He concluded an ignoble peace with the Persians. Philippus was slain at Verona.

PHILIPSTOWN. Town of Otago (King's co.), Irish Free State. It stands on the Grand Canal, 10 m. from Portarlington. It was called Philipstown in honour of Philip II of Spain. Its early name was Dingan. Pop. 460.

PHILISTINES. Ancient people living along the coast of Palestine. They appear to have come originally from Crete and the Anatolian coast, and established themselves in five cities in Palestine—Gaza, Ashkelon, and Ashdod on the coast, and Gath and Ekron inland. They retained their independence till their subjugation was begun by Tiglath-pileser, 734 B.C., and completed by Sennacherib, 701 B.C. Modern research has demolished the legend of their artistic insensibility. The main evidences are the Phaestus disk, the temple carvings of Rameses III at Medinet Habu (1200 B.C.), and the Gezer and Bethshehem excavations. They dominated the neolithic inhabitants by their knowledge of metals and their early monopoly of iron. See Phaestus.

PHILLIMORE, WALTER GEORGE FRANK PHILLIMORE. 1st Baron (1845-1929). British lawyer. Born in London, Nov. 21, 1845, he became a barrister. In 1897 he was made a judge, and from 1913-16 was a lord justice of appeal. He was created a peer in 1918. An authority on ecclesiastical law, Phillimore



Philip, kings of France. Left to right, Philip II, 1198-1223; Philip IV, 1285-1314; Philip VI, 1328-50



Philip V, King of Macedonia from a coin



Philip II, King of Spain After Tiltan



Philip IV, King of Spain After Velazquez



Philip II, King of Macedonia From a coin. By courtesy of John A. Murray



Philippine Islands. Map of the Pacific group belonging to U.S.A. See above

revised J J Blunt's Book of Church Law He died March 13, 1929.

His father Sir Robert Joseph Phillimore (1810-85), was called to the bar in 1841. He became M.P. for Tavistock in 1852 and was an authority on international law. He was made a knight in 1862, and in 1867 was appointed judge of the high court of admiralty. Created a baronet in 1881, he died Feb 4, 1885.

PHILLIPS, STEPHEN (1866-1915). British poet. Son of Dr. Stephen Phillips, precentor of Peterborough Cathedral, he was born July 28, 1866. He went on the stage and played many parts in Sir Frank Benson's company. The appearance of his first volume of poems, *Marpessa*, 1890, brought him exceptional popularity. Later his experience in stage-craft inspired Paolo and Francesca, 1899, a drama in verse, the production of which by Sir Herbert Tree three years later secured the poet's triumph. He then wrote *Herod*, 1900, *Ulysses*, 1902, and *Nero*, 1906, and later volumes of poetry include *A New Inferno*, 1911, and *Panama*, 1915. He died Dec. 9, 1915.



Stephen Phillips.
British poet
Elliott & Fry

PHILLIPS, THOMAS (1770-1845). British painter. Born at Dudley, Warwickshire, Oct. 18, 1770, he acquired the art of glass-painting at Birmingham, and in 1790 was working on the windows in St George's Chapel, Windsor. In 1792 he painted a view of Windsor Castle, and in the next two years exhibited several subject pictures. After 1796 he confined himself to portrait painting. He was elected associate of the Royal Academy in 1804 and member in 1808. He died April 20, 1845. See illus pp 263, 284, 332, and 716.

PHILLPOTTS, EDEN (b. 1862). British novelist. Born in India, Nov 4, 1862, he eventually adopted literature as a profession.

His novels, many of which are fine, intimate, dramatic studies of Devonshire life, with vivid realizations of the Dartmoor country and people, include: *Widcombe Fair*, 1913; *The Spinners*, 1918; *The Bronze Venus*, 1921; *Children of Men*, 1923; *Redcliff*, 1924; and *The Human Boy*, 1927. The *Human Boy*, 1899, is a sympathetic study of boyhood. He collaborated with Basil M. Hastings in *The Happy Ending*, *The Angel in the House*, and other plays. His play, *The Farmer's Wife*, 1917, was a great success, as was also *Yellow Sands*, 1926, written with his daughter, Adelaide, whose *The Mayor* was produced 1929. In 1927 *The Blue Comet*, in 1928 *My Lady's Mill*, and in 1930 *Devonshire Cream* were produced.



Eden Phillpotts.
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PHILOLOGY (Gr. philos, lover of; logos, word, speech). The study of words, their sounds, origin, meaning, inflexion and usage, specifically comparative philology, the study of the different sounds and words of languages included in a kindred group, such as the Indo-Germanic or Aryan, the Semitic, etc. Its object is to collate and explain varieties in form, and to discover the principles which govern them. Languages are divided into: (1) monosyllabic or radical, without inflexions, such as Chinese; (2) agglutinative, with separable prefixes and suffixes attached to a root-word, such as Hungarian; (3) inflexional, such as the great Indo-Germanic group (see Aryan).

A comparison of the older with more recent forms of a language shows that great changes

have taken place and are still going on in the form and meaning of words. Philology examines these, and where possible accounts for them. Causes of such changes are many, as to make a sound or combination of sounds as easy as possible, unconscious or imperfect imitation, assimilation, and indistinct articulation, etc. Most of these are connected with the mechanism of speech, and are therefore classed under the head of phonetic change. The modern school of philology has found that phonetic laws, of a specific period and in a specific speech-community, are absolutely fixed and subject to no exception in that period. See Phonetics.

PHILOMELA (Gr. lover of song). In Greek mythology, daughter of Pandion, king of Athens. Dishonoured by Tereus, who had married her sister Procné, Philomela, together with her sister, took revenge by serving up to Tereus the flesh of his own son Itys. Pursued by Tereus, Procné and Philomela were transformed into a nightingale and a swallow. According to another version, Philomela becomes the nightingale. Pron. Fillo-meela.

PHILOSOPHY. Greek word, invented by Socrates in the 5th century B.C. to express the distinctive attitude which he took up to knowledge. His scientific contemporaries and predecessors had called themselves sophoi—wise men; he called himself a philosopher—one fond of or seeking wisdom—to show that while he believed in wisdom or science, he did not think he or anyone else had attained it. As developed by the Greeks, philosophy came to have two main characteristics. In the first place its method is reflective. It takes as its data not the data of the sciences, but the sciences themselves. In the second place it is concerned with things as a whole, while the sciences are departmental.

The impulse to philosophy arises from the apparent contradictions of different spheres of human inquiry. We can only understand what we are doing in these different spheres by reflecting on the principles or assumptions on which our different activities are based. This is the task of philosophy. Thus the business of moral philosophy is not to say what is right or wrong—that is done in moral judgements—but to understand what morality is; as the business of the philosophy of art is not to say what is beautiful or ugly, but to understand what we are doing when we call things beautiful or ugly, and what the relation of that activity is to morality or to science.

Philosophy, therefore, is always concerned with the principles or assumptions which lie behind different branches of human activity. It is not concerned with the details of those activities, except in so far as they illustrate the principles. See Metaphysics.

Phiz (abbrev. of physiognomy). Pseudonym taken by the draughtsman and Dickens illustrator, Hablot K. Browne (q.v.).

Phlebitis (Gr. phleps, vein). Scientific name for the inflammation of a vein (q.v.).

PHLOX (Gr. flame). Genus, of about 50 species, of herbs, mostly perennials, of the order Polemoniacae. Natives of N. America (chiefly) and Siberia, they have undivided leaves, and showy salver-shaped flowers of some tint of red, violet, or white, borne singly or in panicles. Many of them have become favourite garden flowers in Britain. Mostly hybrids, these are perennials, propagated by cuttings and root-divisions; the natural species may also be increased by seed sown as soon as ripe. Phloxes do well in any well-drained garden soil; the tall-growing forms need one that is heavy and deep, and in hot weather require ample water.

Phoebus. In Greek mythology, name given to Apollo as the sun god. See Apollo.

PHOENICIA. Ancient territory on the E. coast of the Mediterranean, N. of Palestine, between the range of Mount Lebanon and the sea. Its length from Akko (the modern Acre) northwards did not exceed two hundred miles; its breadth averaged perhaps fifteen miles.

The destinies of Phoenicia were determined by her geographical position. Her security upon the landward side encouraged maritime development, and the fame of the Phoenicians is due to their supremacy as navigators. In the 5th century B.C. the pre-eminence for a thousand years which they had inherited was still undisputed. They alone of seafaring men had passed out of the Mediterranean, coasted along Spain and France, established a trade with the "Tin islands"—the Scilly Isles and Cornwall—and penetrated possibly as far as the Baltic. Phoenician ships in the Egyptian service actually accomplished the circumnavigation of Africa about the year 610 B.C.

Phoenicia never formed a united nation with a common government. It was a group of city states, among the most important of which were Sidon and Tyre. In the 11th century B.C. Tyre had definitely become the leading Phoenician state. Hiram, king of Tyre, was the ally of David and Solomon during the brief period of Hebrew consolidation and expansion. After having been subjugated by Assyria and later by Babylonia, Phoenicia formed for two hundred years an autonomous province within one of the great satrapies of the Persian empire, providing the Persian kings with the most efficient contingents of their fleets.

After Alexander the Great had put Darius to rout at the Issus (333), the cities of Phoenicia, with the exception of Tyre, broke from the Persian allegiance and submitted to the Macedonian. Then ensued one of the most memorable sieges in classical history. Tyre had defied Nebuchadrezzar for 13 years; now it defied Alexander. With the fall of Tyre in July, 332, the separate history of Phoenicia comes to an end. The history of Greater Phoenicia, the independent Phoenician colonies, was to all intents and purposes the history of Carthage. See Alphabet; Carthage.

PHOENIX. In Greek legend, king of the Dolopæ. He became tutor of Achilles and accompanied him to the Trojan War. Phoenix was one of the heroes who took part in the hunt for the Calydonian boar.

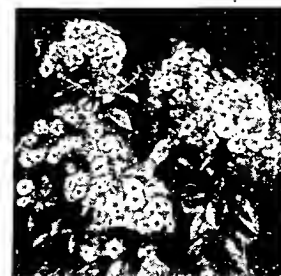
PHOENIX. Mythical bird of the Egyptians, sacred to the sun god. In the best-known version of the fable the bird was supposed to appear at Heliopolis once in every 500 years and build a pyre, on which it was burnt, a new phoenix arising from the ashes.

In astronomy the phoenix is one of the southern constellations. It possesses a number of well-known double stars.

PHOENIX PARK. Public park in Dublin. The name is derived from the Irish fionn nisse, meaning clear water.

On May 6, 1882, Lord Frederick Cavendish and T. H. Burke were murdered in Phoenix Park. In 1883 a builder named

James Carcy turned informer, and largely on his evidence 20 men were found guilty and five were hanged for the murders. Carcy was sent for safety to S. Africa, but he was murdered at sea, July 29, 1883.



Phlox. Foliage and clusters of flowers

PHOLAS. Genus of marine bivalve molluscs. They burrow in soft rocks, wood, and firm mud around the shore, about four species occurring in Great Britain. They have white shells. The common species, known as the piddock, is used both for bait and food.

PHONETICS (Gk. *phonētikos*, connected with the voice). Study of the articulate sounds of a language, the manner of their production, and their mutual relations. The sounds are formed by a current of air breathed out from the lungs, passing through the larynx (q.v.) and modified by the relative position of the tongue, palate, teeth, lips, etc.

Speech-sounds are divided into vowels and consonants, the latter characterised by definite contact between the two parts of the mouth-passage. Sounds are said to be voiced (e.g. v, m, b, and usually vowels), or voiceless (e.g. t, s) according as the vocal chords are drawn across the larynx or are relaxed.

Consonants are classified according to (a) the place of formation, e.g. lip (b, p, m); point (of tongue), (t, d, l, n); back (k, g), etc.; (b) the character of the contact in the mouth-passage, e.g. momentary complete closure (stop consonants) as in b, p; extreme narrowing, as in f, s, th (open consonants), and so on. Vowels are divided into (a) high, mid, or low, i.e. surface of the tongue nearer to or farther from the palate; (b) front, back, or flat, i.e. tongue pushed forward, drawn back, or lying flat; (c) round or unrounded, i.e. lips protruded or in natural position; (d) tense or slack, i.e. tongue muscles braced or relaxed.

PHONOGRAPH (Gr. *phōnē*, sound; *graphein*, to write). Talking machine which records and reproduces sounds. As invented in 1876 it consisted of a rotating brass cylinder, covered with tin foil, against which pressed a needle secured to a thin diaphragm. The needle ran in the middle of a helical groove cut on the cylinder, and when the diaphragm was not vibrating the needle forced the tin foil into the groove, whereas when the diaphragm was vibrated by sound waves entering a horn, the movements of the needle made indentations in the tin foil in the groove. In the modern perfected machine the metal cylinder covered with foil is replaced by a cylinder of wax or its equivalent, in which is cut the sound record. See Dictaphone; Gramophone.

PHOSGENE. Alternative name for carbonyl chloride, COCl_2 . A gas discovered by J. Davy in 1811, it is formed by the action of light on equal volumes of carbonic oxide and chlorine. It is employed in the manufacture of aniline dyes and other organic chemicals. Phosgene was one of the poison gases used in the Great War.

PHOSPHATES. Mineral deposits largely used in fertilisers. The phosphate rocks found in different parts of the world consist largely of fossilised animal remains or of mineralised guano. Rocks of this type may contain from 40 to 80 p.c. of tribasic phosphate of lime. Phosphate, however, in its raw state is not soluble in water. It therefore must be chemically treated and turned into super-phosphate before its phosphoric acid becomes available as plant food. See Basic Slag; Manure.

PHOSPHORESCENCE. Power of emitting light possessed by many animals. It occurs frequently among the Protozoa, jelly fishes, worms, crustaceans, insects, and fishes. The familiar phosphorescence of the sea is due to the presence of swarms of the protozoan

Noctiluca. In the jelly-fishes, phosphorescence accompanies the power of stinging, and is probably of a warning character; while the angler fish uses it to attract the small species on which it preys. Among animals of the deep sea it serves apparently as an illuminant. The means by which the light is produced is not yet fully understood. It is probably akin to electrical phenomena.

A number of substances continue to emit light when placed in darkness after exposure to light. Phosphorus itself does so, but the phenomenon is due to oxidation and not to true phosphorescence. Barium and calcium sulphides, all minerals containing aluminium, etc., are phosphorescent. It has been shown that it depends upon the presence of a metal, a soluble flux, and a sulphide of an alkaline earth. See Fluorescence.

PHOSPHORUS (Gr. *phosphoros*, light-bringing). Chemical element which derives its name from its property of becoming luminous in the dark. Its symbol is P; atomic weight 31.027; atomic number 15. Phosphorus does not occur in the free state in nature, but exists combined as phosphate. It is always found in plants, from which animals derive the phosphate found in bones to the extent of three-fifths of their weight. Large deposits of mineral phosphates exist, which are now employed in place of bone-ash for the preparation of phosphorus.

Phosphorus is a pale yellow waxy-looking solid which readily takes fire when exposed to the air. It is converted into another variety known as red phosphorus by heating to a temperature of between 240° to 250°C . for a time. It is this variety which is used in the manufacture of matches. Phosphorus is also used in the preparation of vermin-killer.

Acute poisoning by phosphorus has occurred from taking rat poison, and among children from sucking match-heads. From one to two grains are likely to be fatal. Treatment consists in washing out the stomach, or giving copper sulphate as an emetic. Fatty material, such as milk, should not be given.

PHOSPHORIC ACID. Compound of phosphorus, hydrogen, and oxygen, H_3PO_4 . It is made on a commercial scale by treating bone-ash or mineral phosphate with sulphuric acid in wooden vats and filtering off the phosphoric acid from the precipitated calcium sulphate. Its salts are called phosphates.

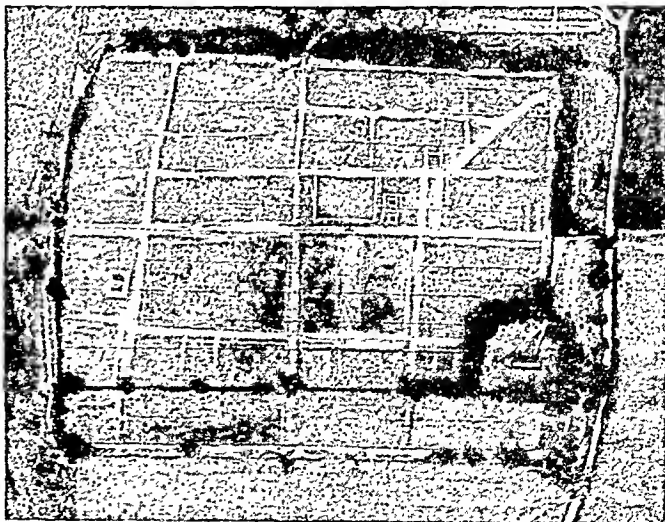
PHOSPHOROUS ACID. H_3PO_3 . Acid formed when phosphorus oxide is added to water, the oxide being produced by the slow oxidation of phosphorus. The salts obtained are called phosphites.

PHOTO-CHEMISTRY. Branch of chemistry which deals with chemical changes due to the action of light. For example, if a mixture of chlorine and hydrogen is kept in the dark, no chemical combination takes place, but if a beam of light be allowed to fall on the glass vessel containing the mixture, chemical combination takes place with explosive violence, hydrochloric acid being formed. Light also "reduces" many chemical salts, this fact being the basis of the operations of photography (q.v.).

PHOTO-ELECTRICITY. H. R. Hertz (q.v.) found that an electric spark passed more readily between metallic terminals when these were illuminated by ultra-violet light. As a result largely of the researches of Hallwachs, Elster, and Geitel it was found that many metals emit electrons when subjected to the action of light. The alkali metals especially show the photo-electric effect. A typical photo-electric cell, as used in sound-film work, phototelegraphy, and television, comprises a glass bulb, exhausted to a vacuum, or filled with some such gas as argon. The cathode, or electron-emitting electrode, consists of a film of potassium, rubidium, etc., deposited on a layer of silver inside the glass bulb. There is an anode, often ring-shaped. Current from a battery connected to cathode and anode maintains a potential difference between the electrodes, and drives the electrons across the cell. The emission is proportional in amount to the intensity of the light. In some substances the photo-electric effect is dependent on the direction of the plane of polarisation of the light rays. See Cinematograph; Phototelegraphy; Television.

PHOTOGRAPHY. Process by which forms of objects are recorded by the action of light on materials treated with light sensitive chemicals. Joseph Nicéphore Niepce about 1829 devised a crude printing process depending upon the sensitivity of bitumen. Partnership with Louis Mandé Daguerre (q.v.) produced the daguerrotype (1839), depending on light action on silver iodide. Fox Talbot sensitised paper with silver nitrate, fixed the negative prints with common salt, and produced positive prints (1835). In 1837 he patented the calotype, which competed successfully with the daguerrotype. Sir John Herschel used hypo (hyposulphite of soda) as the fixing agent, and is said to have invented the terms photograph, positive and negative.

Glass instead of paper negatives were next devised, and in 1851 all previous methods were superseded by Scott Archer's wet plate (collodion) process with silver iodide as the light sensitive reagent. The plates could not be stored, and had to be exposed and developed while wet, requiring a portable dark room. Plates with dry gelatin emulsion were put on the market in 1877 by J. W. Swan (q.v.). These and all other plates were sensitive only to rays in the blue and violet sections of the spectrum until Dr. H. W. Vogel of Berlin in 1872 made them also sensitive to the green and yellow by adding certain dyes to the



Photography as an archaeological aid. Aerial photograph of the site of a Roman town at Caistor, near Norwich. The streets and the foundations of some of the buildings were revealed by pale streaks in the barley which was then growing

R. I. F. Official

emulsion. Such colour sensitive (orthochromatic) plates are now superseded by panchromatic (sensitive to all colours) plates, made possible by the discovery of other dyes.

Modern plates are machine-coated with emulsion of silver nitrate and potassium bromide in warm gelatin solution. Films (q.v.) in roll form have largely displaced the glass plate. Albumen printing paper, generally used from about 1850 to 1892, had to be sensitised in a silver nitrate bath just before use. Sir William Abney devised a gelatin-emulsion paper which sold ready for use, and was marketed by the Ilford Company as P.O.P. (printing-out-paper) in 1891.

AERIAL PHOTOGRAPHY. In war time the aerial photograph is used to provide information about an enemy and his territory, for military map-making, and to furnish permanent records of the results of bombardments and other operations.

In photographic surveying the aeroplane is flown to and fro at a regular speed, exposures being made in ordered succession. A strip of the territory is thus dealt with, the photographs overlapping to some extent. Adjacent strips also overlap. The prints are pieced together so that a record of the whole area is obtained. Besides map making, other important applications are for topographical, geological, or engineering survey.

Aerial photography has proved of immense value in archaeological surveying. Wherever the soil has been disturbed the vegetation takes on a different hue. Seen from the air, the lines of an ancient city show up in a remarkable manner, and even after years of cultivation the location of ancient ditches or roads is marked by lines among the corn or barley. The streets and building foundations of a Roman town at Caistor near Norwich were completely revealed in this way (see illus. p. 1075).

Photogravure. Photo-mechanical process of making printing plates, known also as intaglio (q.v.).

PHOTOTELEGRAPHY. Process of transmitting photographs, pictures, drawings, etc., by telegraphy. It may be divided into four stages: (1) The print or diagram to be transmitted, fixed to a revolving cylinder, is scanned, i.e. traversed by a minute spot of light, which passes in successive lines over its whole surface. The cylinder advances by a spiral motion. (2) The variations of light and shade on the picture are caused to affect a photo-electric cell, and are thus changed into variations of electric current. The current, after amplification by a thermionic valve, is caused to modulate a carrier current in the transmitting circuit. (3) The modulated carrier current is sent out over the telegraph wires to the distant station. (4) At the receiving apparatus the carrier current operates a light valve, and the electrical variations are thus translated into light variations corresponding to those set up by the original picture when scanned. A tiny spot of light, controlled by the light valve, falls on a sensitive photographic film attached to a revolving cylinder. The cylinder is synchronised with that at the sending station, so that there appears on the photographic film a replica in light values of the original, built up strip by strip. The film when developed becomes a copy of the original picture or diagram. A phototelegraphic service between London and Berlin was opened by the British Post Office in Jan., 1930.

PHRENOLOGY (Gr. phrēn, mind; logos, science). So-called science having for its basis the supposition that mental faculties and traits of character can be gauged from the shape and

size of the skull. It is claimed that the brain is a congeries of organs, through each of which a distinct power of intellect is manifested. The strength of each mental organ is judged by the extent of the cerebral development.

The forty-two sections into which most phrenologists divide the skull are as follows: 1. Amativeness. 2. Conjugality. 3. Parental Love. 4. Friendship. 5. Inhabitiveness. 6. Continuity. 7. Vitativeness (love of life). 8. Combativeness. 9. Destructiveness. 10. Alimentiveness. 11. Acquisitiveness. 12. Secretiveness. 13. Cautiousness. 14. Approbativeness. 15. Self-esteem. 16. Firmness. 17. Conscientiousness. 18. Hope. 19. Spirituality. 20. Veneration. 21. Benevolence. 22. Constructiveness. 23. Ideality. 24. Sublimity. 25. Imitation. 26. Mirthfulness. 27. Individuality. 28. Form. 29. Size. 30. Weight. 31. Colour. 32. Order. 33. Calculation. 34. Locality. 35. Eventuality. 36. Time. 37. Tune. 38. Language. 39. Causality. 40. Comparison. 41. Human Nature. 42. Agreeableness.

PHRYGIA. Ancient country of Asia Minor. It comprehended roughly the tableland of modern Anatolia as far E. as the river Halys, but its confines varied at different times. It was inhabited by the Phryges, warlike settlers of Aryan descent from Thrace. The inhabitants displaced by these invaders, probably about 1200 B.C., appear to have been of the same mixed race as the Hittites, to whose empire they may possibly have belonged.

There existed a powerful Phrygian monarchy, beginning at an unknown date and lasting till the beginning of the 7th century B.C., when it was overthrown. It was then ruled by the Lydians and later by the Persians, and eventually became incorporated in the Roman empire.

Phryne. Greek courtesan of the 4th century B.C. She sat to Apelles as model for his picture of Aphrodite rising from the sea.

Phthisis (Gr. wasting away). Term now restricted to tuberculous disease of the lungs. See Tuberculosis.

PHYLACTERY or **FRONTLET** (Gr. phylaktērion, safeguard). Among the Jews, strips of parchment inscribed with passages from Ex. 13 and Deut. 6, enclosed in a black calf-skin case, and fastened by thongs to the forehead or left hand or arm, the command in Deut.



Phylactery and thongs by which it is bound to the forehead or arm

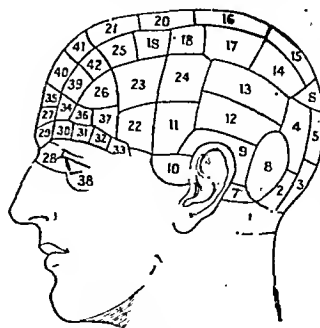
6, 8, being literally interpreted. The word is sometimes used to describe a case containing relics of the dead.

PHYLLOCACTUS. Small genus of leafless succulent shrubs of the order

Cactaceae, natives of tropical America. They have flattened green stems and branches with notched edges. From the notches are produced the large, red, rose or white flowers, which have numerous petals and stamens.

PHYLLOXERA. Genus of insect pests of the order Hemiptera. They are very similar to green fly (q.v.), and one species, *P. vastatrix*, the grape louse, chiefly infests grape vines. They cause destruction by laying eggs under the bark of the vine, and when hatched out may destroy the whole plant. Spraying or washing with bisulphide of carbon is excellent for small vineries, but where the disease is on a large scale frequent spraying with petroleum emulsion should be carried out.

PHYSICAL TRAINING. Systematic exercise for the promotion of health and the development of the body. The earliest form of physical training or physical education was that practised by the ancient Greeks, and consisted chiefly of running, jumping, wrestling, and discus throwing. The Greek example was followed by the Romans, but it was not until the second half of the 18th century that the value of systematic methods was fully appreciated.



Phrenology. Diagram indicating the sections into which the skull is divided phrenologically. See text

The Swedish system, often referred to as "free movements," is practised without apparatus, and is now adopted in Great Britain. It was an important part of the training of the British soldier during the Great War, and forms the basis of the syllabus of physical exercises for public elementary schools issued by the board of education. It is divided into groups, each concentrating on the development of a certain part of the body. See Enrichments; Exercise; Gymnastics; Swedish Drill.

PHYSICIAN. One who practises medicine. Under an Act of 1858 no person can be registered as a medical practitioner unless qualified in medicine, surgery, and midwifery.

The Royal College of Physicians, founded in 1518, was for many years in Warwick Lane, London, but now occupies a building in Pall Mall East.

The Royal College of Physicians of Edinburgh was founded in 1631. Its headquarters are in Queen Street, Edinburgh. The College of Physicians in Dublin was founded in 1654. The office is at 6, Kildare Street, Dublin.

PHYSICS. Branch of science concerned with the fundamental laws of the material universe. It deals with the general properties of matter and the manifestations of various forms of energy. It may broadly be divided into two heads, laboratory physics and mathematical physics. Under the former, research work is carried on in order to obtain the necessary data which enable the postulates and axioms of mathematical physics to be stated.

Mathematical physics is concerned with obtaining axioms and postulates which will enable rigid mathematical rules to be formulated to satisfy observed phenomena. The theories of matter, energy, etc., all come within the domain of mathematical physics. In 1920 an Institute of Physics was formed in Great Britain under the auspices of the Faraday Society, the Optical Society, and the Physical Society of London. See Atom; Gas; Light; Matter; Quantum; Relativity; Wave; etc.

PHYSIOLOGY. Branch of biology which deals with the functions, as distinct from the structure, of living organisms.

Living organisms possess two characteristic properties, upon the possession of which depends their ability to carry out their functions. The first is that the animal is constantly undergoing change, and every day part of its protoplasm, the essential substance of living cells, is destroyed and



Phyllocactus. Flower of the leafless American shrub

replaced by new protoplasm. The second is that the animal has the power to store up energy in its body, and to expend part of this energy from time to time. Food, after undergoing a process of digestion, furnishes the raw material which the living animal transmutates into living protoplasm, or utilises as a source of energy.

In the lowest forms of animal life these processes take place within the compass of a single cell. In animals higher in the scale of evolution there is differentiation of both structure and function, since these animals consist of many cells, some of which are gathered together to form organs. The different organs fall into two main groups. One group is primarily concerned with providing for the nutritive requirements of the body, with the supply of oxygen, and with the removal of waste products from the body. The other group is responsible for bringing about the reactions of an animal to changes in its surroundings. All the higher animals are provided with muscles, which bring about movement of part or the whole of the body: and such movements form the only means by which an animal or man can enter into communication with the outer world.

In the normal animal every muscular movement is controlled by the central nervous system, which consists of the brain and spinal cord connected with the muscles by nerves. The brain is also connected by means of nerves with the surface of the body, with the eye, and with the ear. The development of its nervous system is the measure of an animal's position in the scale of evolution.

PIACENZA. City of Italy, the ancient Placentia. It stands on the right bank of the river Po, just below the influx of the Trebbia, and is a junction 92 m. by rly. N.W. of Bologna and 36 m. W.N.W. of Parma. It contains several palaces, notably the Farnese, a huge structure begun in 1558, but unfinished and now used as a barracks. The cathedral, dating from 1122-1233, has a handsome belfry. The church of S. Antonino, the original cathedral, was founded in the 4th century, and rebuilt in 1104. The church of Santa Maria is decorated with mural paintings, while that of San Sisto (1499) formerly held Raphael's Sistine Madonna, now at Dresden. Pop. 61,676.

PIANOFORTE (It. soft-loud). Musical instrument. The tone is produced by the impact of felt hammers upon wires or strings of varying gauge, length, and tension. The instrument is played from a keyboard composed of seven octaves of long (white) and short (black) levers or keys, seven of the former and five of the latter in each octave. These, on being depressed by the fingers,

set in motion a complicated mechanism (action) designed not only to propel the hammers against the strings, but also to respond to the player's will, by means of his touch, in the way of graduated tone. The action necessitates dampers to check undesired vibrations when the finger releases the key. There are usually two pedals. That on the right suspends the whole damper action when pressed down; that on the left is a contrivance for producing less tone, generally by shifting the hammers so that one string fewer is struck.

The best form of pianoforte is that known as the grand, in which the strings are placed in a horizontal position. In the upright pianoforte they are stretched vertically.

PIASSABA. Fibre largely used for making brushes and brooms. It is obtained from two S. American palms, of the order Palmae. The finer kind, known as Para piassaba, is the envelope of the young leaves of Leopoldinia (Cocos) piassaba. The other and coarser kind comes from the leaf sheaths of Attalea funifera.

PIASTRE (It. piastra, plate of metal, also a coin). Name of a Turkish and an Egyptian coin. The Turkish coin is silver, divided into 40 paras, and nominally worth about 2½d. It is coined in 1, 1, 5, 10, and 20 piastre pieces, and 100 piales go to the £ sterling. The Egyptian piastre is worth a little more than the Turkish, and is coined in similar denominations.

PIAVE. River of Italy. It rises in the Carnic Alps and flows to the Adriatic 22 m. N.E. of Venice, after a course of 125 m. At its present mouth is Porto di Cortellazzo: the old mouth is at Porto di Piave Vecchia nearer Venice. Pron. Pe-ah-vay.

BATTLES OF THE PIAVE. Three battles fought between the Austrians and the Italians in Nov., 1917, June, 1918, and Oct.-Nov., 1918. The first battle was an unsuccessful Austrian attempt to cross the Piave, to which the Italians retreated after the disaster at Caporetto (q.v.) in Oct. 1917. The second battle was an Austrian offensive of mid-June, 1918, to force the river front, in which the first effort was made early on June 15. This was equally unsuccessful.

The third battle was a great Allied victory. The Italians were aided by the 14th British corps and an American regiment. On the night of Oct. 23-24, 1918, British troops crossed the main channel of the Piave. Throughout the rest of the month Allied attacks pressed the enemy at all points of their line. By Oct. 30 the British had reached the Livenza, further advance being only checked by the armistice granted to Austria on Nov. 4, 1918. See Isonzo; Vittorio Veneto.



Piave. Map of the battlefield showing the area recovered in the battle of Oct.-Nov., 1918.

PIBROCH (Gael. piohaircahd, art of piping). Music of the Scottish Highlands, suitable for the bagpipes. In form it is of the variation type, an air being given out and then varied by ornamental treatment of all kinds. The variations usually increase in elaboration, sometimes alternating with a slow version. See Bagpipe. Pron. pee-broch.

PICA. Printing type. Also known as 12-point, it is a size larger than small pica, a size smaller than

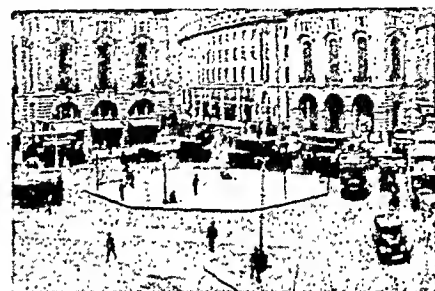
English, and the largest ordinary size of book type: six lines make an inch in depth.

This line is in Pica.

PICARDY. One of the provs. into which France was divided before the Revolution. It had a frontier on the English Channel, and through it ran the rivers Somme and Oise. In it were the cities of Amiens, Laon, Beauvais, Senlis, Soissons, and Noyon; also Boulogne and St. Quentin. It was long a very prosperous district, while the Picard also had a reputation as a fighting man. To-day Picardy is represented by the departments of Somme, and parts of those of Pas-de-Calais, Aisne, and Oise, all of which figured prominently in the Great War. See Amiens.

PICASSO. Name taken by the Spanish painter, Pablo Ruiz. Born in 1881 in Malaga, he moved to Paris, and from 1906-12 was one of the leading exponents of cubism. Later he turned to more conventional forms of art.

PICCADILLY. London thoroughfare. It extends W. from Coventry Street and Piccadilly Circus to Hyde Park Corner. It contains



Piccadilly Circus, London, after the building of the new Underground station.

the Piccadilly, Ritz, Park Lane, Splendide, and Berkeley hotels, Burlington House (q.v.), Burlington Arcade, and many elubs.

Piccadilly Circus is crossed by Regent Street, while Shaftesbury Avenue, Coventry Street and Glasshouse Street lead from it. The elaborate underground station in Piccadilly Circus was opened in Dec., 1928. Piccadilly derives its name from a house called Piccadilly Hall because its owner had made foppish doublet trimmings and collars known as peccadills or peckadills.

The name Piccadilly is also given to a thoroughfare in Manchester.

PICCOLO. Italian word meaning small. Most commonly applied to the little flute which sounds an octave higher than the concert flute. The compass of the piccolo is similar to that of the flute. It is much used in light orchestral music. See Flute.

PICCOLOMINI, MARIETTA (1836-99). Italian opera singer. Born in Siena, she made a successful debut at Florence, in Lucrezia Borgia, 1852, and repeated this success in Rome, Pisa, Bologna, Palermo, Verona, and Turin. Her first appearance in London was at Her Majesty's Theatre, 1856, in La Traviata. Her soprano voice was notable for its sweetness and delicacy of articulation. She died Dec., 1899.



M. Piccolomini, Italian singer.

Pice. Indian copper coin. Four equal one anna (q.v.), and its value is a farthing. It is divided into three pies.

PICHEGRU, CHARLES (1761-1804). French soldier. He was born Feb. 16, 1761, and taught at the military academy of Brienne. In 1793 he became a general, and acquired a great reputation by his series of victories

over the Austrians and their allies. In 1795, however, he began a series of intrigues with the Bourbons, which led to his deportation to Cayenne. Escaping to England, in 1798 he resumed his intrigues, and took part in a plot for the assassination of Napoleon. He was betrayed and arrested, and on April 15, 1804, was found strangled in his bed.



Stephen Pichon,
French statesman

PICHON, STEPHEN JEAN MARIE (b. 1857). French politician. Born Aug. 10, 1857, he became a journalist under Clemenceau. For some years he was in the diplomatic service, being minister to Brazil and China; he was in Peking during the rebellion of the boxers. From 1901-05 he was resident general in Tunis. In 1906 he was elected a senator, and in 1907-09 was foreign minister under Clemenceau. He held that post again in 1909-11, in 1913, and from 1917 to 1920, when he resigned and returned to his post as editor of *Le Petit Journal*.

PICKERING. Urban dist. and market town of Yorkshire (N.R.). It is 32 m. from York, with a station on the L.N.E. Rly., on which line it is a junction. The chief building is the church of S. Peter, which contains some old mural paintings discovered in 1851, and restored, a Norman font, and other Norman work. There are ruins of a castle. The vale of Pickering lies between the moors and the wolds. Market day, Mon. Pop. 3,503.

PICKET. Military term signifying a small detachment of troops used as an outpost or guard. Pickets are usually entrenched, and the picket line is frequently made the line of resistance in case of attack. A picket may also mean a body of troops detailed for certain special eventual duties.

The picket boat is a small boat, usually a steam pinnace, carried by warships.

PICKETING. Term derived from the military word picket, and used in industrialism in a cognate sense. It describes the practice, common during strikes, of placing men near the affected works, to restrain the hands from working, or to obtain information bearing on the dispute. In 1875 picketing, in the sense of bringing compulsion to bear upon other workers, was declared illegal. The interpretation of picketing led to a good deal of litigation. Peaceful picketing, i.e. persuading men by peaceful means to abstain from work, was made lawful by the Trade Disputes Act of 1906, but by an act of 1927 it is an offence if it is committed in connexion with a strike which has been declared unlawful, a general strike, for instance. Picketing is also unlawful if violence is used.

PICKFORD, MARY (b. 1893). American cinematograph actress. Born April 8, 1893, she appeared on the stage as a child, but met with greater success in connexion with the films. In 1920 she married as her second husband Douglas Fairbanks (q.v.).

PICÓN, JACINTO OCTAVIO (1853-1923). Spanish novelist and critic. Born in Madrid, Picón established his reputation as a novelist by his *Lazaro*, 1883, a study of ecclesiastical problems which aroused keen controversy. Other works of fiction, marked by independence of outlook and shrewd psychology, are *La Hijastra del Amor*, 1884; *El Enemigo*, 1887; *Dulce y Sabrosa*, 1891; and *Cuentos de mi Tiempo*, 1895. He was also a distinguished critic, publishing a volume on Velazquez in 1899. He died in Nov., 1923.

PICRIC ACID or TRINITROPHENOL. Bright yellow crystalline powder obtained by the action of nitric acid on phenol (carbolic acid). Picric acid is a powerful antiseptic, but its chief use is in the manufacture of explosives.

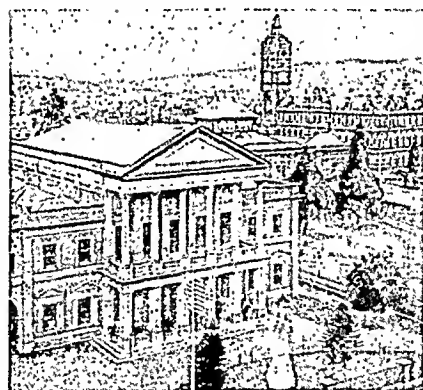
PICTOU. Seaport of Nova Scotia, Canada. It stands on a harbour, an inlet of Northumberland Strait, 118 m. by rly. from Halifax. Coal is exported. Pop. 2,938.

PICTS. Name of a people formerly inhabiting northern Scotland. Divided into two nations, the Northern Picts inhabited the country between the Pentland Firth and the Grampians; the Southern Picts that between the Grampians and the Firth of Forth.

From the 3rd century A.D. the Picts are recorded as harassing foes of the Roman occupation, by whom they were never definitely subdued. S. Ninian and S. Columba were among the missionaries who worked to convert them. Oswald of Northumbria held temporary sway over Pictland in the 7th century, and there were constant wars with the Scots and with the Dalriadic kingdom during the 8th century. The peculiar system of royal succession, by which the rule passed to brothers or the son of a sister, led to confusion, which ended with the establishment of Kenneth MacAlpin, a Pict by maternal descent, as ruler of Scots and Picts in 844.

Picts' Houses. This is a name given to primitive underground structures of the early metallic age. Their erection is attributed to the Picts, although they may be of earlier date, and the theory is that they were used as refuges in times of danger. There are several in the Orkneys, but the greatest number are in the western part of Aberdeenshire. They are also found in Angus and other counties N. of the Tay, while there are a few in Berwickshire and other southern counties.

PIEDMONT (Ital. Piemonte, foot of the mountain). District of N.W. Italy. It is bounded N. by Switzerland, W. by France, S. by Liguria, and E. by Lombardy. It em-



Pietermaritzburg. View showing the Council House in the foreground and, right, the Town Hall

braces the provs. of Alessandria, Cuneo, Novara, and Turin. Mountainous on all its borders but the E., the remainder is a fertile plain. The beautiful Lago Maggiore lies on its E. border. Piedmont is watered by the Po and its tributaries. It became part of the county of Savoy, and later of the kingdom of Sardinia. See Italy.

PIER. In architecture, any isolated vertical mass of masonry, such as the supports of an arch, or the square or round posts on which a gate or bridge is hung. A number of columns grouped or clustered together is known as a compound pier; in this form the pier is a conspicuous feature of medieval architecture from the 10th century.

Bridge piers are the intermediate supports of a bridge, and serve to distribute the weight of the superstructure and its load. They vary from simple timber supports to great masses of masonry on caisson foundations, such as the piers of the Forth Bridge. Steel and iron piers consist of columns, pillars, or stanchions

resting upon masonry or piled foundations. Masonry piers are of concrete, brick, granite, or other suitable stone built up from their foundations. Cylinder piers are steel or iron cylinders, sunk to the right level and filled solid with concrete, upon which the bridge girders rest.

PIER. Jetty or staging projecting into a sea, river, or lake. A pier may be built of stone, being then more often called a mole. It usually consists of superstructure beams or girders carried upon intermediate supports, such as piles driven or screwed down to a secure foundation, carrying rly. or other traffic, and providing embarkation and landing facilities. Along that portion of a pier where ships berth, fendering is provided, consisting either of timber piles or of spring beams, which resist the impact of vessels. Mooring pawls or bollards are provided. See Breakwater; Jetty.

PIERCE, FRANKLIN (1804-69). President of the U.S.A. Born at Hillsborough, New Hampshire, Nov. 23, 1804, he was called to the bar in 1827. He was member of Congress, 1833-37, and sat in the Senate, 1837-42, being a strong Democrat and a consistent supporter of slavery. After serving with distinction in the Mexican War, he was elected president in 1852. His presidency was marked by the passage of the Kansas-Nebraska Act; the Ostend manifesto, advocating the acquisition of Cuba by the U.S.A.; and the Gadsden purchase. He died at Concord, Oct. 8, 1869.



Franklin Pierce,
American president

PIERRE. Capital of S. Dakota, U.S.A. On the Missouri, 119 m. W. of Huron, it is a great cattle market, and uses natural gas. There is a school for Indians. Pop. 3,560.

PIETÀ (Ital. piety, compassion). Representation, in painting, or sculpture, of the Virgin mourning over the dead Christ taken down from the cross; also of any group of the holy women at the Deposition. The episode has formed the motive of innumerable pictures. See Michelangelo.

PIETERMARITZBURG or MARITZBURG. City of S. Africa, the capital of Natal. It stands near the Umsindusi river, 73 m. N.W. of Durban by rly. The chief buildings are the town hall, opened in 1901, the Anglican cathedral, the buildings where the legislature of Natal meets, and others erected for official use, including the law courts. There are also a university college, in the suburb of Scottsville, hospital, library, museum, and theatre. The city has a public park, and there is a botanical garden. The barracks at Fort Napier overlook the city. Pietermaritzburg is an important rly. junction, being on the main line from Durban to the Orange Free State and the Transvaal. The city's industries include tanning and brewing, and the making of wagons and bricks.

Pietermaritzburg was founded by the Boers in 1839, the name being formed by those of two of their leaders, Piet Retief and Safoman Maritz. It became the capital of Natal in 1842. Pop. 19,748 whites. See Natal.

PIETERSBURG. Town of the Transvaal. It stands near the source of the Sand river, 176 m. by rail N.E. of Pretoria. The centre for the Waterberg goldfields, tin, gold, and corundum are mined in the neighbourhood. Pop. 2,412 whites.

PIEZOMETER. Instrument for measuring the compressibility of liquids under varying pressure. The first piezometer was invented in 1882, and consisted of a thick glass tube

closed at each end by a brass cap, one of which was fitted with another tube containing a piston or screw plug, for applying pressure to the liquid in the first tube. This latter tube was fitted with a flask, the neck of which was drawn out into a thin tube and graduated. Pressure on the liquid is communicated to the liquid in the flask by means of a system of valves, and the amount of compression read off on the graduated tube.

FIG. Name applied to members of the family Suidae, which forms part of the even-toed group of the zoological order Ungulata or hoofed mammals. The tribe includes the true pig, hush pig, wart hog, and babirusa. The typical pigs include over a dozen species, the domesticated pig being merely a modified variety of one or more of the wild forms.

Of the various wild species, the European wild boar is the best known. All wild pigs frequent marshes and damp places, and this trait is seen in the love of the tame pig for wallowing in any mud it can find; while the habit of turning up the ground with its snout is a survival of the root-hunting methods of its wild ancestors. The British breeds, derived from the European wild boar (see illus. p. 270), have been greatly modified by crossing with Chinese and other Asiatic breeds. Probably as a result of these crosses, domesticated swine have undergone many modifications, the number of teeth and the vertebrae

turtle dove also breeds in Great Britain, but it is only a summer visitor, arriving early in May and leaving in Sept.

The domesticated pigeon has received great attention at the hands of fanciers, and the number of strains is now very large. Many of these birds differ in form to such a degree that they appear to be almost different species. Darwin selected this fertile group for the study of variation in relation to the evolution of species. The chief varieties are the pouter, the carrier, the tumbler, the fantail, and the homer. The homer and not the carrier is used for carrying messages. Pigeons are fairly hardy birds, but need reasonable attention to keep them fit. See Fruit Pigeon.

PIGEON FLYING. This sport developed from the ancient practice of using pigeons to carry messages, and first became popular in Belgium, where races were instituted about 1820, a special type of bird being bred for them. It was introduced into England about 1871, Belgian birds being brought over. In 1880 a club was founded, and in 1896 the National Homing Union, the controlling body of the sport, came into existence. The organ of the sport is The Racing Pigeon, and there are a large number of clubs in existence.

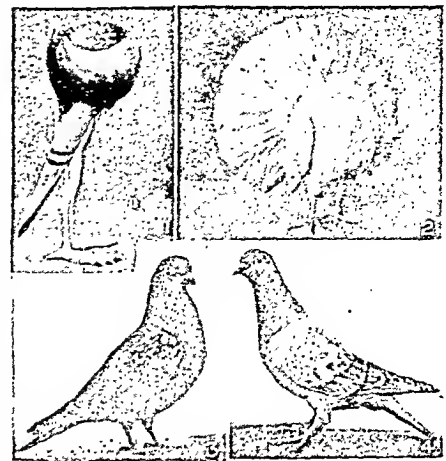
PIGEON SHOOTING. Shooting of practically tame pigeons released from traps. Monte Carlo was a centre of the sport. In 1921 public attention was drawn to the cruelty of this amusement. This campaign drew public attention to the competitions carried out in Great Britain under rules drawn up by the National Gun Club. The practice was prohibited by a law passed in 1921.

PIGMENT (Lat. *pingere*, to paint). In animals, the colouring matter in the dermis or epidermis. Brown to black in most mammals and in man, it is found in the cells of the Malpighian layer. The colouring matter of birds is chiefly found in the feathers. In the case of crustaceans, many fish, and insects there are special colour-secreting cells. Haemoglobin, the red colouring matter, and its derivatives are the best known animal colouring matters from a chemical point of view, the great majority of animal pigments being present in such small quantities, though giving a large coloration effect, as to make accurate chemical analysis difficult. Much of the colour of many animals is the result of a peculiar absorption of light, and is not due to pigments.

Another kind of pigment is the insoluble coloured powder used in painting. The pigments of the ancients were mainly obtained from minerals and earths and were comparatively few in number, but they are the basis of most modern colours. See Painting.

PIGOTT, RICHARD (c. 1828-89). Irish journalist and forger. A native of Meath, he was associated with several journals of an extreme nationalist type. He forged papers purporting to incriminate Charles Stewart Parnell (q.v.) in the murders of Lord Frederick Cavendish and Thomas H. Burke in 1882. His guilt having become apparent in cross-examination before the Parnell Commission, he confessed to H. Labouchere, fled to Spain, and shot himself in Madrid, March 1, 1889.

PIG STICKING. Wild boar hunting. The pig sticking season in India lasts from Feb. to July. Parties usually camp out overnight. An early start is made in



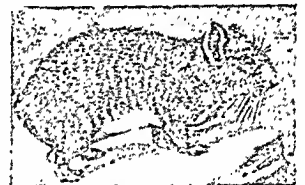
Pigeon. 1. Pouter pigeon. 2. White fantail. 3. Mottled tumbler. 4. Homer or homing. By courtesy of Pigeons and the Pigeon World

the morning, when natives are sent out to beat the surrounding jungle. The mounted huntsmen are stationed in parties of three or four, and directly a boar breaks cover the party nearest to it proceeds to ride it down. Only the male pig is hunted. As soon as the first spear has been driven into the boar it will probably turn and show fight.

PIGTAIL. Long plait of hair worn at the back of the head. Among the Chinese the shaven head and pigtail were a mark of servitude imposed upon them in the 17th century by their Manchu conquerors. Later it became a source of pride to the Chinaman, but is gradually going out of favour. A queue or pigtail was worn in the British army and navy until 1808. See Wig.

PIKA or **TAILESS HARE** (*Lagomys*). Genus of rodents. Found in Russia, Asia,

and N. America, they live among the mountains, burrowing and living in crevices of the rocks, and feeding mainly on grass. The pika is about the size of a guinea pig. See Rodent.



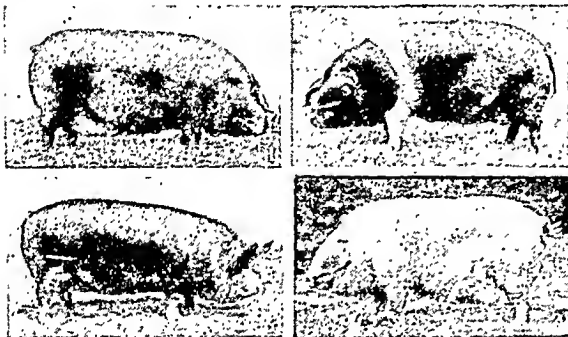
Pika or tailless hare of the mountains of Russia and E. Asia

PIKE. Infantry weapon used for thrusting. It consisted of a staff with a long metal lance-head or sharp spike at the end, and sometimes a spike also at the butt for striking into the ground. Its handle or staff was often from 12 to 14 ft. long. Pikemen played a great part in the wars of the 17th century.

PIKE (*Esox*). Genus of fresh-water fishes. They are found in most temperate regions of Europe, Asia, and America. The common pike (*E. lucius*) occurs in British rivers, and is long and narrow in shape, a fine specimen attaining a length of nearly 4 ft. and a weight of nearly 40 lb. The head is broad and flattened, and the protruding jaws are armed with sharp teeth. In colour it is olive grey above, thickly spotted with a lighter tint, and silvery on the under parts. It has the power of considerably modifying its hue to match its surroundings. It is noted for its great voracity, preying not only on other fish, but upon water fowl, water voles, frogs, and worms. Small specimens are known as jack, and afford good sport. See Angling.



Pike. Specimen of the voracious fresh-water fish



Pig: four British breeds. 1. Large Black sow. 2. Wessex Saddleback sow. 3. Berkshire sow. 4. Lincoln Curly-coated sow. By courtesy of The Farmer and Stockbreeder

having changed, while the straight face of the wild swine has given way to the concave one.

Owing to the demand for pork, bacon and other products of the pig, which are imported in enormous quantities from N. America and Denmark, much attention has been paid of late to the breeding of pigs in Great Britain. Societies were started to improve the breed and to aid the farmer by the use of cooperative methods. The result has been an increase in the number of pigs kept, this having risen from 3,338,000 in 1926 to 4,578,000 in 1928. See Babirusa; Bacon; Pork; Swine Fever.

PIG or **PIG IRON.** Term used for iron run out from the blast furnace and cast in a rough mould. The molten iron is usually directed into a channel about 8 ins. wide formed in a bed of sand; branching off from each side are moulds communicating at one end with the main channel. When filled with the metal these suggest the idea of a sow suckling her young: hence the blocks of metal formed in the moulds are called pigs. See Iron.

PIGEON. Name applied to the various species of birds of the order Columbiformes, which includes the pigeons proper, the doves, and the extinct solitaire and dodo (q.v.). There are about 60 genera included in this order, and the typical pigeons number about 70 species, distributed over nearly the whole world with the exception of the polar regions.

In Great Britain three species of pigeon occur in the wild state, the stock dove, the wood pigeon, and the blue rock pigeon. The

PILATE, Pontius (Lat. Pontius Pilatus) Roman procurator or governor of Judea, A.D. 26-36. His administration was severe and offensive to the Jews, of whom he was contemptuous, but the N.T. narratives of the trial of Jesus before him credit him with a sense of justice and a desire to save Him. Called to Rome to answer charges against him, Pilate is said to have been banished to Gaul, and to have committed suicide. The Copts declare that he died a Christian martyr: the Ethiopic Church regards him as a saint, his day being June 25. His wife, Claudia Procula or Procla (Matt. 27), is honoured by the Greek Church as a saint.

PILATUS. Mountain mass of central Switzerland. Between the cantons of Lucerne and Unterwalden, about 5 m. S. of Lucerne, alt. 6,996 ft., it commands a very extensive view. It was called Mons Pilatus—the capped mountain from its generally cloud-capped summit. There is a mt. rly for tourists.

PILCHARD (*Clupea pilchardus*). Fish of the herring family. Found in the English Channel west of Portland, and off the coasts of Portugal and Spain, there is a smaller race in the Mediterranean. It is about 8-10 ins long at maturity, and may be distinguished from the herring by the larger size and smaller number of the larger scales and by the absence of teeth. Immature pilchards in their first year taken off the W. coast of France and tinned in oil are the true sardines of commerce. Pilchards are taken off the Cornish shore in the late autumn and throughout the winter. The seine net is chiefly used, and the shoals are located by watchers or "huers" stationed on the cliffs, who detect them by the reddish tinge which they give to the water.

PILE DWELLING. Primitive habitation built on piles. In England, pile foundations have been found at Walbrook, London, Barton Mero in Suffolk, and Pickering, Yorkshire. Island strongholds of the fascine type—traceable in Holderness, Yorkshire; at Llangorse, Brecknockshire; and in the Glastonbury lake villages—are numerous in Scotland and Ireland. In Bosnia pile villages were erected along the Danube tributaries during the period from the Neolithic to the early Iron Age.

Pilewort (*Ranunculus ficaria*). Alternative name for the lesser celandine. See Celandine.

PILGRIM (Lat. peregrinus, foreign). One who from religious motives journeys to visit some place considered sacred, as the scenes connected with the life of Christ or the tomb of a saint. Examples are the pilgrimages of the Jews to Jerusalem during great festivals; of the ancient Greeks to the shrines of Apollo at Delphi, Diana at Ephesus, etc.; of the Indian sects to the shrines of Rama and Krishna; of Buddhists to the scenes of Gautama's life; and of Mahomedans to Mecca.

Among Christians the practice was not unusual as early as the close of the second century. Next after the Holy Land, the tombs of the Apostles at Rome became the great centre of pilgrimage. In Great Britain the shrine of S. Thomas Becket at Canterbury, of S. Alban at St. Albans, and of Our Lady of Walsingham were noted centres of pilgrimage, among many others. See Lourdes.

PILGRIMAGE OF GRACE. This was a rising which broke out in Lincolnshire and Yorkshire in 1536, due chiefly to the suppression of the monasteries. The rebels, adopting as their sign the five wounds of Christ, entered York and marched to Doncaster, but were persuaded to return home. The promises made were not kept, and the rising broke out again, whereupon the original leader, Robert Aske, and others were arrested and put to death.

PILGRIM FATHERS, THE. Term applied to the English founders of Plymouth Colony, Massachusetts, in 1620. They belonged to the church founded by John Robinson at Leiden, in Holland. Having obtained a grant of land in New Jersey, they set sail from Plymouth in the Mayflower (q.v.), in all 78 men and 24 women, Sept. 6, 1620. By stress of weather they were forced to land, Dec. 21, on the coast of Massachusetts, far S. of the territory granted to them, and here they founded Plymouth Colony. The tercentenary of their sailing was commemorated on an extensive scale in England, Holland, and the U.S.A. in 1920. There are memorials at Plymouth and elsewhere.

The Pilgrims is a club founded in their honour. Started in 1902, it has two branches, one in London and the other in New York.

PILGRIMS' WAY, THE. Track along which pilgrims travelled through Winchester to Becket's shrine at Canterbury. Of its 120 m. portions are traceable, mainly by way of Alesford, Farnham, Shalford, Albury Park, Wotton, Burford Bridge, Merstham, Titsey, Chevening, Otford, Wrotham, West Malling, Hollingbourne, and Charing. With the exception of some 12 m. between Dartford and Strood, Chaucer's Pilgrims' Way, from London to Canterbury, 56 m., followed the modern Dover Road, touching Deptford, Dartford, Rochester, Chatham, Sittingbourne, Ospringe, and Harbledown. See Becket.

PILLAR. In architecture, an irregular column, i.e. one not constructed in accordance with the proportions of the recognized orders. The term is loosely applied also to any disengaged column that does not act as a structural support, e.g. a vertical monolith, or memorial column, such as Pompey's Pillar, Alexandria. Pillar saints, or Stylites, among whom S. Simeon Stylites is prominent, is a term sometimes used for hermits who made a home on the top of a pillar in the open air. In prehistoric times pillars were erected for worship, as in the Mediterranean basin.

PILLORY. Instrument of punishment. It consisted of a post surmounted by a wooden frame with holes through which the head and hands of the culprit were thrust.

In England, variations of the device were of old institution. After 1637 it became the usual punishment for press offences, such as printing books without licence and libelling the government. In 1816 its use was restricted to punishment for perjury and subordination, perjurers being still liable to have their ears

nailed to the pillory; and in 1837 it was abolished, having last been used, June 22, 1830, for the punishment of Peter James Bossy, convicted of perjury. The pillory was used in Germany, in France as late as 1840, and in the U.S.A. until 1839. See Torture.

PILLWORT OR **PEPPER GRASS** (*Pilularia globulifera*). Perennial herb of the natural order Marsileaceae. It is a native of Europe N. of the Alps. It is one of the water ferns, but has a closer superficial resemblance to a delicate grass than to a fern. Its habitat is the margin of ponds and lakes, and ground that is inundated in winter. The creeping root-stock is a mere thread from which the slender bright green fronds unroll. The spores are produced in rough-coated globular capsules at the base of the fronds.



Pillwort, showing the globular spore capsules.

PILOT. Person who navigates vessels. A licensed pilot is a person taken on board a vessel at any particular place for the purpose of conducting a ship through a river, road, or channel, or from or into a port.

Pilots are licensed and controlled in various British ports by particular statutes and ancient charters of incorporation, as Trinity House, Cinque Port Pilots, and Trinity Houses of Hull and Newcastle, etc. In most cases it is obligatory upon a ship entering a port to take in a pilot, who has sole responsibility while in charge of the ship. The master or mate of a ship may be licensed as a pilot.

The licence of a pilot is issued by the chief officer of customs nearest to where the pilot lives, and the licence carries with it certain restrictions, e.g. a licensed pilot cannot have any interest in licensed premises.

In aeronautics a pilot is one qualified to control an aircraft in flight. There are certain recognized standard tests for pilots of aircraft.

PILOT FISH (*Naucreates ductor*). Marine fish, nearly related to the horse mackerel. It is about



Pilot Fish. Marine fish related to the horse mackerel.

a foot long and of a bluish colour with dark transverse stripes. It is common in the tropic seas and often accompanies ships, whence arose the old notion that it acted as a pilot and indicated the proximity of land. It also frequents the company of sharks.

Pilot Whale. Variant name for the species of dolphin, called (q.v.) whale.

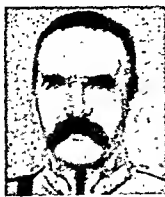
PILSEN OR **PILZEN**. Town of Czechoslovakia. It is 52 m. W.S.W. of Prague at the confluence of the Mies (Mže) and Radbuza, and is an important rly. junction. S. Bartholomew's church has a spire 335 ft. high. The Renaissance town hall dates from the 16th century. The town is famous for its beer. The first printing press in Bohemia was established in Pilsen. Near is the great Skoda (q.v.) industrial works. Pop. 108,023.

PILSUDSKI, JOSEPH (b. 1867). Polish statesman and soldier. Belonging to an old Lithuanian family, he was born March 19, 1867. When a university student he became prominent for his socialist and nationalist opinions, and was sent to Siberia, where he remained for four years. In 1901 he escaped from prison in St. Petersburg and visited Britain and Japan and other countries. He had, however, returned to Poland when the Great War began. At once he raised a legion of Poles, with which he invaded Russia.



Pillory. Daniel Defoe standing in the pillory at Temple Bar. From the picture by E. Crowe.

In 1917 Pilsudski became a member of the council of state set up in Poland, but the same year he was imprisoned in Magdeburg for his hostility to Germany. He was soon released, and in 1919 was elected president of the new republic. He held that post until 1922, when he resigned, and for four years he was in retirement. In 1926 he led a revolt in Warsaw which overthrew the existing administration and was himself appointed prime minister and minister for military affairs. In June, 1928, he resigned the premiership, but he kept his other position, and for practical purposes was dictator of the country. In 1930 he returned to the office of premier and denounced the existing constitution. In 1920 Pilsudski was made a marshal. See Poland.



Joseph Pilsudski.
Polish soldier

PILTDOWN SKULL. Fossil bones of the oldest known European race with distinct human traits. They were discovered by Charles Dawson (d. 1916) in quaternary gravels at Pilt Down, Sussex, from 1912 onwards. See Anthropology; Man.

PIMENTO (Sp. pimienta). Genus of tropical American trees belonging to the order Myrtaceae. They bear cymes of small flowers and coriaceous leaves. The chief species are *Pimenta officinalis*, the pimento bush, and *P. acris*, the wild clove or black cinnamon tree. The chief use of pimento is as a spice. The oil is used in medicine in the same way as cloves, and in perfumery. The bay-rum toilet requisite is sometimes scented with *P. acris*. See Allspice; Cinnamon; Pepper.

PIMLICO. District of London. It lies between the Thames, E. and S., Chelsea, W., and Belgravia and Victoria Street, Westminster. N. Pimlico Road links the Royal Hospital Road with Buckingham Palace Road. It is said to derive its name from a house of popular resort resembling one of the same name at Hoxton, called after its Italian proprietor. Hoxton still has a Pimlico Walk. Victoria Station is in the district, which is in the city of Westminster.

Pimpernel.
Leaves and flowers

PIMPERNEL (Med. Lat. *pipinella*) or POOR MAN'S WEATHERGLASS (*Anagallis arvensis*). Annual herb of the natural order Primulaceae. It is a native of Europe, Asia, and N. Africa. The slender square stem mostly lies along the ground, the branches more erect. The opposite, stalkless leaves are oval or lance-shaped. The bright scarlet flowers open only in the earlier part of the day and in clear weather. The fruit is a globular capsule containing many three-sided seeds. A variety has the flowers bright blue.

PINCHBECK. Variety of brass. It was named after Christopher Pinchbeck (d. 1732), a London clockmaker, who is said to have discovered it, although there is no contemporary mention of the fact. His son, another Christopher Pinchbeck (d. 1783), was also a clockmaker who had a number of mechanical inventions to his credit.

The best pinchbeck is obtained by an alloy of copper 89 p.c. and zinc 11 p.c. to 93 copper and 7 zinc. Pinchbeck was at one time largely used for the manufacture of cheap jewelry and watch cases, but what are known as gold-filled products have largely superseded it.

PINDAR (c. 522-443 B.C.). Greek lyric poet. He was born of a noble Dorian family, near Thebes. The traditions of the family were musical, and Pindar is believed to have excelled in flute playing. His first poetical composition was a choral ode, written at the age of 20 in celebration of the victory of a Thessalian youth at the Pythian games. He rose rapidly to fame, receiving commissions to write choral songs for special occasions from all parts of the Greek world, from democracies such as Athens and from tyrants such as Hiero of Syracuse in Sicily. He came to be regarded as the great national lyric poet of Greece, and after his death his memory was held in the utmost veneration. His Odes are divided into four books according as the victories celebrated were at the Olympian, Pythian, Nemean, or Isthmian games. Nearly all his other work is lost.

PINDAR, PETER. Pseudonym of John Wolcott (1738-1819). British satirist. He was born at Dodbrooke, in Devonshire, and, having qualified in medicine, went to Jamaica and became physician-general of the island. Returning to England in 1773, he set up in practice in Cornwall, where his ideas of treatment scandalised his orthodox medical brethren. In 1781 he settled in London, where his satires and lampoons, witty but brutal and sometimes profane, on the Royal Academy, on royalty, and on other subjects, brought him great fame. Wolcott died Jan. 14, 1819.

Pinus. Mt. range of N.W. Greece. Once the boundary between Epirus and Thessaly, it is the continuation S. of the Albanian Mts.

PINE (*Pinus*). Genus of about 70 species of large evergreen trees of the natural order Coniferae, natives chiefly of the N. temperate regions and the mountains of the N. tropics. The branches form whorls, each whorl marking a season's growth. The lower branches are killed off by the upper ones depriving them of light. The evergreen leaves are needle-shaped, produced in clusters of two to five. The flowers are simple, without sepals or petals, male and female on separate branches. For the production of the valuable soft timber (deal) pines are grown crowded together, in order to discourage branch growth and increase the length and girth of the trunk.

The Scotch pine (*P. sylvestris*) of Europe and N. Asia is the only British species. It reproduces itself by self-sown seed on heaths and wastes, however poor the soil. Its growth in Britain is more rapid than in Scandinavia, and as a consequence the timber is coarse-grained and less durable than that imported from the Baltic region. It abounds



Pine. Left, Scotch pine. Right, top, young cone of cluster pine; bottom, cones of Scotch pine

in turpentine, and yields tar, pitch, and resin. Other species of pine introduced and commonly grown in Britain include the Corsican *P. (P. laricio)* from Central and S. Europe, the Cluster *P. (P. pinaster)* from the Mediterranean region, and the Weymouth *P. (P. strobus)* from N. America. Pine timber is always in demand for joists, flooring, etc.

PINEAPPLE (*Ananas sativus*) Perennial herb of the natural order Bromeliaceae. It is a native of S. America. The berries succeeding the flowers grow together into a juicy compound fruit, the pineapple. The plant was introduced to Europe in the 17th century, and grown in stove houses, where fine fruit was often produced; but its extensive field cultivation in the W. Indies and the Azores supplied the markets with an abundance of excellent fruit, which has led to the gradual abandonment of stove cultivation.



Pineapple. Fruit arising from leaf cluster

PINENE. Hydrocarbon of the terpene group. It is the chief constituent of oils distilled from resinous excretions of pine trees, as turpentine. Pinene is a colourless liquid, which on keeping becomes resinified through the absorption of oxygen from the air. When hydrochloric acid gas is passed into pinene, the hydrochloride, artificial camphor, is formed.

PINERO, SIR ARTHUR WING (b. 1855). British dramatist. Born in London, May 24, 1855, the son of a solicitor, he was an actor from 1874 until 1881, when he took to writing for the stage. After some preliminary success, notably with *The Squire*, 1881, and *The Magistrate*, 1885, he produced a series of brilliant comedies at the Court Theatre, 1885-93, a charming comedy of sentiment, *Sweet Lavender*, 1888, and the dramatic play, *The Profligate*, 1889. He secured his place as the foremost living British dramatist with *The Second Mrs. Tanqueray*, 1893. Later plays include *Trelawney of the Wells*, 1898; *The Gay Lord Quex*, 1899; *His House in Order*, 1906; *The Enchanted Cottage*, 1922; *A Private Room*, 1928. He was knighted in 1909. Pron. Pin-ay-ro.



Sir Arthur Pinero.
British dramatist

Ping Pong. Name used sometimes for the game known as table tennis (q.v.)

PING-YANG. Town and open port of Korea. It stands on the Ta-tong or Tai-dong, about 35 m. from its embouchure into Korea Bay, and is connected by rly with Chinnampo, its outpost. It carries on an active foreign trade. Pop. 175,500.

PINK (*Dianthus plumarius*). Tufted perennial herb of the natural order Caryophyllaceae. It was introduced into Britain in 1629. It has slender, rounded, branching stems, 1 ft. high, swollen where the grass-like, glaucous leaves are given off in pairs. The rose-purple fragrant flowers have fringed petals. Under cultivation it has given rise to many varieties, single and double, pure white, or variously spotted and variegated, which are classed as show or laced pinks, and border pinks.



Pink. Flower of the fragrant garden plant

PINKERTON; ALLAN (1819-84). American detective. Born in Glasgow, Aug. 25, 1819, he emigrated to America in 1842, and opened a detective agency in Chicago. In 1861 he was appointed to guard President Lincoln, and in the same year he inaugurated the Federal Secret Service. He organized a band of men to protect employers against strike riots, and took a leading part in suppressing the Molly Maguires. He died July 1, 1884.

His agency was responsible for the solution of many sensational criminal cases, and flourished under his sons, Robert and William. A noted member of the firm, Allan Pinkerton, grandson of the founder, died Oct. 8, 1930.

PINK EYE. Term for horse influenza, first used in America. The first symptom of the disease is a red and swollen condition of the membranes of the eye. See Horse

PINKIE, BATTLE OF. Fought Sept. 10, 1547, between the English and the Scots. An English army about 16,000 strong, and led by the duke of Somerset, invaded Scotland, and met a Scottish army, about 23,000 strong, drawn up behind the Esk, at Pinkie, near Musselburgh. It resulted in a complete victory for the English, 6,000 Scots being killed.

PINK ROOT (*Spigelia marilandica*). Perennial herb of the natural order Loganiaceae. A native of N. America, the opposite, oval lance-shaped leaves are stalkless. The leaves and roots yield spigeline, which is a powerful worm medicine.

PINNACE. One of a warship's boats. It may be propelled by oars, sail, steam, or motor. Most pinnaces are motor-driven. When oars alone are used, a pinnace is generally eight-oared and double-banked. The term applies to a light sailing-boat, frequently schooner-rigged, used as a tender to a much larger vessel. Sailing pinnaces often relied upon oars as a means of propulsion when the wind fell.

PINNER. District of Middlesex. It is 13 m. N.W. of London, on the Pin, a feeder of the Colne, and is served by the L.M.S., L.N.E., and Met. Railways. The cruciform church of S. John the Baptist has a fine Perpendicular tower. The Queen's Head inn dates from 1705. Here are the Commercial Travellers' Schools, which were opened in 1855. At Headstone was a residence of the archbishops of Canterbury. Pop. 9,462.

PINT. Measure of capacity. The English pint is both a liquid and a dry measure, is the eighth part of an imperial gallon, and contains 34.65925 cubic inches. The pint is subdivided into four gills, and two pints make a quart. The Scottish pint contains a little over three imperial pints, and the U.S.A. standard pint 28.875 cubic inches. In medicine a pint is equivalent to twenty fluid ounces.

PINTAIL DUCK (*Dasila acuta*). Wild duck, widely distributed over the N. hemisphere and a winter migrant to British shores. It breeds in Scotland and the islands adjacent. Locally known as the sea-pheasant, it is easily

PINXTON. Market town of Derbyshire. It is 6 m. from Mansfield, and is served by the L.M.S. and L.N.E. Rlys. Lace is made, and there are large coal mines in the neighbourhood. Market day, Fri. Pop. 5,348.

PIOZZI, HESTER LYNCH (1741-1821). British authoress, friend of Dr. Johnson. She was born at Bodvel, Carnarvonshire, Jan. 16,



Mrs. Piozzi,
British writer

1741, the daughter of John Salusbury. In 1763 she married Henry Thrale, the brewer. They made their home at Streatham Park, near London, where the long friendship with Dr. Johnson began. Thrale died in 1781. A friendship, formed in 1780, with Gabriel Piozzi, an Italian musician, ripened into a passionate attachment, and after much altercation with her children, Mrs. Thrale was married to him in July, 1784. She died May 2, 1821.

PIPE. Tubular channel for the conveyance of gases, liquids, and, under some conditions, solids. Earthenware, concrete, cast-iron, and cast-steel pipes are made in moulds; and the first are hardened by being fired in kilns. Glass tubes are drawn out of cylinders. Lead and composition tubes are extruded through a die by pressure. Seamless pipes of wrought iron, copper, brass, and various alloys are drawn through dies of decreasing external diameter.

A pipe line is a stretch of pipes used for the conveyance of fluids. Although steam, gas, air, and water mains may be said to constitute pipe

lines, the term is more particularly applied to long stretches of piping in which oil or water is conveyed from a source of supply to a storage reservoir.

TOBACCO PIPE. Introduced into England about 1586, the making of pipes from clay became a recognized industry in London about 1620.

Later, pipes for smoking were made of wood, chiefly the wood of the heath. As this was also called the briar, these pipes became known as briar pipes, or briars. Pipes were also made of fine porcelain. Other materials used were meerschaum, bauboo, ivory, cane, horn and glass. In 1928 it was decided that briar pipes imported into Great Britain must be marked to show the country of their origin. Pipes used by primitive men have been found in the Mississippi valley. They were used by the American Indians, one form being the calumet. See Calumet; Hookah.

PIPE. In music, a general name for wind instruments, more particularly those of the whistle or flute family, and thence by analogy the sound of the song of birds. It is also the medium by which sound is produced in the organ (q.v.).

The pipe and tabor are two instruments formerly used to accompany morris dancing and known popularly as whistle and dub. The pipe was a kind of small recorder, but with

only three holes, two at the front for the first and second fingers, and one at the back for the thumb. The player held it in his left hand, from the wrist of which hung the tabor, a small shallow drum a foot or so across, which was beaten with a stick in his right hand. See Morris Dance.

PIPE. Measure of liquid capacity. It varies according to the locality, and the liquid that is measured. The ordinary pipe is two hogheads, equivalent to 108 imperial gallons, or 126 wine gallons. Two pipes form a tun. A pipe of Madeira contains 92 gallons; of sherry 108; and port wine 115.

PIPE FISH. Popular name for a group of long, slender fishes constituting several genera of the family Syngnathidae. The gills take the form of paired tufts upon the branchial arches, and the gill-cover is a large, fixed, bony plate with only a small aperture to admit water to the gills. In most cases the males are provided with pouches in which they carry the eggs until hatched. They live among seaweeds in shallow water.



Pipit. *Anthus petrosus*, the rock pipit of Britain

PIPIT (*Anthus*). Genus of small passerine birds, related to the wagtails. Great Britain possesses four species. The meadow pipit, the commonest, is to be seen almost everywhere in the country. The tree pipit is migratory, arriving in April and leaving in Sept. In appearance it is difficult to distinguish from the meadow pipit. The rock pipit is the

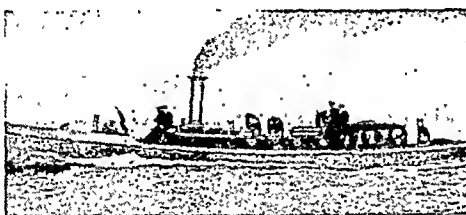
only British song-bird that lives among the rocks on the coast, where it feeds on small crustaceans and worms. The water pipit, Richard's pipit, and the tawny pipit are only occasional visitors to the S. of England. The pipits are often mistaken for larks, to which they are very similar, and are locally known as larks, e.g. the tree pipit is called the woodlark in Scotland and the meadow pipit generally is the titlark.

PIQUET. Card game known in England in the 16th century as la rousle and subsequently in the time of Charles I as piquet. It is played by two persons with 32 cards, the six down to the deuce inclusive of each suite being discarded from the ordinary pack. The cards rank from ace, king, queen, knave, ten, etc.; the ace counts the highest both in cutting and play, and there are no trumps.

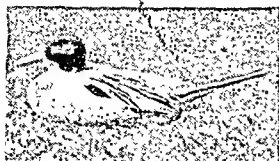
PIRACY (Gr. *peirátēs*, an adventurer who makes attacks on ships). The offence, by common law, of committing these acts of robbery and depredation upon the high seas

which, if they had been committed upon land, would amount to felony. By statute it includes some other offences. Thus, any natural-born British subject who commits any act of hostility upon the high seas against other British subjects under colour of a commission from a foreign power, or who, in time of war, does so or assists an enemy at sea, is liable to be convicted as a pirate; so, too, is any commander or seaman who betrays his trust and runs away with any ship, ammunition, ordnance, or goods, or yields them up voluntarily to a pirate. The punishment may be penal servitude for life.

Piracy, as we see from the poems of Homer was regarded as an honourable calling among the Greeks. The Romans had to deal with pirates in the Mediterranean, where they



Pinnace. Steam pinnace used in the British navy
Cribb, Southsea



Pintail Duck. A winter migrant to Britain

W. S. Betridge, F.Z.S.

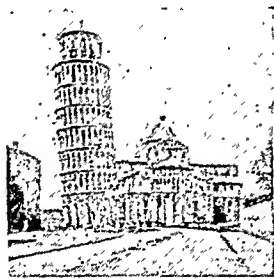
were again notorious until about 1820. See *Buccaneer*; Kidd, W.; consult also *The Pirate's Who's Who*, 1924, Philip Gosse.

PIRAEUS. Seaport of Greece, the port of Athens. Situated on the Saronic Gulf, 6 m. S.W. of Athens, it owed its foundation to Themistocles and Pericles. It was destroyed by Sulla, 86 B.C., and was not rebuilt until after the establishment of the modern kingdom of Greece. Formerly connected with Athens by the well-known "Long Walls," it now has railway communication. In 1929 a scheme was set on foot to modernize it. Pop. 217,793. See Athens. Pron. Py-ree-us.

PIRANDELLO, LUIGI (h. 1867). Italian writer. Born in Sicily, Jan. 28, 1867, he was educated in Rome and Germany. He became a teacher, and wrote some verse which was followed by a novel and a number of short stories. After other novels, including a striking one, *Il fu Mattia Pascal*, he turned to the drama, and in 1913 his first play was produced in Milan. From then onwards he wrote a succession of plays on which his reputation rests, and which have been translated into many languages. His main theme is the power and prevalence of illusion as the dominant factor in all lives. Although our real life is that of the ideas that come from the subconscious mind, we live in an atmosphere of illusions, quite ignorant of truth and reality. In 1930 Pirandello settled in the United States.

PISA (Lat. Pisae). City of Italy. It stands on the Arno, 7 m. from the Ligurian Sea and 50 m. by rly. W. of Florence. The cathedral, dating from 1063, is of white marble with an elliptical dome and an arcaded façade. The baptistery, 1153-1278 (see illus. p. 192) has a fine pulpit by Niccolò Pisano. The campanile, or Leaning Tower, was over 16 ft. out of the perpendicular in 1928, when a British

firm secured a contract for strengthening it. Among other interesting churches are S. Maria della Spina (1325-29), the basilica of S. Michele and S. Paolo and S. Niccolò. The city has a university. Pop. 77,105. See Baptistery; Campo Santo; Pulpit.



Pisa. The Leaning Tower or Campanile, and, beyond, the cathedral

The Council of Pisa was a Church council held in 1409 to settle the great schism occasioned by the residence of the popes at Avignon. The schismatics refused to recognize its authority, and the schism, lasted another 30 years.

PISANO, ANDREA (c. 1270-1349). Italian architect and sculptor. Born at Pontedera, he constructed a good part of the fortifications of Florence. His greatest achievement, however, was the decoration in relief of one set of bronze doors in the baptistery at Florence, the other set being executed by Ghiberti. He worked also at Venice, and died at Orvieto.

Another Italian sculptor of this name was Niccolò Pisano (c. 1206-78), whose best known works are the sculptured pulpit of the baptistery of Pisa, 1260, and that of Siena cathedral, 1268. His son Giovanni (c. 1250-1330) was also a sculptor and architect, one extant work being the tomb of Benedict XI in the church of S. Domenico at Perugia, which he built in 1304.

PISCES. In astronomy, the twelfth constellation of the Zodiac. It contains no bright stars. Alpha Piscium is a variable double star of the fourth magnitude, while zeta and eta Piscium are triple. See Constellation; Zodiac.

PISCINA (Lat. a fishpond, cistern) In ecclesial architecture, a bowl for water recessed in a niche, in which the priest could wash his hands or the sacred vessels after the service. Its place was generally in the sanctuary wall, south of the altar. The piscina and its architectural setting were often very elaborately decorated.



Piscina in the chapel of S. Mary Magdalene, Ereter cathedral

later came under Manet's influence and was one of the first Impressionists of 1874. Later, he launched and led the Pointillist painters. He virtually confined himself to landscapes, producing beautiful views of Paris, where he died Oct. 12, 1903.

His son, Lucien Pissarro (h. 1863), became an exponent of the Pointillist method of impressionism, exhibiting many landscapes both in Paris and in London.

PISTACHIO NUT (*Pistacia vera*). Small tree of the order Anacardiaceae, native of W. Asia. The leaves are divided into three or five oval leaflets, and the small brownish-green flowers are without petals. The oval fruits contain a single green, oily seed enclosed in a hony shell. They are eaten dry like almonds, or made into confectionery. The tree produces galls used in dyeing and tanning.

PISTIL (Lat. pistillum, a pestle). Botanical term for the female organs in a flower, including the ovary, the style, and the stigma. The ovary, containing the ovules or seed-eggs, develops after fertilisation into the seed vessel. The style is often absent, when the stigma is seated directly upon the ovary. The stigma may be thread-like (filiform), knobbed (capitate), lobed, etc.; and is either sticky, rough with raised points, or hairy, to retain the grains of pollen. See Flower.

PISTOIA or **PISTOJA**. City of Italy. It stands on the left bank of the Ombrone, 21 m. by rly. N.W. of Florence. The walls date from 1302 and the cathedral from the 12th and 13th centuries. Pistoia, in art history, held rank midway between Florence and Pisa; its early sculpture is especially remarkable. Pop. 75,988. Pron. Pistō-ya.

PISTOL (Fr. pistolet, originally a dagger, made at Pistoia). Firearm capable of being used from one hand. Pistols were invented about 1500. In 1515 the wheel-lock was invented, retaining its position until about 1825, in spite of the invention of the flint-lock about 1630. Pistols, with a half-inch bore, became duelling weapons in 1780. The percussion cap came into use about 1815, and by 1830 had displaced all other types of ignition. By this time the weapons were practically all rifled.

To-day the automatic pistol seems likely to displace the revolver. This is an adoption of the machine-gun principle in which the recoil of the weapon actuates mechanism which ejects the empty shell, cocks the pistol, and reloads the chamber from the magazine ready for the next shot. The first weapon of this type was made by Borchardt in 1893. In 1894 one was constructed by Bergmann, and this is the ancestor of the small flat pocket pistol of to-day. See Blunderbuss; Revolver.

PISTOLE. French name of an obsolete Spanish gold coin in use from the 16th century. A double escudo, it was worth about 17s. The word was generally applied to similar gold coins, e.g. the Louis d'or.

PISTON. Sliding body moved by or moving against fluid pressure. It usually consists of a short cylinder fitting within a cylindrical vessel along which it moves to and fro. Pistons used in steam and internal combustion engines make an easy running fit with the cylinder, and are provided with elastic rings, fitting in external grooves, which press outwards against the cylinder and prevent leakage past the pistons. The trunk piston, used in most gas and oil engines for

open-ended cylinders, is longer than its diameter, so as to be stable under the oblique pressure of the connecting-rod attached directly to it. In force pumps a solid plunger is often employed instead of a piston. See Hydraulics; Internal Combustion Engine.



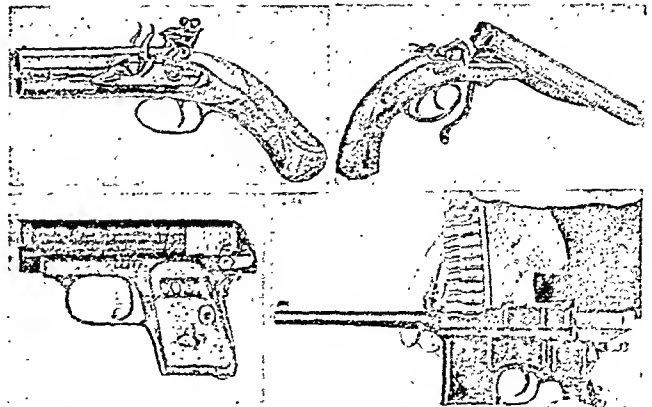
Pistachio Nut. Spray with leaves and nuts

Motor Car; Motor Cycle; Pump.

In music a piston is a valve applied to wind instruments for the purpose of obtaining a complete chromatic scale.

PITA (Span. aloé). Fibre from the American aloé, *Agave americana*, and other species of agave, which grow in all parts of tropical America. The fibre is tough, and is used for making twine, matting, netting, and paper. *A. rigida*, var. *sisalana*, gives the best fibre for ships' cables. The name pita is also sometimes given to the cariacus, a S. American decr.

PITCAIRN. Island in the Pacific Ocean. It is roughly midway between Auckland, New Zealand, and Lima, in Peru. It produces bananas, oranges, yams, coffee, maize, sugar cane, and other plants. Discovered in 1767, it



Pistol. 1. Double pistol with single trigger actuating two hammers. 2. Double grip saddle pistol, with cartridge ejector. 3. Colt hammerless automatic, with six-shot magazine. 4. Mauser automatic, and method of inserting clip of 10 rounds

takes its name from a midshipman who first sighted it. It is peopled by descendants of the mutineers of H.M.S. *Bounty* (q.v.). Great Britain took possession of the island in 1839, and it is under the high commissioner for the W. Pacific. Its area is 2 sq. m. Pop. 174.

PITCH. In music, the precise degree of gravity or acuteness of any musical sound, and depending upon the frequency of vibrations. The greater the number of vibrations per second, the higher the pitch. As commonly employed, the term denotes some standard for a given note, but there is no uniformity in this matter, and the nominal pitch has varied very much in different periods. In 1896 a standard was unofficially adopted in Great Britain of $A=439$ double vibrations per second at 68° Fahr., or 435 at 59° Fahr. This is now generally used by all the principal orchestras, and by the leading pianoforte manufacturers.

PITCH. One of the products of coal tar, or one of the mixtures of hydrocarbons which remain after the distillation of oils and fatty acids. A black, soft to hard substance, according to the temperature, it forms a viscous liquid on heating, and is used for mixing with natural asphalt. See Asphalt. Bitumen: Tar.

PITCHBLLENDE ON URANINITE. In mineralogy, an impure uranium oxide. Dark brown, green to black in colour, it has a very similar appearance to pitch. The mineral is one of the chief sources of uranium and radium, as well as of many of the rarer elements, as thorium, cerium, yttrium, polonium, etc. It was also the first terrestrial source of the gas helium. Pitchblende is found at Joachimsthal in Bohemia, in Hungary, in various parts of N. America, and in Cornwall. See Radium; Uranium.

PITCHER PLANT (*Nepenthes*). Genus and order (*Nepenthaceae*) of shrubs, natives of the E. tropics. They have alternate leaves,



Pitcher Plant, showing hanging pitchers in which insects are entrapped

whose midrib is prolonged and enlarged into a flask- or pitcher-shaped organ with a partly opened lid. The mouth of the pitcher is strengthened by a thick, corrugated rim, which secretes a sweet fluid, whose purpose is to attract insects. These fall into the liquid which partly fills the pitcher and which has digestive properties. The insects thus afford

nourishment for the plant. In the Californian pitcher plant (*Darlingtonia californica*) the leaves take the form of erect trumpet-shaped tubes with a swollen hood at the top, in which is the opening to the pitcher.

PITCH LAKE. Lake of pitch in Trinidad. Near the S.W. coast, close to the village of La Brea, it is of circular shape, a little more than 100 acres in area and about 3 m. in circumference. Always more or less soft in hot weather, the pitch in the middle of the lake is liquid and can be seen bubbling. The yield in 1928 was 195,980 tons.

PITCHSTONE. In geology, name given to a glassy igneous rock, remarkable for the amount of contained water in its composition. It is lustrous, and dark grey-green, brown, or nearly black in colour. The best specimens are found in Arran and near Meissen, Saxony.

PITLOCHRY. Tourist resort of Perthshire, Scotland. On the left bank of the Tummel, on the L.M.S. Rly., 28 miles from

Perth, it has a bracing climate and picturesque mountainous surroundings. It is at the southern end of the Pass of Killicerankie (q.v.), and near are the Falls of Tummel. Pop. 2,241.

PITMAN, SIR ISAAC (1813-97). Inventor of the phonographic system of shorthand known as Pitman's. Born at Trowbridge,



Sir Isaac Pitman, Inventor of system of shorthand

Wiltshire, Jan. 4, 1813, he became a schoolmaster. At Wotton-under-Edge, he taught Taylor's shorthand and published *Stenographic Sound Hand*, 1837.

In 1839 he opened a school at Bath, where he erected a printing press, started *The Phonetic Journal*, later known as *Pitman's Journal*, in 1842, and laid the foundation of the business of Sir Isaac Pitman and Sons. Knighted in 1894, he died Jan. 22, 1897. See Shorthand.

PITT, WILLIAM (1759-1806). British statesman. Younger son of the 1st earl of Chatham (q.v.) he was born at Hayes, Kent.

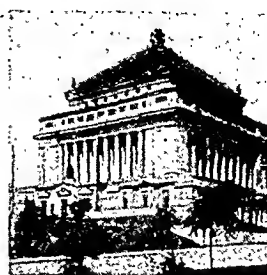
May 28, 1759. He took his degree at Cambridge in 1777, and was called to the bar in 1780. In 1781 he became M.P. for the pocket borough of Appleby, joining the Whigs, led by Shelburne. As an advocate of parliamentary and other reforms he quickly became one of the leading figures in the House. In 1784 Cambridge returned him, and he represented the university until his death. In July, 1782, Pitt entered office as chancellor of the exchequer, but the ministry only survived for nine months. In Dec., 1783, he became prime minister as well as chancellor of the exchequer.

From 1784 to 1792 Pitt's chief aim was to restore to his country the prosperity damaged by the American War, and he made his name as a finance minister. In 1789 the French Revolution opened, and in 1793 Britain entered the struggle. From then Pitt was a war minister. His high courage was specially needed in 1797, when Britain was left to continue the fight alone and the seamen mutinied.

In 1798 the rebellion in Ireland was crushed, and in 1800 came the union of the parliaments of England and Ireland. Pitt's Irish policy was to complete the union by granting civil liberties to the Roman Catholics. Decisive opposition came from the king, and Pitt resigned office in Feb., 1801. In 1804 he returned to office, formed a fresh coalition, and, though the Austrians were beaten at Ulm, the victory of Trafalgar restored the fortunes of the Allies. On the news of Napoleon's victory at Austerlitz he returned from Bath to London, and, already very ill, he died at his house in Putney on Jan. 23, 1806.

PITTENWEEM. Burgh and seaport of Fifeshire, Scotland. It is on the N. shore of the Firth of Forth, 9 m. from St. Andrews, on the L.N.E. Rly. The chief building is the parish church, fishing and fish-curing are industries. Pop. 1,756.

PITTSBURG OR PITTSBURGH. City and port of entry of Pennsylvania, U.S.A. It



Pittsburg, Allegheny County Soldiers' Memorial Hall

Among its many fine public buildings are the Carnegie institute and the Allegheny County soldiers' memorial hall. Pittsburg University is the chief institution for higher education. One of the principal centres in the world for the production of iron and steel goods, Pittsburg has numerous large blast furnaces and rolling mills. It is actively engaged in turning out steel rails and has a variety of other manufactures. Pop. 588,343.

PITYRIASIS (Gr. scurf, from pityron, bran). Name given to several affections of the skin. P. capitis, dandruff or scurf, is a chronic parasitic affection of the scalp characterised by the formation of scales or scurf, leading to atrophy of the hair. With it may be associated P. circinata. Pink spots appear in the middle of the trunk and on the back. These enlarge and clear up in the centre, forming rings, the margins of which become covered with greasy scales. Treatment of P. capitis demands shampooing at regular intervals with a lotion consisting of soft soap and spirit in equal parts with ten grains of thymol to the ounce. For P. circinata an ointment containing sulphur is used.

PIUS. Name of eleven popes, of whom the more important are noticed separately. Pius I, whose pontificate was from about 140 to 154, is venerated as a saint and martyr. Pius II, pope 1458-64, attempted to unite Europe against the Turkish menace, and set out to lead a crusade when he died at Ancona, Aug. 14, 1464. He was a voluminous author. His nephew became Pius III, but was pope for only a few weeks in 1503. Under Pius IV, pope 1559-65, the council of Trent sat for the third time. Pius V, who held office 1566-72, excommunicated Queen Elizabeth.

On the refusal of Pius VI, who was pope 1775-99, to acknowledge in 1791 the civil constitution of the clergy, France annexed the



Pius: four popes of that name. 1. Pius VI, pope 1775-99. 2. Pius VII, pope 1800-23. 3. Pius IX, pope 1846-78. 4. Pius X, pope 1903-14 (see page 1085)

1. after G. Eichler; 2. after Laurence

papal territory at Avignon. He declined to acknowledge the Roman republic, set up in 1798, and died in exile at Valence, Aug. 29, 1799. The great event during the pontificate, 1800-23, of Pius VII was the concordat with Napoleon in 1801. He obtained the restoration of the papal states, and also re-established the Jesuit order. Pius VIII was pope from 1829 to 1830.

PIUS IX (1792-1878). Pope from 1846-78. Born at Sinigaglia, May 13, 1792, he was made archbishop of Spoleto, 1827, created cardinal, 1840, and elected pope on the death of Gregory XVI. He set up a constitution for

the papal states, but a series of riots in Rome ended in his retirement, 1848, and the establishment of a republic. Restored by French troops, 1850, Pius IX saw the annexation of the papal states and of Rome to the kingdom of Italy in 1870; in 1870, too, he convoked the Vatican Council which declared the pope to be infallible. He died Feb. 7, 1878. See portrait, p. 1084.

PIUS X (1835-1914). Pope from 1903-14. Born at Riese, in Venice, his name was Giuseppe Melchiorre Sarto. He was made canon of Treviso, 1875, bishop of Mantua, 1884, and cardinal archbishop of Venice, 1893. On the death of Leo XIII he was elected pope by 55 votes out of 60. The pontificate of Pius X was distinguished for the attention given to increasing the discipline of the church and suppressing modernism. See portrait p. 1084.

PIUS XI (b. 1857). Pope from 1922. He was born May 31, 1857, at Desio, in the prov. of Milan, his name being Achilles Ratti.



Pius XI,
Elected Pope, 1922
Manuel

Ordained in 1879, he was for many years prefect of the Ambrosian library at Milan, and later of the Vatican library. He received cardinal's rank in 1921, and was appointed archbishop of Milan. On the death of Benedict XV he was elected pope, and took the name of Pius XI, Feb. 6, 1922. He was instrumental in re-establishing the temporal power of the papacy in 1929, when the state of the Vatican City was created in Rome. See Vatican.

PIZARRO, FRANCISCO, DON (c. 1475-1541). Conqueror of Peru. He was born at Trujillo, Spain, entered the Spanish military service early, and fought under Gonsalvo de Cordova in Italy. Fired with ambition by the conquest of Mexico, 1520, Pizarro conceived the idea of conquering Peru.

After a preliminary voyage in 1526, Pizarro, with 183 men armed only with muskets, landed in May, 1532, at Tumbez. The crown of the Incas had been seized by Atahualpa, who had deposed the legitimate ruler, Huascar. Pizarro marched inland, captured Atahualpa, and had him executed, setting up another member of the royal family as a puppet emperor. Almagro arrived with reinforcements, and the empire was partitioned, Pizarro taking the northern governorship, while Almagro made himself master of Chile. No effective resistance was offered to the conquerors until an Indian insurrection broke out in 1536. It was crushed by the aid of Almagro, between whom and Pizarro there then arose a contest. Pizarro's brothers defeated and killed Almagro in 1538, but three years later Almagro's followers assassinated Pizarro, on June 26, 1541. See Atahualpa: Lima; Peru.



Francisco Pizarro,
Conqueror of Peru
Engraving by J. Brown
from a painting in the
Viceroy's Palace, Lima

PLACER. Name given to alluvial gravel, in which gold and tin ore deposits occur very frequently. Gold occurs in the metallic form in placers, while tin occurs as cassiterite (tin dioxide). Placers are divided into two classes, superficial and deep-lying. The former are recent, and owe their origin to the action of rivers which may still exist, whilst the latter have been formed by the action of extinct or ancient rivers; in either case the contained mineral is derived from the disintegration of metalliferous veins (primary deposits).

PLAGUE (Lat. *plaga*, stroke). Disease caused by the *bacillus pestis*. It has been known in epidemic form at least from the

6th century. In the 14th century an outbreak known as the Black Death occurred in Europe, and swept away one-fourth of the population. In the Great Plague of London, 1665-66, some 70,000 persons perished. At the present day the regions in which the disease is endemic are Mesopotamia, Northern India, Tibet, and Yunnan in China.

Plague is, in the first instance, a disease of rats, and the infection is conveyed to man solely by the rat flea. The disease may travel from place to place by rat fleas carried in merchandise or on human beings. The bubonic form constitutes some three-quarters of all cases. The initial symptoms are headache, pain in the back, stiffness of limbs and restlessness. The temperature rises and severe prostration occurs. Death may take place at this stage, but in most cases swellings known as buboes appear, affecting the glands of the groin, the axilla, and the neck. Haemorrhages under the skin may also occur.

Prevention of plague is an important necessity in areas liable to be infected. The most essential step is to take energetic measures against rats by their systematic destruction. The risk of acquiring the disease in infected areas has been reduced by means of Haffkine's prophylactic vaccine. See Black Death; Rat.

PLAQUES OF EGYPT. Ten plagues brought upon the Egyptian Pharaoh and his people by Jehovah when the Israelites were in bondage in Egypt (Exod. 7, 14-12). The plagues were turning of the waters of the Nile to blood; swarms of frogs, of gnats, of flies; affliction of cattle with pestilence; of man and beast with boils and blains; havoc by thunder and hail; swarms of locusts; dense darkness; and the death of the first-born of man and beast. See Passover.

PLAICE (*Pleuronectes platessa*). Important food fish of the family *Pleuronectidae*. A native of the Atlantic and North Sea, it is also found rarely in the Mediterranean. Of a long, oval form, the body of the plaice is strongly compressed from side to side, and fringed with the long dorsal and ventral fins. Beginning life as a round fish, like the cod, the young plaice soon takes to lying on the bottom on its left side, and the left eye travels round to the right side. The young flat-fish affects sandy shores in shallow water, going deeper as it gets larger. It is adult when from 2½ to 3 years old. Its food consists of molluscs, sand stars, and marine worms.

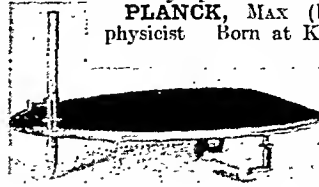
PLAINSONG. System of Gregorian church music. It proceeded by contrapuntal movement in notes of equal length, representing what is now known as the first species of counterpoint. The *Canto fermo*, generally in the tenor part, was the foundation on which the counterpoint was built, though each part was supposed to be of equal interest. The form is still used in Roman Catholic and some Anglican churches.

PLAISTOW. Dist. of London. In the co. of Essex, between West Ham, N., and Canning Town, S., it is 4½ m. from Fenchurch Street station on the L.M.S. and L.N.E. Rlys. It is a crowded industrial suburb, and has many chemical, engineering, and other works. Here is the East London Cemetery. There is another Plaistow, near Sundridge Park, in Kent, and one in Sussex.

PLANCHETTE. Small wooden tablet, standing on three legs. One leg is a pencil and the others terminate in small wheels, the

whole being so contrived that, when placed on a sheet of paper, it moves at the slightest impulse and the pencil makes marks. It is used by spiritualists for recording messages.

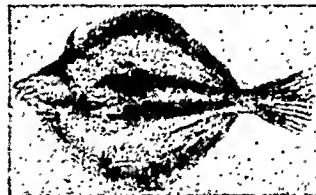
PLANCK, MAX (b. 1858). German physicist. Born at Kiel, April 23, 1858, he



Planchette, the wooden table employed
to automatic writing.

became professor at the university there in 1885, and from 1889 to 1923 held a similar post at Berlin. He was awarded the Nobel prize for physics in 1918. Planck interested himself especially in thermodynamics, and in 1901 stated his hypothesis of radiation, i.e., that the energy of radiation is given out in definite fixed amounts or quanta. Some years later Planck widened his theory to cover all kinds of energy. See Quantum Theory; Radiation; Relativity.

PLANE (*Platanus*). Small genus of large trees of the order *Platanaceae*, natives of the N temperate regions. The large alternate leaves are palmately divided into five or seven toothed and sharply pointed lobes. The flowers are simple, without sepals or petals, and the sexes separate. The fruits are closely packed in spiky balls. A peculiarity of the tree which helps it to thrive in soot-laden atmospheres is its habit of throwing off the outer layers of its bark in large or small, thin flakes, showing yellow patches of newer bark. The Oriental plane (*P. orientalis*) was introduced to England from the Levant at some date



Plaice viewed from above, showing
position of both eyes on upper side

previous to 1548, and the Western plane (*P. occidentalis*) from Virginia about 1640. The maple-leaved plane (*P. acerifolia*) is believed to be a hybrid between the two. The wood of *P. orientalis* is extensively used for carpentry and cabinet work. See illus. below.

PLANET (Gr. *planētēs*, wanderer). Name given to the chief of the solid bodies

that revolve around the sun. The planets are Mercury, Venus, Mars, Earth, Jupiter, Saturn, Uranus, and Neptune. The existence of another planet has been conjectured by astronomers, and in 1914 Lowell predicted the existence of a trans-Neptunian planet of the 12th-13th magnitude. Its discovery was announced in Jan., 1930. Named Pluto (q.v.) its magnitude is computed as 15 to 16.



Plane. Fine specimen of the tree. Inset, fruit of
London plane. See article above

In the solar system the planets are generally divided into two groups, the inferior planets, those between the earth and the sun, and the superior planets, those farther away from the sun than the earth. All planets travel round the sun in an anti-clockwise direction, looking down on the system, and all orbits are elliptical. A machine designed to exhibit the movements of the planets and other bodies of the solar system is called a planetarium.

In astronomical tables, almanacs, etc., symbols are given to the names of various planets and the sun and moon for convenience of tabulation, etc. These symbols are Mercury, ♀; Venus, ♀; Earth, ☿; Mars, ♂; Asteroids, ① ② according to the order of their discovery; Jupiter, ♃; Saturn, ♄; Uranus, ♅; Neptune, ♆. See Asteroid; Astronomy; Earth; Jupiter; Nebula; Neptune; Pluto; Saturn; Solar System; Sun.

PLANKTON (Gr. planktos, wandering). Term used for the drifting or swimming organisms of lakes, rivers, and seas. The plankton of the latter is the basis of oceanic life, and the term was first used by Victor Hensen to indicate those organisms which were at the mercy of every current, their swimming powers being too feeble to make any headway against a flow of water. The colour of certain seas is entirely due to these minute organisms, which include plants as well as animals, and exist in countless myriads.

PLANT (Lat. planta, sucker or shoot). Word usually indicating in its everyday popular use a herb. In the broader botanical sense, however, it covers all vegetable organisms, not only trees, shrubs, and herbs, but the ferns, mosses, liverworts, seaweeds, fungi, and even the minute single-celled organisms that are so like the simplest forms of animal life. The higher plants have distinct parts, as root, stem, leaves, flower, and fruit, all of which are subject to considerable modification, and upon these they are classified into orders, genera, and species.

The root as a rule burrows into the earth and bears no leaves, its functions being to attach the plant, and to provide it with water and mineral salts for food. The stem takes a more or less upward direction above the soil and bears leaves. It may be composed entirely of soft cells and easily crushed by a little pressure, or of hard cells forming a more or less massive enduring trunk. The leaf is normally a thin, flat, green expansion of soft cells which contain the green chlorophyll essential to the nutrition of the plant. Leaves are modified into sepals and petals to protect the reproductive organs and form the flower. The stamens and carpels (pistils) which contain the sexual elements—the pollen and ovules—are also greatly modified leaves.

Plants possess the powers of communicating impressions from one part of the plant body to another by means of protoplasmic threads connecting cell with cell, and of responding to these impressions. They are sensitive to light and touch, and they have a good deal of power of adaptation to their environment. See Botany; Bud; Crescograph; Flower; Grafting; Leaf; Pistil; Root; Stamen, etc.

PLANTAGENET. Name commonly given to the family to which the English kings from Henry II to Richard II belonged. More correctly they are styled Angevins, from Anjou, of which Geoffrey, father of Henry II, was count. In the male line the family became extinct when Edward, earl of Warwick, a nephew of Edward IV, was put to death in 1499. Through females all the sovereigns of Great Britain since Henry VIII are

descended from the Plantagenets. See Angevin; Henry II; Royal Family.

PLANTAIN (*Plantago*). Genus of herbs of the order Plantaginaceae, natives of all temperate regions. They have inconspicuous green flowers, fertilised by the wind as pollen carrier.



Plantain. Leaves and fruit spike of *P. major*

The Greater Plantain (*P. major*), known also as way bread, produces long spikes of fruit, used for feeding cage-birds. *P. media*, lamb's tongue or hoary plantain, is an obnoxious lawn weed, where its rosette of broad leaves lies so close to the ground that it kills out the grass.

PLANTAIN LILY (*Funkia*). Genus of perennial herbs of the order Liliaceae. They are natives of Japan. The perennial organs are a bunch of tubers. The leaves are large, oval or heart-shaped. The flowering stems rise above the leaves and bear a number of tubular flowers of white or lilac tint. Several species are used as hedging or border plants.

PLANTIN, CHRISTOPHE (1514-89). French printer. Born at St. Avertin, near Tours, he settled at Antwerp in 1549 as a bookbinder, took up printing in 1555, and founded a business which won for him a European reputation. The building in Antwerp in which Plantin established his home and printing-office in 1576 is now known as the Plantin-Moretus Museum, having been acquired by the city in 1876. It contains many productions of the Plantin-Moretus and other early presses, valuable books, and MSS.

PLASSEY. Village of Bengal, India, about 95 m. N. of Calcutta. It was here that Clive defeated the nawab of Bengal, Suraj-ud-Dowla, June 23, 1757. Clive advanced on June 13 up the Hooghly. His force consisted of about 1,000 Europeans, 2,100 sepoy, and 10 guns. Suraj commanded some 35,000 foot soldiers, with 18,000 cavalry, and about 50 guns. After a violent bombardment, Clive attacked, and overpowering a strong redoubt, won a complete victory. See Clive; India.

PLATAEA. City of Greece, Cithaeron. Leaving the Theban league, Plataea became an ally of Athens, and sent 1,000 men to the battle of Marathon. In the second Persian War, Xerxes destroyed the city at the instigation of Thebes, 480 B.C. The Persian army fought the allied Greeks under Pausanias of Sparta before Plataea in 479, and was almost annihilated. This victory, following upon that of Salamis, decided the struggle between the East and the West. See Greece.

PLATINUM. Rare metallic element. Its chemical symbol is Pt; atomic weight, 195.23; atomic number 78; specific gravity, 21.5; melting point, 1,775° C.; colour, tin white or steel grey with metallic lustre. The metal is very ductile, and next to gold and silver the most malleable substance known.

It was first recognized in the alluvial gold deposits of Choco and Barbacoas, in Colombia. It has since been found in the Ural Mts., its chief source, in Borneo, the Rhine sands, St. Domingo, Tasmania, New South Wales, N. Carolina, U.S.A., Burma, Japan, Spain, Canada, Brazil, and Sierra Leone. Platinum is mostly found associated or combined with minute proportions of palladium, rhodium, iridium, and osmium.

The metal is used in the manufacture of strong sulphuric acid; in the construction of

electric lamp bulbs; in the preparation of standard weights and measures, crucibles, pyrometers, and other implements for chemical laboratories; in dentistry for the preparation of plates and anchors; in photography, as potassium chloroplatinate, in the platinotype process; and for jewelry.

PLATO (427-347 B.C.). Greek philosopher. Born at Athens, or in the island of Aegina, of distinguished family, Plato spent most of his life in the city of Athens, immersed in the study and the teaching of philosophy. He is known to have travelled widely, and to have been captured and sold as a slave at Aegina. After the trial and execution of Socrates, 399 B.C., he devoted himself to carrying on the mission of his martyred teacher. The record of that mission is set forth in the collection of Dialogues that have come down to us. Of the 35 treatises—many critics reject the Letters—ascribed to Plato, some 24 are probably from his hand.

Plato set himself to understand Hellenic society with the practical object of indicating reforms. In so doing he formulated a system of philosophy based on contemporary experience, designed to set forth the principles of life and conduct exhibited therein. The note of his conclusions everywhere is idealistic, and the whole question of the interpretation of Platonism depends on an understanding of these "ideas." His great dictum is "what is wholly real is wholly knowable, and what is utterly non-existent is completely unknowable." This answers to the modern assertion of "the unity of the intelligible world with itself and the mind that knows it."

In the region of ethics and politics, Plato was the first thinker to offer a satisfying



Plato, Athenian philosopher

account of the principles that form and govern conduct and character. But his morality is far from being intellectual in the sense of abstract. Plato's "justice" is the virtue of the good citizen, and his idea of the good is to be realized in the life of the commonwealth. He shows in the Republic that it is in the larger life of the justly organized state or

society that the good life of the individual finds expression. Here is the embodiment, the actuality, even if imperfectly attained, of the idea of the good, which for Plato solves the riddle of the universe. See Aristotle.

PLATOON (Fr. peloton, group of people). In the British army, a division of an infantry company. A battalion is divided into sixteen platoons, four platoons forming a company. Each platoon is under the command of a subaltern and has a strength of about 60 men.

Platypus. Name sometimes used for the duck bill (*Ornithorhynchus anatinus*). See Duck Bill.

PLAUEN. Town of Saxony, Germany. It stands on a plateau on the right bank of the White Elster, 60 m. from Leipzig, and is a rly. junction. The buildings include the old castle, the town hall, and St. John's church. The principal industries of the town are the manufacture of lace and embroideries, and there are textile works. Pop. 111,436.

PLAUTUS, *Titus Maccius* (c. 251-184 B.C.). Roman writer of comedies. In his spare time he wrote comedies, which proved so successful that he devoted the rest of his life to playwriting. Of the 130 comedies with which he was credited in antiquity only 21 have been preserved; they are adaptations from Demophilus, Diphilus, Menander, and



Plantagenet badge, a sprig of broom

Philemon The pungent wit, the rapidity of the action, and the shrewd knowledge of human nature displayed, have made the comedies of Plautus popular down to modern times.

PLAYER PIANO. Strictly speaking, a piano fitted with a player, sometimes called a piano player. The "notation" or music consists of perforated paper which passes over a tracker-bar in which are 88 holes, each corresponding to a particular note. The bellows act on the suction principle, the notes of the piano being actuated by the air which is drawn in when the holes in the perforated roll coincide with those in the tracker-bar. By means of levers the speed and the soft and the sustaining pedals can be controlled, and expression and special melodic effects secured. The latest development is to switch on certain mechanism whereby rolls can be manipulated, reproducing the individual performances of great artists.

PLAYFAIR, LYON PLAYFAIR, 1ST BARON (1818-98). British chemist and politician. Born at Chunar, Bengal, May 21, 1818. he became in 1842 professor of chemistry at the Royal Institution, Manchester. He was appointed chemist to the Geological Survey, 1845, and professor at the School of Mines, and carried out at this time a series of important investigations into nitro-prussides, coals for steam navigation, the gases of the blast furnace, etc. He became professor of chemistry at Edinburgh in 1858. He was M.P. for Edinburgh and St. Andrews Universities, 1868-85, for South Leeds, 1885-92. Made a peer in 1892, Playfair died May 29, 1898.

PLEADINGS. In English law, the documents in which the plaintiff and defendant respectively state their cases. Under the present system the plaintiff must first set out the facts on which he relies in a statement of claim. The defendant answers in a defence, in which he either admits or denies each or any of the plaintiff's allegations, and sets out also any affirmative facts on which he relies.

PLEASLEY. Village of Derbyshire and Nottinghamshire. It stands on the river Meiden, 3 m. from Mansfield, on the L.N.E. and L.M.S. Rlys. At Pleasley Vale are factories for making silk and cotton material, and around are coal mines. Pop. 2,510.

PLEBEIAN. Name given to the common people (plebs) of ancient Rome, as opposed to the ruling order of patricians. They were originally the subject peoples, resident aliens, and even fugitive slaves; but as time went on and many attained to wealth and influence, they demanded some share of the political power. In 494 B.C. the plebeians gained the right of electing special magistrates called tribunes; in 451 the Decemvirate was created to codify the laws and equalise them as between the two orders. The republican magistracies were successively thrown open to them. See Rome.

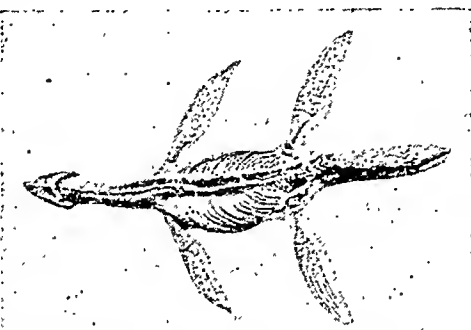
PLEBISCITE (Lat. plebs, people: scitum, decree). Term originally applied to a law passed by the Roman people assembled in the comitia tributa, i.e. by tribes. Such laws, originally binding only on the plebeians, or commons, were subsequently extended to the whole of the body politic. In modern Europe a plebiscite is a popular vote on a clearly defined political or national issue involving the answer yes or no.

PLEIADES. In Greek mythology, the seven daughters of Atlas and Pleione, and companions of Artemis. When pursued by Orion they prayed to be turned into doves. Their prayer was granted, and they were placed among the stars.

In astronomy, the Pleiades form a group of conspicuous stars marking the shoulder of the constellation of Taurus. To the eye six stars only are usually visible, but in the telescope over 2,000 can be seen.

PLEISTOCENE (Gr. pleistos, most; kainos, new). In geology, name given to the period of time between the end of the Tertiary and the beginning of history. The period is also known as Post-Tertiary, Glacial, and Ice Age.

PLESIOSAURUS (Gr. plēsiōs, near; sauros, lizard). Extinct marine reptile found as fossil remains in Liassic rocks. Members of the order Sauropterygia, they had thick lizard-like bodies, strong tails as long as the body, and powerful paddles for swimming. The length of the animal varied from 10 to



Plesiosaurus. Fossil skeleton of the extinct marine reptile Victoria and Albert Museum, S. Kensington

over 40 ft. The jaws of the relatively small head were armed with powerful teeth. In 1928 the skeleton of one of these reptiles was unearthed at Harbury in Warwickshire. It is now in the S Kensington Museum. See Dinosaur; Lizard.

PLEURISY. Inflammation of the pleura or serous membrane of the lung. Two forms are recognized—dry pleurisy and pleurisy with effusion. Dry or fibrinous pleurisy may follow exposure to cold, or may occur in the course of pneumonia and other diseases of the lung. Pleurisy with effusion is much the commoner condition. The disease most often follows exposure to cold or a wetting. The onset is usually abrupt, with severe pain in the side and rise of temperature. The breathing becomes difficult, particularly in cases where there has been a rapid effusion of fluid into the pleural cavity. In mild cases the symptoms subside after a week or ten days. See Aspirator.

PLEURODYNIA. Painful affection of the intercostal muscles on one side of the body. Due to inflammation of the fibrous tissue surrounding the muscles, it may be brought on by exposure to cold or wet. Treatment of the affection consists in resting the muscles by strapping the chest so as to restrict the breathing movements.

PLEVNA OR **PLEVEN.** Town of Bulgaria, about 90 m. N.E. of Sofia. Pop. 28,775. It is famous as the scene of a siege in the Russo-Turkish War, 1877-78. After a brief bombardment, the Russians launched an attack, which was repulsed by the Turks with heavy losses, July 20, 1877. Five weeks later a second attempt was defeated. The Russians then collected 100,000 men and over 400 guns and gave battle, Sept. 6-7, but the Turks, under Osman Pasha, succeeded in repulsing them. The siege was continued, however, and on Dec. 9 starvation forced Osman to surrender the fortress.

PLIMSOLL, SAMUEL (1824-98). British politician. Born in Bristol, Feb. 10, 1824, he became a clerk in Sheffield. In 1853 he settled in London. He had already given much attention to the loss of life at sea caused by unseaworthy ships being sent out, and his entry into the House of Commons as Radical M.P. for Derby, in 1868, gave him opportunity to

draw attention to the subject. He resigned his seat in 1880, and spent the rest of his life in attempts to improve the condition of seamen. He died at Folkestone, June 3, 1898.



Samuel Plimsoll, British politician

PLINY (A.D. 23-79). Roman soldier and writer, whose full name was Gaius Plinius Secundus. He was called Pliny the Elder to distinguish him from his nephew. In 67 he was appointed procurator in Spain. His last official post was that of commander of the fleet at Misenum, when he met his death at the eruption of Vesuvius. In addition to other works he was the author of an encyclopedic work entitled Natural History (in the widest sense) in 37 books, in the compilation of which he read more than 2,000 volumes. The work deals with anthropology, zoology, botany, mineralogy, painting, sculpture, etc.

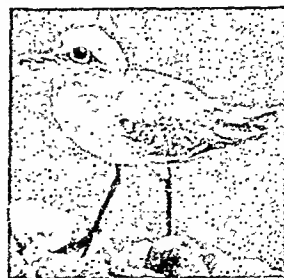
PLINY (A.D. 61-c. 113) Roman writer, whose full name was Gaius Plinius Cæcilius Secundus. He was called the Younger to distinguish him from his uncle. Born at Novum Comum (Como), he was adopted by his uncle, from whom he received an excellent education. Beginning as a pleader in the law courts, he had a successful public career.

His correspondence is of peculiar interest, but the Letters, which were published in nine books, suffer from the fact that they were obviously written for publication.

PLIOCENE (Gr. pleion, more; kainos, new). In geology, name given to the uppermost division of the Tertiary system. Pliocene deposits are chiefly found in Europe, especially in France, Spain, Italy, Greece, and on a smaller scale in England, Belgium, etc. The pliocene deposits, the accumulations of shallow seas, and the estuaries of large rivers, are rich in fossils, particularly of mollusca, extinct fishes, reptiles, amphibians, and birds.

PLOEGSTEERT. Village and wood of Belgium, in W. Flanders. The former is 8 m. S. of Ypres and 3 m. N. of Armentières. Both village and its adjacent wood figured prominently in the British operations in the Great War in the Ypres salient. After changing hands several times in 1914 they were for the next three years in the British front line. Captured by the Germans in 1918, they were finally retaken by the Allies in Sept. of that year. They were known to the British troops as Plug Street. See Ypres.

PLOVER. Name given to a large family of shore birds, including the plovers proper, stilts, oyster-catchers, curlews, sandpipers, godwits, snipe, and others. The golden plover (*Charadrius pluvialis*) has greyish-black plumage spotted with yellow on the upper parts and black below, and is about 11 ins. long.



Plover. Hen of the Kentish plover, *Aegialitis cantiana*

It breeds in many localities in the N., nesting on the ground. The Kentish plover (*Aegialitis cantiana*) is small and pale in colour, with black and white head, and occurs in summer along the

coasts from Sussex to Yorkshire. The ringed plover (*Aegialitis hiaticula*) is distinguished by its black and white collar. The green plover is better known as the peewit or lapwing. See Dotterel; Lapwing

PLUM (*Prunus*) Fruit-bearing trees of the order Rosaceae. The genus includes the damson, greengage, and sloe. The ordinary plum (*Prunus domestica*), though found wild, is not a native of Britain; it usually forms the stock upon which are grafted the choicer varieties, of which there are now in cultivation close upon two hundred. The plum flourishes in a fairly light soil, with a mixture of lime for preference. It is propagated by grafting in springtime. An alternative method is by layering in autumn. See Damson; Greengage



Plum. Victoria plum, the best all-round variety

PLUMBAGO (*Plumbago capensis*). Climbing or trailing shrub of the order Plumbaginaceae, native of S. Africa. It has alternate, oblong leaves, and short spikes of pale blue, salver-shaped flowers. *P. rosea*, from the East Indies, has an erect stem, branching above, and long spikes of rosy-scarlet flowers.



Plumbago
Flowers of *P. capensis*

Plumbago. Alternative name for the mineral form of carbon more commonly known as graphite (q.v.). See Lead.

PLUMER, HERBERT CHARLES ONSLOW PLUMER, 1st Viscount (b. 1857). British soldier. Born March 13, 1857, a son of Hall Plumer of Torquay, he entered the army in 1876, and served with it in the Sudan in 1884. He came into the public eye by raising and commanding a mounted force during the rising of the Matabele in 1896. He served in the S. African War, 1899-1902. From 1902-14 Plumer was constantly employed, becoming quartermaster-general and a member of the army council, while in 1911-14 he was in charge of the northern district. In 1906 he was knighted. In Jan., 1915, Plumer was sent to take command of the 5th army corps, and in the following May was appointed to the 2nd army. From Nov., 1917, to March, 1918, he was in charge of the British force in Italy, after which, having returned to the 2nd army, he remained on the western front until Dec., 1918. In 1919 he was made a field-marshal and a peer as Baron Plumer of Messines (q.v.). He was governor of Malta from 1920 to 1924, and high-commissioner for Palestine, 1925-28. In 1929 he was made a viscount.



Viscount Plumer,
British soldier
Russell

PLUMPTON. Village of Sussex. It is 4 m. from Lewes on the Southern Rly. There is a racecourse. There is also a Plumpton in Yorkshire (W.R.), 2 m. from Knaresborough.

PLUMSTEAD. District of London. Part of the met. bor. of Woolwich, it is in the eo. of Kent, 10½ m. from Charing Cross, on the

Southern Rly. In addition to the marshes, the open spaces include Plumstead Common, Shoulder of Mutton Green, Bostall Heath, acquired for the public in 1877-78, and Bostall Woods, acquired in 1892.

PLUNKET, WILLIAM CONYNTHAM PLUNKET, 1st Baron (1764-1854). Irish lawyer. Born at Enniskillen, July 1, 1764, he became a barrister and a member of the Irish Parliament. After the union of 1800, which he opposed, he sat in the united parliament as M.P. for the university of Dublin. He was Irish attorney-general for two periods, and in 1827 was made chief justice of the common pleas. From 1830-34, and again 1835-41, Plunket was lord chancellor of Ireland. Made a baron 1827, he died Jan. 5, 1854, being succeeded by his son, the bishop of Tuam.



Lord Plunket,
Irish lawyer

Plunket's descendant, William Conyngham Plunket (1828-97), the 4th baron, was bishop of Meath 1876-84, and archbishop of Dublin 1884-97. He succeeded to the title in 1871, and died April 1, 1897.

His son, William Lee Plunket (1864-1920), who became the 5th baron, was governor of New Zealand 1904-10.

PLUNKETT, SIR HORACE CURZON (b. 1854). Irish statesman. Third son of the 16th Baron Dunsany, he was educated at Eton and University College, Oxford, and spent ten years ranching in the U.S.A. A strong supporter of co-operative methods in agriculture, he founded the Irish Agricultural Organization Society, 1894, in connexion with which he became widely known in Ireland. He sat as Unionist member for Dublin eo. S. 1892-1900, and acted as chairman of the Irish Convention

several constituencies. By the Representation of the People Act of 1918 it was practically abolished. A voter in the United Kingdom can now under certain conditions have two votes, but no more. See Franchise.

PLUTARCH (c. A.D. 48-122). Greek biographer and philosopher. He was born at Chaeronea, in Boeotia, and appears to have spent a considerable time in Rome. Plutarch's fame rests almost entirely on his *Parallel Lives*, a collection of biographies of notable men (with the exception of four) in pairs, one Greek, the other Roman. The resemblance between the pairs is often slight. They are of great historical interest, much of the matter being based on authorities now lost.

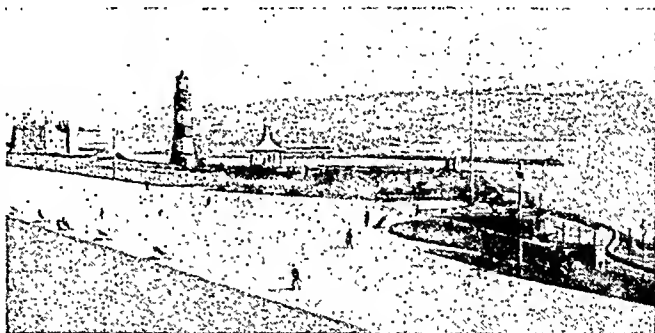
PLUTO (Gr. Ploutōn). Roman name for the god of the lower regions, more commonly known to the Greeks as Hades. He is regarded as (1) the stern ruler of the horrible underworld; (2) as a beneficent deity, who distributes to mankind the products of the earth, both mineral and grain. His wife was Persephonē. He is not to be confused with Plutus, the god of wealth, although etymologically the two deities are identical. See Hades; Persephonē.

PLUTO. Name given in 1930 by American astronomers to a trans-Neptunian body discovered by the Lowell Observatory, Arizona, in Jan., 1930, and claimed to be a new planet. Its magnitude has been computed as 15 to 16. Percival Lowell, in 1914, predicted the existence of a trans-Neptunian planet of the 12th to 13th magnitude. See Planet.

PLUTO MONKEY (*Cercopithecus leucampyx*). Species of guenon monkey, better known as the black-bellied monkey. It occurs in Central Africa, and the general colour of its hair is black, grizzled on the head and back. It is conspicuous by its bushy whiskers.

PLYMOUTH.

City of Devonshire. Since 1914 it has included Devonport and Stonehouse, and in 1928 it was raised to the rank of a city. It lies at the mouth of the river Plym at the head of Plymouth Sound, and is served by the Southern and G.W. Rlys. A large number of ships can find safe anchorage in Sutton Pool, Millbay, the Catwater,



Plymouth. The Hoe, with the upper section of the third Eddystone Lighthouse, dismantled in 1877 and now a memorial to Smeaton, its builder

1917-18. Among his writings on political and economic subjects are *Ireland in the New Century*, 1904; *A Better Way* 1914; *Home Rule and Conscription*, 1918.

PLURALISM. Practice of holding more than one ecclesiastical benefice at the same time. It was forbidden in England in 1529, but during the Georgian period it revived to a scandalous extent.

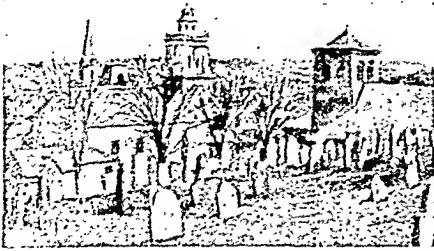
Acts of 1838 and 1885 made pluralities illegal, except in respect of very small livings with few parishioners, in which case the archbishop can grant a dispensation, if he thinks fit, for a clergyman to hold two livings, providing that the churches are within four miles of each other, and that the annual value of one of the livings does not exceed £200.

PLURAL VOTING. Name given to an electoral system that allows a man to have more than one vote at the same election. In the United Kingdom before 1918 there was a certain amount of plural voting at parliamentary elections, as a man could qualify as a landowner, although not as a resident, in

and the Hamoaze. Plymouth is a mail station for fast traffic from overseas to London, and is one of the chief fishery stations on the S. coast. The naval station is at Devonport. Plymouth Hoe contains a statue of Sir Francis Drake, and part of the old Eddystone Lighthouse as a monument to Smeaton. On the Hoe, too, is the citadel. The buildings include S. Andrew's church, and the block near erected for municipal purposes. There is a technical college. In 1929 an Elizabethan house in New Street was bought for a Drake and Mayflower museum. The town has adopted Estaires. Pop. 210,036. See Devonport.

Plymouth china is a variety of chinaware manufactured at Plymouth by William Cooksworth, from 1768-74. It is a hard paste biscuit ware.

EARL OF PLYMOUTH. Title borne since 1905 by the family of Windsor-Clive. Previously it had been held from 1682 to 1843 by the family of Hickman-Windsor. Robert Grey Windsor-Clive (1857-1923) was made earl of Plymouth in 1905.



Plymouth, Massachusetts. The old burying ground in which are buried some of the Pilgrim Fathers

PLYMOUTH. Town and port of Massachusetts, U.S.A. It stands on Plymouth Harbour, a branch of Massachusetts Bay, 36 m. S.E. of Boston. It was the landing-place of the Pilgrim Fathers in 1620, and the spot at which they disembarked is marked by Plymouth Rock, a granite boulder covered by a granite canopy. Other objects associated with the Mayflower Pilgrims are a national monument, 1858-88, and Pilgrim Hall. Pop. 13,045. See Pilgrim Fathers.

PLYMOUTH BRETHREN. Protestant sect which arose about 1830 in Plymouth and Dublin. One of its chief founders was John Nelson Darby. He gave up his position in the Church and travelled about the country, forming small societies of Evangelical Christians for Bible study and the promotion of spiritual life. These became small congregations, which met in houses and halls. The Brethren have no organic unity and no creed.

PLYMOUTH ROCK. Popular "utility" breed of fowls, originating in the U.S.A. from crossing a Black Java hen with a Grey Dominique cock. Robust, hardy birds, their blue-grey plumage is uniformly barred with black; and the bill, legs, and feet are yellow. Capital layers, their eggs are large and brown.

PLYMPTON. Market town of Devonshire. It is 5 m. from Plymouth on the Plym, and has a station on the G.W. Rly. The buildings include an old grammar school. Market day, first Mon. in month. Pop. 5,191.

PLYMSTOCK. Parish of Devonshire. It stands on Plymouth Sound, 3 m. from Plymouth. The Perpendicular church of S. Mary and All Saints has a Norman font. Pop. 4,121.

PLYNYMMON. Mountain of Wales. It stands on the borders of Cardiganshire and Montgomeryshire, and its highest point is 2,465 ft. Five rivers rise hereon—Wye, Severn, Rheidol, Dulas, and Llynfnant.

PLYWOOD. Name given to boards built up of plies or thin veneers of wood. These are cemented or glued together with the grain of each ply placed at right angles to that of the ply on either side of it. The special advantages of plywood are its extreme lightness and the counteracting of the natural tendency of timber to warp and split. Plywood is chiefly used for wall and ceiling panelling, furniture manufacture, and box-making, and in the construction of aeroplanes.

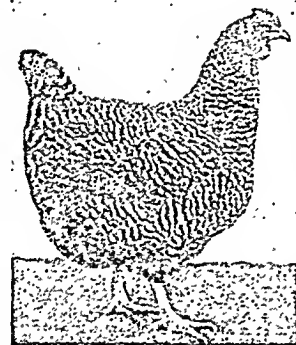
PNEUMATIC APPLIANCES. Name given to that class of machine or instrument which depends largely upon compressed air for power. Air is compressed in one, two, three, or four stages, according to the final pressure which is required. As a rule isothermal compression is used, i.e. the air is kept cooled to as near atmospheric temperature as possible by cold water circulated through jackets outside the cylinders, and in coolers through which the air passes between any two stages of compression. Cooling means a great loss of energy, a considerable proportion of which can be made good, however, by re-heating the air just before use.

The pneumatic hammer is a heavy piston moved to and fro by compressed air inside a

cylinder, furnished with a handle and a thumb valve. At the end of an outward stroke it strikes against a loose piece, which transmits the blow directly, or through a chisel, caulker, or other tool fitted into it. The small short-stroke hammer works at tremendous speed and makes 2,000-12,000 light blows a minute; the larger long-stroke gives 800-1,200 heavy blows in the same time. Pneumatic rock drills are generally larger and heavier than pneumatic hammers, are carried on supports, and have a mechanism for feeding the drill forwards and rotating it slightly between strokes. Pneumatic hoists are of great use in workshops and foundries for heavy work.

The application of paint, varnish, oil, etc., in the form of a fine air-blown spray has certain advantages over brush-work. The covering speed is much higher; the material is deposited more evenly on irregular surfaces. The air is led from a small compressor, or other source of supply, through flexible tubing to a portable air-tight vessel which contains the pot holding the paint and serves also as air reservoir. The spraying nozzle, connected with the container by two flexible pipes—one for the paint and the other for air—is controlled by a thumb valve. When the valve is depressed, paint is forced by air pressure through a fine jet and meets a stream of air issuing from another jet, by which it is atomised and blown on to the work.

PNEUMOGASTRIC or **VAGUS NERVE.** Important nerve on each side of the body, which arises from the base of the brain. After leaving the



Plymouth Rock, cross between Black Java and Grey Dominique

skull it traverses the neck and chest to reach the abdomen by passing through the diaphragm. It sends branches to the pharynx, larynx, heart, lungs, stomach, liver, and spleen, and in view of its connexion with the heart especially, and its power of slowing its beat, it must be regarded as a very important nerve.

PNEUMONIA (Gr. pneumōn, lung). Acute infective disease of the lung. The two chief forms are lobar or croupous pneumonia, and lobular or broncho-pneumonia.

Lobar pneumonia is a widespread and fatal disease. It is more common in towns than in rural districts, and poor health, underfeeding, alcoholism, and old age predispose towards the malady, of which exposure to cold or wet may be the immediate cause. Pneumonia may also occur in the course of, or as a complication of, many other diseases. The *Diplococcus pneumoniae* is the infecting micro-organism, and its first effect upon the lung is to produce congestion, followed by solidification of parts of the lung.

Broncho-pneumonia is an inflammation of the small bronchioles or air tubes of the lung and of the air vesicles. It may occur as a primary infection, or may be secondary to other diseases of the respiratory system. This form of pneumonia is very prevalent among children, particularly those living in towns who are badly nourished or suffer from rickets, and it is the most common cause of death following measles. Treatment of pneumonia consists mainly in very careful nursing. The patient should be in the open air, or in a

large, well-ventilated room. The diet should be very light, consisting chiefly of milk.

PNEUMONOKONIOSIS (Gr. pneumōn, lung; koniein, to make dusty). Disease of the lung due to inhalation of coal, steel, or stone dust, in industrial processes. The solid particles become deposited in the lymphatic glands of the lungs and bronchi.

PNOM PENH. Capital of Cambodia. French Indo-China. It stands on the Mekong, 130 m. N.W. of Saigon. Under the French régime the city has been provided with fine public buildings and spacious boulevards. The chief buildings are the palace of the Buddhist priests and the pagoda. It is a great centre of trade. Pop. 83,079.

PO (anc. Padus). River of Italy. It rises in the Cottian Alps (q.v.) by Mt. Viso, and flows in an E. direction through Piedmont, Lombardy, and Venetia to the Adriatic, which it enters by several mouths. It is about 415 m. long. The tributaries include the two Doras, Sesia, Ticino, Adda, Oglio, Mincio, Tanaro, Trebbia, and Secchia. Historically the river has been one of the major cock-pits of Europe. See Italy.

POACHING. Term used in English law for trespass upon another's land in pursuit of game or fish. For poaching during the day fines can be inflicted. The penalties for night poaching are three months' hard labour for a first offence, double that term for a second, and penal servitude or two years' hard labour for any subsequent offence.

People who unlawfully and knowingly fish in the daytime in waters where they have no right to fish are liable to have their tackle confiscated and to a fine of from £2 to £5. If the unlawful fishing is done by night, the offender can be arrested by anybody on sight, and taken before a magistrate for summary punishment. The use of any explosive to kill fish is forbidden, and the use of lime or any noxious material in private fisheries for the same purpose is punishable with penal servitude. Somewhat similar game laws are in force in other countries.

POCAHONTAS (c. 1595-1617). North American Indian princess, sometimes known as Matoaka. She was a daughter of Powhattan, over-king of the Indian tribes of Virginia. In 1612 she was lured upon an English vessel and taken to Jamestown as hostage for the good behaviour of the Indian tribes. Converted to Christianity, she was baptized Rebecca, and in 1613 married John Rolfe (1585-1622), a leading Virginian settler. In 1616 she accompanied her husband to England, and in March, 1617, died at Gravesend, leaving one son.

POCHARD (*Nyroca ferina*). Diving duck of the sub-family Anatidae. An expert diver, the male has a reddish-brown head, black breast and back, and grey sides. The female



Pochard, a wild diving duck which visits Great Britain

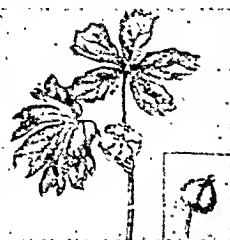
has greyish brown plumage. It is common as a migrant to Great Britain in the winter. The bird is found over a wide range in Europe, Asia, and North America. Pron. Pokard.

POCKET GOPHER (Geomys). A family of rat-like rodents which occur in North and Central America. The name is derived from their very large cheek pouches. They are about 8 ins. long without the tail, and the body

is covered with soft velvet-like fur. They burrow like moles beneath the ground and construct large chambers in which they collect stores of potatoes, nuts, and seeds.

POCKLINGTON. Market town and urban dist. of Yorkshire (E.R.). It is 13 m. from York, on the L.N.E. Rly. The church of All Saints, mainly Early English, has finely carved capitals. The school was founded in 1515. The industries are the making of farm implements and corn-milling, while horse, cattle, and sheep fairs are held. A canal connects the town with the Derwent. Market day, Tues. Pop. 2,642.

PODOPHYLLUM (*P. peltatum*) OR MAY APPLE. Perennial herb of the order Berberidaceae, native of N. America. Barren



Podophyllum. Leaves and flower; inset, fruit

stems end in a large round leaf with lobed margins; flowering stems with two one-sided, lobed leaves, and between them a solitary white flower, succeeded by a large yellow oval fruit with edible pulp, sweet and slightly acid. The leaves and stems are narcotic and poisonous. From the root-stocks the resinous extract known as podophyllin is obtained, which is used as a cathartic medicine.

POE, EDGAR ALLAN (1809-49). American poet, critic, and story writer. Born at Boston, Massachusetts, Jan. 19, 1809, he was left an orphan at the age of three. Poe published volumes of poems in 1827, 1829, and 1831. His first work as a story writer, *A MS. Found in a Bottle*, won a prize offered in 1833 by The Baltimore Saturday Visitor. His realistic romance of the sea, *The Narrative of Arthur Gordon Pym*, appeared in 1838; *Tales of the Grotesque and Arabesque* in 1840. He also achieved recognition as a critic. With the *Adventures of one Hans Pfaal* and *The Balloon Hoax* he anticipated Jules Verne, as in *The Gold Bug*, *The Murders of the Rue Morgue*, *The Mystery of Marie Roget*, and *The Purloined Letter* he may be said to have founded the modern detective story. Of his tales of fantasy the most remarkable are *The Fall of the House of Usher*, *The Pit and the Pendulum*, *The Cask of Amontillado*, and *The Assumption*. Fame came tardily with the publication in 1845 of *The Raven*. Then followed *The Bells*, *Ulalume*, *For Annie*, and *Annabel Lee*, the last named written in memory of his wife. He died of brain fever in hospital at Baltimore, Oct. 7, 1849.



Edgar Allan Poe, American writer

POELCAPELLE. Village of Belgium, in W. Flanders. It lies one mile E. of Lange-marck, and was prominent in the British operations in the Ypres salient in the Great War, especially in the third battle of Ypres, fought in 1917. See Ypres.

POET LAUREATE. A poet crowned with bays or wreath of laurel. The custom originated in Greece, and was perpetuated in Rome. In England the title poet laureate was applied to a poet attached to the court in the time of Edward IV, the first holder being John Kaye, author of *The Siege of Rhodes*. John Skelton called himself both poet laureate and regius orator; but the English laureateship is usually dated from Ben Jonson, to whom James I, by letters patent, gave a pension of

100 marks (about £67), a sum increased by Charles I to £100 and a tierce of canary wiae. Holders of the office have included Dryden, Southey, Wordsworth, Tennyson, Robert Bridges, and John Maschfield.

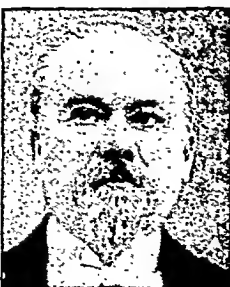
POETRY. Expression of thought and emotion in verse, with an appropriate diction, which, according to Milton, must be 'simple, sensuous and passionate.' Poetry is classified according to its form as dramatic, epic, lyric, etc., or according to the subject or motive as didactic, erotic, satiric, etc., but in the last analysis one cannot separate form from substance in poetry; the poem itself is the link that holds them together. Nevertheless there are many types. In Browning, for example, the intellectual element is emphasised: in Swinburne the musical. On the one side poetry may fall away so as to be barely distinguishable from prose; on the other, so as to be little more than verbal music. What is common to poets is a similarity in their way of viewing human experience, the emotional and imaginative way, together with a similarity in their way of presenting it, the rhythmical way. See Alliteration; Anthology; Rhythm.

POILU (Fr. hairy or bearded). Popular name given to the French soldier. It was first used for the recruits as distinct from the older men. Later the word came to signify the common soldier of France, particularly under the conditions of trench warfare.

POINCARÉ, JULES HENRI (1854-1912). French scientist. Born at Nancy, April 29, 1854, he became an engineer. In 1886 he was appointed professor of mathematical physics in the Faculty of Sciences, Paris, and in 1896 he became professor of celestial mechanics. He died July 17, 1912.

Poincaré was one of the most brilliant mathematicians of the 19th century, not only carrying out a series of remarkable investigations into the problem of three bodies and the theory of functions, in which he introduced an entirely new mathematical weapon, but also investigating the theory of non-Euclidean geometry, the higher algebraic functions, etc.

POINCARÉ, RAYMOND NICOLAS LANDRY (h. 1860). French statesman. Born Aug. 20, 1860, at Bar-le-Duc, he was called to the bar, and for some time contributed law court reports to *Le Voltaire*. He was elected to the Chamber of Deputies in 1887, and was minister of finance in the Dupuy cabinet, 1893-5, and again in 1906. On the fall of the Caillaux (q.v.) cabinet in Jan., 1912, Poincaré became prime minister and, with the premiership,



Raymond Poincaré, French statesman

took the ministry of foreign affairs. He was still premier when elected president on Jan. 17, 1913.

Poincaré retired from the presidency in Jan., 1920. He was president of the reparations commission for a short time, but resigned owing to lack of sympathy with the general Allied policy on that question. In Feb., 1921, he was elected president of the foreign affairs commission of the senate. In that capacity, and as foreign editor of *La Revue des*

Deux Mondes, Poincaré stood for a strongly nationalist policy. He was premier and minister for foreign affairs 1922-1924. He was again premier 1926-29, and for two years was also finance minister, being responsible for the stabilisation of the franc. His volume on *The Invasion of France* appeared in Dec., 1928, this being part of the series he undertook to write on the events of 1911-20.

POINTER. Old breed of sporting dog of Spanish origin, which as its British type has been crossed with the foxhound and the greyhound. It is characterised by the habit of pointing, or stopping dead and remaining rigid when it finds game at close quarters. A large specimen stands about 24 ins. high at the shoulder. In general appearance it is not unlike a foxhound, but is always parti-coloured, liver and white being the favourite combination.



Pointer. Prize-winning specimen of the breed of sporting dogs

POINT TO POINT.

Name given to a type of race for hunters. They are held under the auspices of a hunt, and are usually divided into two classes: for welter-weights, over 13 stone, and for light-weights under that figure. The course is generally one of three or four miles. See Steeplechasing.

Poiré, ESMANUEL. Real name of the French caricaturist better known by his pseudonym of Caran d'Ache (q.v.).

POISON (Lat. potio, draught). Substance which, when taken into the mouth or stomach or absorbed by the blood, is capable of seriously affecting health or destroying life. Some poisons have a local action only, as the strong mineral acids which injure the tissues with which they come directly in contact. Other poisons, e.g. morphia, only produce symptoms after having been absorbed into the system.

In the treatment of poisoning, the first object aimed at is removal of the poison from the system. Vomiting may be produced by tickling the back of the throat with a feather, or by the administration of an emetic (q.v.). The treatment for strong acid poisoning is to administer an alkali, calcined magnesia being the best; but sodium bicarbonate, chalk, or even plaster from the ceiling may be given. In poisoning by caustic potash or other alkalis, water with vinegar or lemon-juice should be given to neutralise the acid.

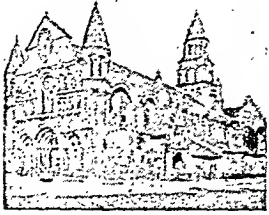
Poisoning by vegetable food, with the exception of fungi, is rare. Poisoning by meat is nearly always the result of acute infection by bacteria, following the eating of diseased or putrefying meat. Any decomposing fish may give rise to poisoning.

Certain substances are statutory poisons. They are enumerated in the schedule to the Poisons Act. Any preparation containing a statutory poison must be labelled as "poison," and dispensed in containers easily distinguishable by colour and shape. See Botulism.

POISON GAS. Term used to designate the various noxious chemicals employed to incapacitate troops in warfare. The chemical may either be discharged as a cloud, or filled into bombs or shell, the contents, generally in liquid form, being distributed by a small charge of explosive. See Gas Warfare.

POISON IVY (*Rhus toxicodendron*) OR POISON OAK. Bushy shrub of the order Anacardiaceae. It is a native of N. America, abundant in woods, thickets, and hedgerows, often climbing to considerable heights by means of rootlets, after the manner of ivy. The leaves are divided into three oval or rhombic leaflets, paler and downy beneath. It has minute, whitish flowers in panicles, succeeded by small cream-coloured berries. The whole plant is highly poisonous. See Sumac.

POITIERS. City of France. It stands on a hill near the confluence of the Clain and Boivre, 61 m. from Tours. The cathedral of S. Pierre, begun in the 12th century, contains architectural and other features of interest. S. John's church, said to be the oldest Christian building in France, dates from the 4th century, when it was built as a baptistery. S. Hilary's contains the relics of S. Hilary. Other churches are S. Radegonde's, much visited by pilgrims, and Notre Dame la Grande, both of the 11th and 12th centuries. The old tower of S. Porchaire was restored in the 19th century. The palais de justice embodies some parts of the castle of the counts of Poitou. The university dates from 1432. Pop. 42,347.



Poitiers. Church of Notre Dame la Grande, dating from the 11th century

The battle of Poitiers was an English victory over the French during the Hundred Years' War, Sept. 19, 1336. Edward, the Black Prince, in command of some 8,000 men, was marching up from Guienne when, near Poitiers, he found his way barred by a French army of 15,000 under King John. The fight ended in a complete victory for the English. King John, his son Philip, and some 2,000 knights were made prisoners, while about 3,000 were killed. The English losses were slight.

POKER. Card game. A full pack of cards is used, bearing their usual face value, except that the ace may count either as the highest or lowest. Five players make the best number. The dealer gives five cards, one at a time, to each person. Every player is for himself, and the object of the game is to hold the best hand; the different hands ranking in this order: 1. A sequence flush: a sequence of five cards all of the same suit. 2. Fours: four cards of the same denomination. 3. A full: a hand consisting of three and two cards of the same denominations. 4. A flush: five cards of the same suit. 5. A sequence or straight: five cards of different suits, but all in sequence. 6. Threes: three cards of the same denomination. 7. Two pairs. 8. One pair. 9. Highest card.

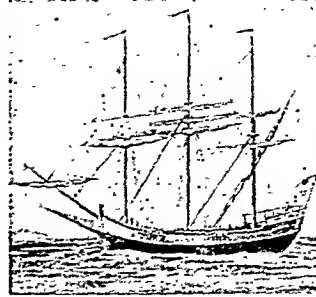
POKER WORK. Simple method of decoration. Formerly a red-hot poker with a sharp point was used, but a special apparatus is now in use, consisting of a lamp, with a tube and hand bellows, and a metal point, which is held in the flame until heated. Various woods and leather, velvet, and other materials can be decorated.

POKEWEED (*Phytolacca decandra*). **PIGEON-BERRY, OR RED-INK PLANT.** Perennial herb of the order Phytolaccaceae, a native of the warmer parts of N. America. It has large, fleshy, poisonous roots, tall stems, and large, oval, alternate leaves. The root is emetic and purging, and a tincture of the berries is used as a remedy for rheumatism.

POLA. Town of Italy, formerly the chief naval station of Austria-Hungary. There are two harbours, commercial and naval. E. of the commercial harbour is the 15th century cathedral; farther E. is the wall-encircled Castle Hill, crowned by a castle built by the Venetians. A temple of Augustus, built 19 B.C., and the amphitheatre are monuments of the Romans.

In the Great War part of the Austrian fleet was blockaded in Pola harbour by the Italians. The Italians occupied Pola early in Nov., 1918, and with Istria it passed to Italy by the peace treaty of 1919. Pop. 54,477.

POLACCA. Three-masted ship seen in the Mediterranean. Though square-rigged and carrying a jibboom, the main and fore masts are single spars, without top or cross-trees.



Polacca. Three-masted square-rigged vessel employed in the Mediterranean

POLAND. Republic of Central Europe, created by the peace conference following the Great War. It consists of Russian Poland, corresponding broadly with Congress Poland



Poland. Group of peasants in characteristic working dress

(Poland as defined by the Congress of Vienna, 1815); German Poland, comprising Posen (Poznan) and part of German Silesia; Austrian Poland, or Galicia; and part of the Vilna district, though Lithuania still claims it. Poland is bounded N. by the Baltic, East Prussia, Latvia and Lithuania, S. by Czechoslovakia and Rumania, E. by White Russia and Ukraine, and W. by Germany. Warsaw is the capital. The republic has the right to use the ports of Danzig and Memel. Its own port is at Gdynia (q.v.). The area is about 150,000 sq. m. Pop. about 30,000,000.

The crops include rye, potatoes, oats, wheat, barley, sugar beet, hemp, hops, and chicory. Cattle, horses, pigs, and sheep are reared, and the forests yield much timber. Coal is the most important mineral, others being petroleum, iron, zinc, salt, and potash.

Until the end of the 18th century Poland was an independent state, but it decayed, and by the partitions of 1772, 1793, and 1795 was divided between Russia, Prussia, and Austria. In 1807 Napoleon created the grand-duchy of Warsaw,

but in 1815 Poland was again partitioned between Prussia, Austria, and Russia.

In 1915 the country was seized by the Germans and Austrians, who in 1916 proclaimed its independence. A council of regency was set up, and under it were a ministry and a council of state. Independence was proclaimed on Nov. 9, 1918. Having taken control, Pilsudski (q.v.) called a constituent assembly. He himself became president and the musician Paderewski prime minister. The Treaty of Versailles recognized this independence, June, 1919. On March 17, 1921, a new constitution was adopted, and meanwhile the boundaries were defined.

The Poles were soon at war, first with the Bolsheviks and then with Ukraine and Czechoslovakia. They forced the Bolsheviks back into Soviet Russia, and in March, 1921, a peace was made by which Poland gained territory. There was friction with Lithuania, and in 1923 the Poles seized Vilna, which was formally given to them by the Council of Ambassadors. In 1922 Pilsudski retired, but in 1926 he returned and overthrew the existing government. He refused to become president, but became premier and minister of war. Resigning in 1928, in 1930 he again became premier.

The constitution of March 17, 1921, revised July, 1926, is based upon adult franchise. The Sejm comprises a senate or upper house and a diet or lower house, both elective. The president is elected by the national assembly for a period of seven years. The executive is a council of ministers.

POLARISATION. An ordinary ray of light may be thought of as an axis, about which very small electro-magnetic vibrations are being executed at an exceedingly rapid rate, and in every possible direction perpendicular to that of the ray. The polarisation of light involves the reduction of these haphazard and disorderly vibrations to a more regular system. The simplest type of polarisation is "plane polarisation," in which all the



Poland. Map of the republic which came into existence after the Great War, and includes territory once belonging to Russia, Germany, and Austria-Hungary



Pola, Italy. Ruins of the Roman amphitheatre; it was built of white Istrian limestone

vibrations along the ray are in the same plane; in the case of a vertical ray of plane polarised light the vibrations would all be horizontal and all in a given direction, e.g. the N.-S. direction. A ray of light may also be circularly polarised, in which case the vibrations are executed in circles about the axis of the ray. The phenomenon of polarisation may be obtained very simply by passing an ordinary ray of light through a crystal of tourmaline or of Iceland spar (q.v.). The plane of polarisation can be rotated by the presence of a strong magnetic field, and the passage of the ray through certain substances, such as quartz and various solutions, also causes a rotation. *See* Light.

POLARITY. Property of having poles, i.e. ends with some opposite quality or qualities. The best known example is the ordinary bar magnet with a N. and S. pole. The term is frequently used by electrical engineers. In a generator the positive pole is the terminal from which it is assumed that the current issues into the external circuit. The negative pole is that into which the current is assumed to flow from the external circuit. *See* Anode; Electricity; Magnetism.

Polar Regions. Term applied to the areas around the earth's geographical poles. *See* Amundsen; Antarctic; Arctic, etc.

Pole. Measure of length, also known as the rod. It is $5\frac{1}{2}$ yds. long. A square pole covers $30\frac{1}{4}$ sq. yds.

POLE, REGINALD (1500-58). English cardinal. Born in March, 1500, at Stourton Castle, Staffordshire, he entered the Church, retired from England to Italy in 1532, definitely broke with Henry VIII in 1535, and was made a cardinal in 1536. During the reign of Henry and the Protestant government under his successor, Edward VI, Pole could not venture to England; but on the accession of Queen Mary (1553) he was sent as papal legate to effect the formal reconciliation of England with Rome. Arriving Nov. 25, 1554, he was elevated to the vacant see of Canterbury. He died Nov. 17, 1558.



Reginald Pole,
English cardinal
After Tiltan

POLECAT (*Putorius foetidus*). British carnivorous mammal, belonging to the weasel tribe. It is about 17 ins. in length, and has a short, bushy tail. The general colour is blackish brown, the under-fur being yellowish brown; the legs are black, the rims of the ears and the lips white, and there is a bluish-grey band across the forehead. It lives in deserted rabbit holes, old buildings, and crevices in rocks; and preys upon small mammals and birds, frogs, reptiles, and eggs. It is noted for its very ferocious disposition. *See* Ferret.

POLESWORTH. Colliery centre of Warwickshire. It stands on the Anker, 4 m. from Tamworth, with a station on the L.M.S. Rly. Pop. 6,277.

POLICE (Fr. from late Lat. *politia*, civil government; Gr. *polis*, city). Civilian or semi-military force appointed by the government or other constituted authority to preserve law and order. Not until Peel's Act of 1829 "for improving the police in and near the metropolis" were there any properly organized police forces in the United Kingdom. This act brought the London police, with the exception of the City police, under the home secretary; defined the metropolitan police district, and

appointed two justices of the peace, afterwards called commissioners, to frame the necessary discipline, regulations, etc., for the management of the new force.

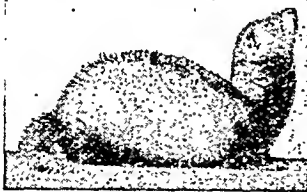


Police: five typical members of the London Force. 1. Metropolitan police-sergeant. 2. Mounted constable. 3. Inspector. 4. Policewoman. 5. Special constable

Under the Municipal Corporations Act of 1835 watch committees came into existence in the towns. They were responsible for the appointment of head and other constables. In 1839 the passing of an act enabled a majority of the justices at quarter sessions to raise and equip a paid police for the protection of their county, thus inaugurating the county police as distinct from the police forces controlled by the boroughs.

The Metropolitan Police are under the home secretary, who appoints the commissioner. Their headquarters are at New Scotland Yard. Elsewhere the police are controlled by the various county and borough councils, but the home secretary has certain powers over them. They are inspected from time to time on his behalf, and a state grant is made towards their expenses. In Scotland similar duties are discharged by the secretary for Scotland. In 1929 there were 57,300 policemen in England and Wales, 6,600 in Scotland, and 2,930 in Northern Ireland. The city of London police are controlled by the common council.

In 1920 the employment of suitable women police was recommended by a committee appointed for the purpose, and soon a number of women were appointed for duty as constables.



Polecat, small savage mammal found in parts of Britain
fr. S. Bertridge, F.Z.S.

POLICE COURT. This is a court of first instance or court of summary jurisdiction. In London and some other towns such courts are presided over by stipendiary magistrates. The judges of other police courts are styled justices of the peace and are unpaid. *See* Bow Street; Detective; Justice of the Peace; Magistrate; Scotland Yard.

POLITICAL ECONOMY. Science concerned with the production, distribution, and consumption of wealth. Adam Smith's Inquiry into the Nature and Causes of the Wealth of Nations, 1776, has been incomparably the most influential of all economic writings, determining the character and scope of the new science almost up to the present. It started from the individualistic point of view; it regarded benefit to society as the criterion of the moral character of actions; and it held that, within very wide and ill-defined limits, the well-being of society was brought about by individuals following their

natural passions or feelings. In particular, the pursuit of individual material self-interest was justified by its results to society.

To make of political economy the neat bundle of half a dozen interdependent "laws" which it afterwards became, and to apply these laws rigorously to the problems of taxation, was the work of Ricardo, in his Principles of Political Economy and Taxation, 1817, and of his popularisers, especially James Mill.

It was effected by dropping Smith's historical disquisitions, by pushing deductions from the motive of interest to their logical conclusions, and by taking over from Malthus as a second dominating force in economic life by the side of competition "the principle of population."

The developments of the 20th century, and still more the upheaval caused by the Great War, brought about a change in the general

conception of political economy. It became much wider in its scope. The idea of an economic man, isolated from all save purely economic forces, tended to disappear. Economists began to take account of health and environment, education and pleasures, because these, no less than rent and interest, are factors in the production and distribution of the nation's wealth.

POLK, JAMES KNOX (1795-1849). President of the U.S.A. Born in Mecklenburg county, N. Carolina, Nov. 2, 1795, of Scottish-Irish descent, his original name being Pollock, he was called to the bar in 1820. In 1823 he was elected to the legislature of Tennessee, and in 1825 became a member of Congress. For eight years he was speaker of the House of Representatives, and from 1839-41 governor of Tennessee. In 1844 he was elected president. During his term the Mexican war took place, and the Oregon boundary dispute with Great Britain was settled. Polk died at Nashville, June 15, 1849.



James K. Polk,
American president

POLKA. Round dance. Said to have been invented about 1830 by a Bohemian servant girl, in a few years it attained extraordinary popularity throughout Europe. The music is in 2-4 time, the characteristic feature being the rest on the second beat.

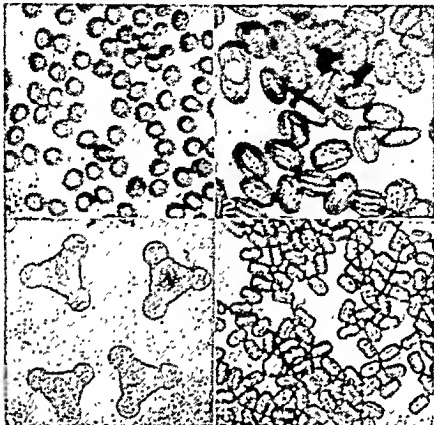
POLL (Mid. Eng. *pol*, back of the head). Taking of votes in order to ascertain the wishes of a majority of the people qualified to vote. The polling booth is the place where electors go to record their votes, and the polling day the day fixed for the voting. The announcement of the result is known as the declaration of the poll. The poll also plays a part in English company law. *See* Company Law; Election; Vote.

POLL TAX. This is a tax on every poll or head, sometimes called a capitation tax. Such were often levied in England until 1698. The imposition of this tax was one of the causes of Wat Tyler's rebellion in 1381. The tax was graded, the very poor paying nothing; others paid from 1s. to 20s.

POLLACK (*Gadus pollachius*). Common British fish, belonging to the cod family and nearly related to the coal fish. It is usually about 20 ins. long and is of a greenish colour.

It occurs off the coasts of Cornwall and Devon, Norway, N. America, etc., and is a valuable food fish and a source of oil. See Cod.

POLLEN. Mealy substance, mostly yellow, which fills the anthers of flowering plants and grasses. The grains of which it is composed contain the male elements or nuclei, which fuse with the female element in the ovules enclosed in the carpels or ovary. In plants that are pollinated by the wind (e.g. most forest trees) the pollen grains are dry and light. In other cases the pollen grain is variously roughened, that it may the more easily catch upon the hairy bodies of the insects that act as pollen carriers. When the pollen grains are brought to the stigma they are stimulated into activity and emit a long shoot which penetrates the ovary and enters the ovules, thus effecting fertilisation. See Botany; Flower.

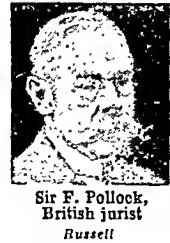


Pollen from British plants. 1. Thistle. 2. Sage. 3. Evening primrose. 4. Sweet Pea. 1, 3 and 4, magnified 66 times; 2, magnified 100 times

POLLOCK, SIR FREDERICK (b. 1845). British jurist. The eldest son of Sir W. F. Pollock, Bart., he was born in London, Dec. 10, 1845, and became a barrister in 1871. In 1882 he was appointed professor of jurisprudence at University College, London, and from 1884-1903 was Corpus professor of jurisprudence at Oxford. From 1884-90 he was professor of common law to the Inns of Court, and he edited *The Law Quarterly Review* and *The Law Reports*. With F. W. Maitland he wrote the standard *History of English Law*, 2nd ed., 1898.

Other noted members of this family include Sir F. Pollock's father, Sir William Frederick Pollock (1815-88), a distinguished lawyer, and Sir George Pollock (1786-1872), the soldier who led the expedition to Kabul in 1842. To a later generation belong Ernest Murray Pollock and his brother Bertram. The former was a Unionist M.P. from 1910-23, solicitor general 1919-22, and attorney-general 1922. In 1923 he was made master of the rolls, and in 1926 a peer as Baron Hanworth. Bertram was headmaster of Wellington College 1893-1910, when he was made bishop of Norwich.

POLLOKSHAW. District of Glasgow, formerly a separate burgh. On the White Cart, with stations on the L.M.S. Rly., it is mainly an industrial area. It was absorbed into Glasgow in 1912. See Glasgow.



Sir F. Pollock, British jurist
Russell

POLLUX. In Greek mythology, the twin brother of Castor. See Castor and Pollux. In astronomy Pollux is the popular name given to the star Beta Geminorum, in the constellation of the Twins. See Constellation.



Pollack, a British fish belonging to the cod family

and Japan. In India it was taken up by British officers, and so spread over the world. The first polo club in London was at Lillie Bridge.

Polo grounds are of turf, the standard size being 300 yards by 160 yards. In the centre of each end are the goal posts, 24 ft. apart. The game is played with balls and sticks and resembles hockey, except that the players are mounted on specially trained ponies. The best ponies are those which on a foundation of native British pony stock have grafted thoroughbred or Arab blood. The modern game is played at a high rate of speed, with four players a side. No. 1 and No. 2 are forwards. No. 3 is generally the best player in the team, and plays forward or back as the game requires. No. 4 is back, his primary duty being to defend his goal. In defence it is the duty of every man to ride the corresponding man on the other side off the ball. The governing body of polo is the Hurlingham Club (Fulham, London) polo committee.

POLO, MARCO (c. 1254-1324). Venetian traveller. Born of noble parentage, he accompanied his father and uncle in 1271 to China. Crossing Persia, Western Asia, and Tartary, through districts unknown to Europeans until modern times, the three Italians crossed the Gobi desert, and eventually reached the city of Shang-tu in 1275. Here they saw the Great Khan, who conceived a liking for Marco, conferred dignities upon him, and even appointed him to an administrative post. For three years Marco was governor of the city of Yangchow, and was employed in various political missions to India and to other parts of China. In 1292 the three Polos accompanied an embassy to Persia, and eventually reached Venice in 1295. Three years later Marco was taken prisoner by the Genoese, and during his confinement dictated an account of his travels in French.



Marco Polo, Venetian traveller

POLONIUM. Radio-active substance discovered by Pierre and Marie Curie in 1898. It is a product of radium emanation, and is also known as radium F. See Radium.

POLPERRO. Village of Cornwall. On the S. coast, 13 m. from Bodmin, it occupies a picturesque position in a valley. The chief industry is the pilchard fishery.

POLTAVA OR PULTAVA. Town of the Ukraine. It is 70 m. S.W. of Kharkov and is a rly. junction. Its chief industries are the making of tobacco, candles, soap, and leather. Peter the Great's signal victory over the Swedes in 1709 is commemorated by a memorial stone in the town. Poltava was captured by the Germans in 1918, and was taken by Denikin (q.v.) in 1919. Pop. 91,895.

POLTERGEIST (Ger. noisy ghost). In spiritualism, name given to the supposed agent of inexplicable occurrences in a house, e.g. the rattling of crockery, moving of furniture, etc. In a number of cases the apparent mystery has been proved to be the result of human agency, a cleverly managed trick. But, as the inquiries of the Psychical Research Society seem to show, some occurrences permit, if they do not compel, even the frankly sceptical to keep an open mind on the subject of the doings of the poltergeist.

POLYANDRY (Gr. polys, many; andres, males). Plurality of husbands. Usually deemed to arise from a paucity of women, especially in mountainous, insular, or sterile regions, it is often associated with food scarcity and girl infanticide. See Marriage. Polygamy.



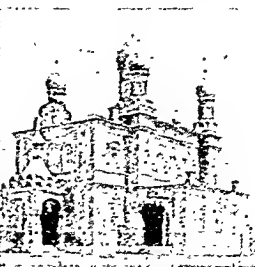
Polyanthus. Flowers and leaves of the hybrid

POLYANTHUS. Garden hybrid originally derived from crossing the cowslip (*Primula veris*) and the primrose (*P. acaulis*). By selection and further crossing an almost endless variety of form and colour has been raised.

POLYBIUS (c. 210-120 B.C.). Greek historian. He was born in Megalopolis in Arcadia. Deported to Italy after the conquest of Macedonia, Polybius was received in the household of Aemilius Paulus, with whose son, the younger Scipio, he formed a lifelong friendship. He returned to Greece in 146 B.C., and when the inevitable defeat took place Polybius set himself to secure the most favourable terms for his countrymen. So successful were his efforts that statues were erected in his honour in several of the cities of Greece. Of the 40 books of his history of Rome from 221-146, only the first five survive.

POLYCARP (c. 69-155). Apostolic father and saint. Born about A.D. 69, he is said to have become a Christian about the year 80 and to have been consecrated bishop of Smyrna by S. John about the year 96. Polycarp was the author of an Epistle to the Philippians, and about 155 he went to Rome to confer with Pope Anicetus on matters of Church observance. Soon after his return to Smyrna he was apprehended in a persecution of the Christians and burnt at the stake.

POLYCLITUS (5th century B.C.). Greek sculptor. One of the greatest artists of his time, his Doryphorus (spearman), of which there are copies at Rome, Florence,



Poltava. Memorial church to Swedish soldiers who fell in 1709

Naples, and Berlin, was, according to Pliny, the last word in perfect sculpture. Among his other works was the famous chryselephantine statue of the goddess Hera, once in the temple at Argos. Pron. Poly-cl'y-tus.

POLYGAMY (Gr. polys, many; gamos, marriage). Term commonly used for a plurality of wives. Strictly speaking, however, this is polygyny, from Greek words meaning many women, and its converse is polyandry, having many husbands. Polygamy really includes the two, and its antithesis is monogamy. See Marriage; Polyandry.

POLYGENISM (Gr. polys, many; genos, kind). Theory attributing to mankind descent from more than one original stock or pair. In one form it claims a separate ancestry for the main human races now extant, on the ground that their physical and mental differences are so fixed as not to be accounted for by the alternative view, called monogenism, of the unity of the human species.

POLYMERISM. Form of isomerism (q.v.), defined as the power which certain chemical elements and compounds possess of condensing their molecules. The product is said to be a polymer or polymeric of the simpler substance. Examples in inorganic chemistry are oxygen and acetylene. In the former case the condensed oxygen molecule (O_2) is known as ozone, while acetylene passed through a red-hot tube polymerises into benzene.

POLYNESIA (Gr. polys, many; nēsos, island). Term applied to the most easterly of the islands of the Pacific Ocean. Their limits are approximately the tropics of Cancer and Capricorn on the N. and S. and meridian 180° on the W. They include the Hawaiian islands, Samoa, the Society and Tubuai groups, the Marquesas, Fiji, the Phoenix and Tokelau or Union groups, and the Hervey or Cook and Manahiki islands.

The term Polynesian denotes the aboriginal population of the Pacific islands S. and E. of the Micronesian and Melanesian groups. Their ambit lies within a triangle whose corners are New Zealand, Hawaii, and Easter Island. Polynesians are usually lithe and active, averaging 5 ft. 8 ins. in height; olive-brown and longish-headed, they have oval faces and wavy hair, and are cheerful and dignified. The Polynesian dialects form a sub-family of the Austronesian division of the Austric family of languages. See Ethnology; Kanaka; Maori; Oceania; Taboo.

POLYPHEMUS. In Greek mythology, one of the Cyclopes, a race of giants. The son of Poseidon and Thoësa, he dwelt on the coast of Trinacria (Sicily), where he kept his flocks. In the course of their wanderings, Odysseus and his comrades sought refuge in the cave of Polyphemus, who killed and ate some of the companions of the hero. When the giant had gone to sleep Odysseus destroyed the sight of his one eye and escaped with the remainder of his comrades. See Cyclopes.

POLYPODY (*Polypodium vulgare*). Fern of the order Polypodiaceae. A native of Europe and the N. temperate zone, it has a fleshy root-stock which creeps on the surface of tree trunks, walls, and hedge bottoms. The leathery fronds are cut into lobes from the sides, and their stalks are jointed to the root-stock in such a way that they can be thrown off when old. They are produced singly at short intervals along the root-stock, and remain fresh and green throughout the winter.

POLYPORUS. Large genus of fungi of the order Hymenomycetaceae. The substance of the cap or pileus is corky or woody. They mostly grow upon living or dead wood—trunks, branches, or roots of standing trees, or worked wood. Those that grow from the trunks usually take the form of brackets. Many species are destructive to growing timber.



Polyporus. *P. squamosus*, a bracket-shaped species on a tree trunk

POLYPUS. Fibrous tumour growing from mucous membrane, to which it is attached by a stalk. Polypi are most frequently met with in the nose, bladder, rectum, or uterus. They rarely become malignant, i.e. cancerous in nature. If the growth is accessible, it is as a rule easily removed.

POLYTECHNIC (Gr. polys, many; technē, art). Term applied to any institution affording practical training in the arts and sciences. The first London polytechnic, 309, Regent Street and 5, Cavendish Square, opened Aug. 6, 1839, was devoted to lectures and the exhibition of new inventions. Other London polytechnics are at Battersea, Clerkenwell, Chelsea, and Woolwich, and there are similar institutions in many provincial cities. The work, carried on by means of day as well as evening classes, at these polytechnics embraces both theoretical and practical training in classrooms and laboratories, while at most of them is a department for the teaching of domestic economy to girls and women. See Hogg, Quintin.

POLYXENA. In Greek legend, the daughter of Priam, king of Troy, and beloved of Achilles. After the taking of Troy, Polyxena was taken captive by Neoptolemus, the son of Achilles, and sacrificed by him on his father's grave in obedience to the demand of the shade of Achilles. Pron. Polliëks-in-a.

POLYZOA. Name applied to a zoological phylum of minute animals, mostly marine; which live in colonies. The sea-nats, common on sandy shores and often mistaken for seaweeds, are familiar examples. The colonies assume many forms, some being tree-like, others leaf-like, while others form incrustations on rocks and seaweeds.

POMEGRANATE (*Punica granatum*). Tree of the order Lythraceae, native of W. Asia. The leaves are oblong or lance-shaped, and the red flowers are in small clusters at the ends of the branches. The large fruits, golden tinged with red, are remarkable in their structure, there being two series of carpels, one above the other. The seeds are coated with sweet, juicy pulp. The rind is used for tanning.

POMERANIA (Ger. Pommern). Dist. of Prussia, once a separate duchy. The present province, which is not coterminous with the old duchy, has an area of 11,664 sq. m. and a pop. of 1,878,781. It extends along the shores of the Baltic between Mecklenburg and Poland. The islands of Rügen, Wollin, and Usedom lie off the coast. Pomerania is remarkable for the number of its lakes. The chief rivers are the Oder and its tributaries.

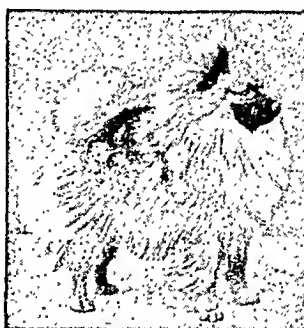
About 1200 the rulers of Pomerania called themselves dukes and the district became part of the German kingdom. The dukes subdivided their lands to provide for various branches of the ducal family. In 1625 it was united under a single duke, and in 1637, on his death without sons, it was claimed by Brandenburg. In 1648

it was divided; Brandenburg secured eastern, and Sweden western, Pomerania. In 1720 most of Western Pomerania was handed over to Brandenburg, and in 1815 the whole became part of Prussia. See Prussia.

POMERANIAN DOG. Breed of pet dog. In Germany it is known as the Spitz and is claimed as one of the national breeds. In general appearance the Pomeranian recalls a diminutive chow or Eskimo dog. In its original and large form, a breed now little known, the Pomeranian was used as a wolf dog, but in Great Britain only the diminutive type is seen. Specimens weigh 8 lb. and less; the favourite colour is black, but white and fawn are sometimes seen; the ears should be erect. See illustration below.

Pomona. In Roman mythology, a nymph or goddess. She was the patroness of gardens and fruit.

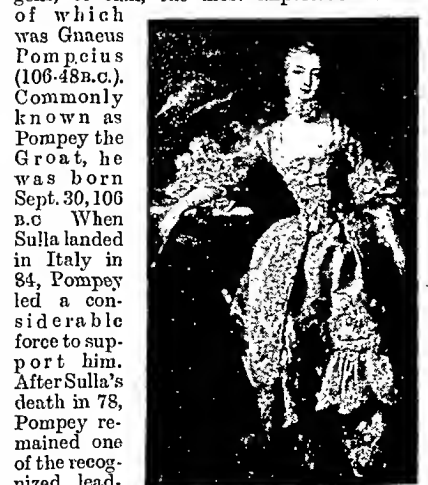
POMONA OR MAINLAND. Largest of the Orkney Islands. Its area is 150 sq. m. It is divided into two unequal portions by Kirkwall Bay and Scapa Flow (q.v.). The surface is mainly moorland and heath, with some fertile valleys. Kirkwall and Stromness are the only towns. "Maes Howe," a chambered barrow, and the Standing Stones of Stenness, a group of stone circles, are interesting antiquities. Pop. 14,083.



Pomeranian Dog. Champion specimen of the breed. See above

POMPADOUR, JEANNE ANTOINETTE POISSON, MARQUISE DE (1721-64). Mistress of Louis XV. Born in Paris, Dec. 29, 1721, she became mistress of Louis XV in 1745, and thenceforth, a woman of high talents and with great ambition, exercised much political influence. She accumulated a large fortune, became a duchess, 1752, and lady-in-waiting to the queen, 1756. She personally carried out many of the king's state duties, and her patronage of writers and artists enhanced her influence. The French alliance with Austria, 1756, was due to her spite against Frederick II. She died at Versailles, April 15, 1764.

POMPEIA. Name of a Roman plebeian gens, or clan, the most important member



Marquise de Pompadour, mistress of Louis XV
From the portrait by Boucher in the Wallace Collection, London

of which was Gnaeus Pompeius (106-48 B.C.). Commonly known as Pompey the Great, he was born Sept. 30, 106 B.C. When Sulla landed in Italy in 84, Pompey led a considerable force to support him. After Sulla's death in 78, Pompey remained one of the recognized leaders of the senatorial party, whose armies he commanded in Spain, 76-71. In 67 he was successful in suppressing the pirates in the Mediterranean, and in 66 overthrew Mithradates (q.v.), thus bringing the entire east under the Roman sway.

After the year 62 his hitherto brilliant record became one of failure. Since now he would neither give way to the senate nor seize absolute power, he formed an alliance, known as the first triumvirate, with Crassus and Julius Caesar. In 58 Caesar took up the consulship of Gaul, while Pompey, remaining in Rome, rapidly lost influence. In 52 the government broke down altogether. The result was the invasion of Italy by Caesar in 49, the decisive defeat of Pompey at Pharsalus, Aug. 9, 48, and his flight to Egypt, where he was assassinated, Sept. 29. See Caesar, Julius.

Pompey's younger son, Sextus Pompeius Magnus, in the second civil war collected a powerful fleet and seized Sicily. In 36 his fleet was defeated, and after a time he was captured in Asia and put to death.



Sextus Pompeius
From a statue in the
Louvre, Paris

still ruinous when the great eruption of Vesuvius, Aug. 24, 79. The city stood at the mouth of the river Sarnus. The walls are nearly two miles long, but had been pulled down on the sea side. The streets are narrow and generally straight, and are paved with lava. Of the two fora or market places, the larger is surrounded on

three sides by a colonnade, and facing it are the principal temples, the municipal buildings, the macellum or provision market, and other public buildings. The smaller, or triangular, forum, partly surrounded with a portico, contains remains of a Greek temple. Near are two theatres and the gladiators' barracks. At the E. end of the city is an amphitheatre.

There are three thermæ, or public baths, and outside the walls are two streets of tombs. The most interesting remains are the private houses, which illustrate with extraordinary vividness the life of all classes. In 1925 and 1926 excavations brought many treasures to light, including a beautiful bronze statue of Apollo. See illus pp. 15, 591

PONCHO. Cloak worn by men in Peru, Chile, Argentina, and other parts of S. America. It is a wide strip of cloth with a slit in the middle through which the head is passed.

PONDICHERY. Seaport of India, belonging to France. It stands on the E. coast, 85 m. from Madras, and is divided by a canal into a European and a native town. The capital of a district, 115 sq. m. in extent, Pondicherry was founded by the French about 1675. Pop. 47,626.

PONDOLAND. Country forming part of the Cape Province, S. Africa. It stretches

along the coast, S.W. of Natal. The area is 3,906 sq. m. Pop. 264,904. See South Africa.

PONDWEED (Potamogeton). Genus of aquatic herbs of the order Naiadaceae, natives chiefly of temperate regions. They have submerged, translucent or floating, opaque leaves, and simple flowers in spikes.

PONIARD (Lat. pugnus, fist). Term used for a small dagger. It usually refers to a slender weapon of this kind, introduced from France, having a triangular or square blade, and used for stabbing at close quarters. See Dagger.

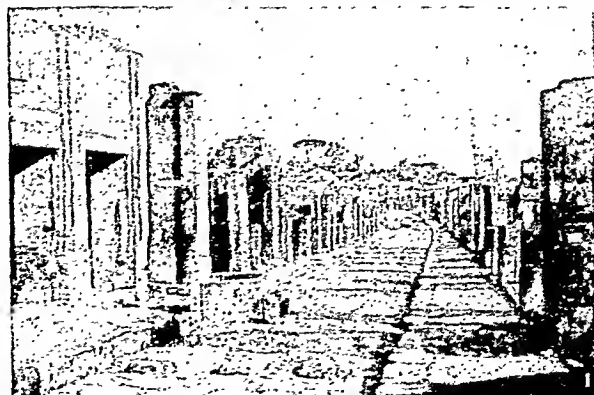
PONTEFRAC or POMFRET. Borough and market town of Yorkshire (W.R.). It is 21 m. from York, near the junction of the rivers Aire and Calder, and is served by the L.M.S. and L.N.E. Rlys. The ruins of the Norman castle show it to have been of unusual strength and size. The adjoining grounds have been made into a public recreation



Pontefract, Yorkshire. Ruined hall of the castle
a Norman structure

ground. Of the churches the chief are S. Giles and All Saints. There is an old hermitage cut out of the rock. The industries include tanning, brewing, iron-founding, and corn milling. Pomfret cakes made here are lozenges of liquorice. Race meetings are held Market days, Tues. and Sat. Pop. 16,790.

PONTIAC (c. 1712-69). North American Indian chief. As chief of the Ottawas he assisted the French commander, Montcalm, against the British, and took part in the annihilation of Braddock's force in 1755. In 1763 he was mainly responsible for the carrying out of a conspiracy against the British garrisons in N. America, and unsuccessfully besieged Detroit for five months. He was murdered by an Indian belonging to the Kaskaskian tribe in 1769.



Pompeii. 1. The Street of Abundance, so called because it was the centre of the jewellers. 2. Peristyle and inner court of a Pompeian house

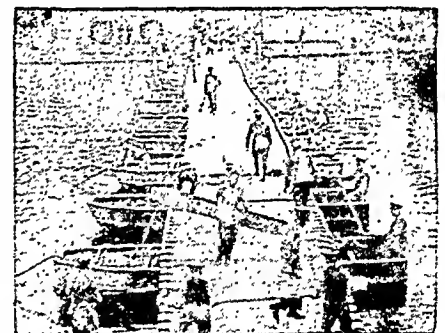
PONTIFEX (Lat. bridgemaker) Member of the most important college of priests in ancient Rome. The college was charged with the maintenance of the law in so far as it was bound up with religion, a special function being the supervision of the calendar. When Christianity became the state religion the title was assumed by the popes. See Pope.

PONTIFICAL or ORDINARY. Roman Catholic service book for the use of bishops or of priests specially empowered by bishops. Books of this kind originated in the 8th century, and were compiled by bishops from old sacramentaries, etc., in the Middle Ages. The Roman pontifical was first printed in 1485; that in use was revised by order of Leo XIII. The Greek Church has its own pontifical. A bishop's vestments are also called pontificals. See Vestment.

PONTOON. Flat-bottomed boat, particularly one of special design employed for military bridge building. This type of bridge utilises the boats as piers, the superstructure forming the roadway being thrown across from boat to boat. It can be speedily erected and is particularly useful for crossing wide streams, as no foundations for the piers are required. Modern pontoons are usually made in two or three sections for convenience of transport.

PONTRESINA. Village of the Upper Engadine, Switzerland. At an alt. of 5,915 ft., 4 m. E. of St. Moritz, it is a favourite summer and winter resort. Pop. 734.

PONTUS. Ancient dist. of Asia Minor along the Black Sea. It was a monarchy about 400 B.C., and was prosperous, strong and independent until its king, Mithradates the Great, was conquered by Pompey, 63 B.C.



Pontoon. Last stage in the construction of a pontoon bridge. See above

Part became a Roman province, and the rest survived under a native ruler until A.D. 63, when this, too, was taken by Rome. Amasia was the capital, and afterwards Pharnacia.

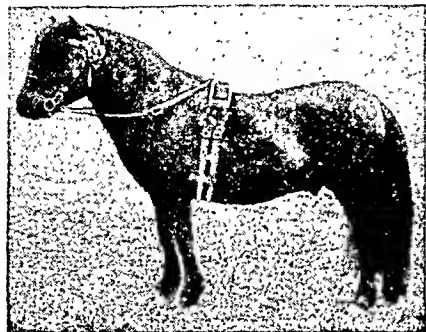
PONTYPOOL. Urban dist. and market town of Monmouthshire. It is 8 m. from

Newport, with stations on the G.W. and L.M.S. Rlys., being also served by a canal which connects it with Newport. The chief industries are coalmining and works for making iron and tin plate. The buildings include S. James's church and the town hall. In the 17th cent. japanned wares were made here, and sheet iron was manufactured a little later. Market day, Sat. Pop. 7,800.

PONTYPRIDD. Market town and urban dist. of Glamorganshire, Wales. It stands at the junction of the rivers Rhondda and Taff, 12 m. from Cardiff, on the Great Western Railway.

In the neighbourhood are coal and ironstone mines, and the chief industries are the manufacture of tinplate and iron goods, and the founding of iron and brass. A bridge, dating from 1755, which crosses the Taff here is regarded as a wonderful engineering feat. Market days, Wed. and Sat. Pop 49,000.

PONY (Old Fr. poulenet, from Lat. pullus, young animal). Small type of horse. Ranging in height from 14 hands to as low as eight



Pony. Shetland pony, one of the oldest breeds of the domesticated horse

it is probably the oldest breed of domesticated horse. In many details the small, half-wild ponies of the Shetland Islands and Connemara resemble Przevalsky's wild horse of Mongolia. The Celtic breed is found in its purest form in Iceland, and the ponies of the Faroe and Shetland Islands have undergone but slight modification. These ponies develop a heavy rough coat, and the mane and forelock are luxuriant. The ponies of the Devonshire moors and the New Forest, and also those of the Welsh hills, have undergone considerable modification from the original type. See Horse.

POODLE. Breed of dog commonly supposed to be of French origin, but found in both Russia and Germany. In France and Russia the poodles are black, but in Germany a white breed is found. The poodle is very intelligent and learns tricks readily. It makes one of the best retrievers known, and in Germany and France is largely employed in the chase. In its natural state the coat is very long, often hangs in cords, and drags the ground; but the and the clip the hinder half of the body and tail, leaving the hair in tufts.

POOL. It is played by a played on a billiard table. two to twelve, each number of players from ball, and playing having a different coloured sequence of the color turn according to the The object of the games on the scoring board. the ball played on. Throughout is to pocket an equal share to the person contributes three lives, losing a lifelol, and starts with each time his ball is pocketed paying forfeit The last player left in taked by another. Billiards; Snooker Pool. is the pool. See

POOLE. Borough, seaport town of Dorset. It stands on and market 5 m. from Bournemouth on the Dorset peninsula. The guildhall dates from 1761. Southern Rly. manufactures of pottery, rope, and There are implements. Poole Harbour is an agricultural English Channel about 7 m. long at the broad. Within it is Brownsea, or Ed 41 m. Island. Market day, Thurs. Pop. 4,661.

POONA. Town of Bombay, India. The capital of a district, it stands at the union of the rivers Mutha and Mula, 120 m from Bombay, and is an important rly. junction. It is the residence of the governor of Bombay during the rainy season, and an important military station. The industries include the making of fine wares of gold, silver, brass, etc., and of cotton, paper, and flour. The district has an area of 5,360 sq. m. Pop., dist., 1,009,033; town, 214,796.

POOR CLARES OR CLARISSSES. Order of nuns founded in 1212 by S. Clare with the advice of S. Francis of Assisi. They were brought under the Benedictine rule, which was repeatedly modified, and no uniform system was accepted: the Urbanists following the milder rule instituted in 1264 by Pope Urban IV, and the Coletines observing the reforms made by S. Colette in 1436. The Poor Clares devote themselves to the education of poor girls. They are under the authority of the Minorites, and the Minorities in London preserves the memory of one of their former nunneries. See Clare: Francis, S.

POOR LAW. Legislation passed for the benefit of the needy and distressed. In Great Britain the statute of 1601 laid down that each parish should take care of its aged and impotent poor people, provide work for its able-bodied poor, and apprentice its pauper children; that overseers of the poor should be appointed with power to levy a poor rate and build workhouses.

The first workhouse was built in Bristol in 1697. Guardians of the poor were established in 1782. A royal commission appointed in 1832 reported that "the great source of abuse was the out-door relief afforded to the able-bodied, either in kind or in money." The great measure of 1834 followed, and a poor law board was appointed. In 1871 this was replaced by the local government board, whose duties were transferred in 1919 to the ministry of health. In April, 1930, the boards of guardians ceased to function, their duties being transferred to committees of the county and county borough councils.

VAGRANCY LAWS. The law confers upon the authorities certain powers for punishing the incurably idle and impostors who seek to take advantage of poor law relief. "Idle and disorderly persons" are liable to a month's hard labour. An appeal lies to quarter sessions. They include able-bodied people who become chargeable to the rates through refusing to work, paupers becoming chargeable to parishes from which they have been removed under the old law of settlement of paupers, those who leave workhouses or casual wards without leave or remain on after their time is up, those who break the workhouse rules, etc. See Pauperism.

POPE, THE (Gr. pappas or papas, Lat. papa, father). Name specifically applied to the bishop of Rome since 1073. The full title of the pope is Bishop of Rome and Vicar of Jesus Christ, Successor of S. Peter, Prince of the Apostles, Supreme Pontiff of the Universal Church, Patriarch of the West, Primate of Italy, Archbishop and Metropolitan of the

Roman Province, and Sovereign of the Temporal Dominions of the Holy Roman Church.

Known also as Pontifex Maximus, he claims supreme authority in all matters of faith. Elected by the college of cardinals, his coronation in S. Peter's includes the laying-on of hands by other bishops according to a rite dating from the early part of the 14th century. His ordinary dress includes a white silk cassock and rochet and a scarlet mantle; his insignia, the straight crosier, or pedum reotum, pall or pallium, and tiara or triple crown. He is addressed as Your Holiness, Beatissime Pater, etc., and refers to himself as Servus Servorum Dei, servant of the servants of God.

The pope lost his temporal power in 1870, and remained confined to the Vatican until 1929. See Papacy; Rome; Vatican.

POPE, ALEXANDER (1688-1744). English poet and satirist. He was born May 21, 1688, in Lombard Street, London, where his father was a prosperous linen-draper. Bred in the Roman Catholic faith, his religion made it impossible for him to enter any of the professions. He therefore followed his own predilection for literature. His reputation was made first by his Essay on Criticism, 1711, and secondly by The Rape of the Lock, 1712, a brilliant satire on the fashionable life of his time, which brought him an interesting circle of literary friends, including Gay, Addison, and Swift. The first part of his translation of the Iliad appeared in 1715, the last part of the Odyssey in 1725. Pope received some £10,000 for the work, and was thus enabled in 1718 to establish himself at Twickenham, where he lived until his death, May 30, 1744.

During the period in which he was occupied with Homer he published two poems, the Elegy to the Memory of an Unfortunate Lady, and the Epistle of Eloisa to Abelard; he was also engaged on an edition of Shakespeare which came in for unfavourable criticism from a certain Lewis Theobald. This so annoyed Pope that he made Theobald the hero of his satirical poem, The Dunciad, 1728. His Essay on Man appeared in 1733.

POPERINGHE. Town of Belgium. In Flanders, it is 6 m. W. of Ypres and is a hop growing centre. During the Great War it was a centre of the British forces on the Flanders front. Held by German troops at the beginning of the war, it was occupied by Allied forces on Oct. 15, 1914. Serious damage was caused in the German advance in 1918. Toc H, a social centre for officers and men, was established here in 1915. The church and other buildings were restored and a memorial erected in the Grande Place. Pop. 11,767.

POPISH PLOT, THE. Name given to an imaginary Roman Catholic conspiracy in 1678. Taking advantage of a popular feeling against the duke of York and the Roman Catholics, Titus Oates (q.v.) swore an information, Sept. 6, 1678, before Sir Edmund Berry Godfrey, that a Popish plot was afoot to kill the king and massacre Protestants. Five weeks later Godfrey was murdered, and panic ensued. As a result of Oates's further allegations many Catholics in all stations of life were imprisoned and some were executed. Ultimately one of Oates's informers was found guilty of perjury, and in 1685 Oates was convicted.

POPLAR (Populus). Genus of trees of the order Salicaceae, natives of Europe, Asia, and N. America. They have alternate leaves, and the small flowers (without sepals or petals) are



Alexander Pope, English poet. After H. Hudson



Poodle. Champion corded poodle, showing one way of clipping this breed of dog

crowded in hanging catkins, which usually appear before the leaves. The sexes are on different trees. Familiar examples are the white poplar (*P. alba*), black poplar (*P. nigra*), Lombardy poplar (*P. italica*), and the aspen (*P. tremula*). See Lombardy Poplar.

POPLAR.

Borough of the co. of London. It lies N. of the Thames, combines the parishes of Poplar, Bow and Bromley, and contains the East and West India docks, Mill-wall docks and the Isle of Dogs. Here are the L.C.C. School of Engineering, 1906, and Poplar Hospital, in which about 60,000 patients are treated annually. In addition to Victoria Park, 73½ acres, the bor. has several small open spaces, including Island Gardens, 3 acres, in which is the entrance to the tunnel to Greenwich, opened in 1902. It sends two members to Parliament. Pop. 162,618.

POPOCATEPETL (Aztec, smoking mountain). Conical volcano of Mexico. Situated about 40 m. S.E. of Mexico city, it reaches 17,520 ft. alt.

POPPY (*Papaver*). Genus of about 40 erect, annual or perennial herbs, of the natural order Papaveraceae. They are natives of Europe, Asia, Africa, and Australia. They have erect stems with variously lobed or cut alternate leaves, and large, showy flowers on long stalks. The numerous small oily seeds can escape from openings under the eaves of the ripe capsule only when the latter is jerked. The field poppy is the cornfield weed. The larger opium poppy, with white or purple flowers, and the oriental poppy are frequently grown in gardens, but the Shirley poppy is the more general favourite. All the species have a milky sap with narcotic properties, and the seeds under pressure yield a valuable oil which is not narcotic. See Californian Poppy; Horn Poppy; Opium.

POPPY DAY. This name is sometimes given to Armistice Day (Nov. 11), because on that day artificial poppies are sold in the streets for the benefit of ex-service men.

POPULATION. Term for the inhabitants of any place, regarded collectively. In 1798 Malthus propounded the doctrine that population tended to increase more quickly than the means of subsistence. He could not have foreseen the marvellous development of science and transport by which food supplies have been both increased and made more accessible. But his doctrine will be recalled perhaps by the calculation made at Geneva in 1930 that if the increase since 1926 were maintained the pop. of the world would be doubled in 70 years.



Poppy. Left, scarlet field poppy. Right, varieties of Shirley poppy, a favourite garden species

In 1929 the population of the world was estimated at 1,849,500,000, divided as follows: Asia, 1,013,000,000; Europe, 475,000,000; N. America, 146,000,000; Africa, 143,000,000; S. America, 64,000,000; Oceania, 8,500,000.

As regards race the main divisions with their totals, are as follows:

Mongolian	680,000,000
Caucasian	725,000,000
Negro	210,000,000
Semitic	100,000,000
Malayan	104,500,000
Red Indian	30,000,000
	1,849,500,000

BRITISH EMPIRE. In 1929 the population of the British Empire was estimated at 449,600,000. This figure was divided as follows:

Great Britain and Northern Ireland	44,200,000
Europe (including Irish Free State)	3,400,000
Asia	332,650,000
Africa	50,400,000
America (including W. Indies)	11,150,000
Australasia	7,800,000
	449,600,000

The total shows an increase of only 4,000,000 over that for 1921, when most of the censuses were taken, but the actual increase is really 17,000,000, as the population of Egypt, which is now outside the Empire, was included in the 1921 figure.

As regards Great Britain the census figures show how the population has grown since 1821. The figures are in millions, and that for Ireland in 1921 is an estimate only.

	1821	1851	1881	1911	1921
England	11.3	16.9	24.6	34.0	35.7
Wales	0.7	1.0	1.4	2.0	2.2
Scotland	2.1	2.9	3.7	4.8	4.9
Ireland	6.8	6.6	5.2	4.4	4.5
United Kingdom ..	20.9	27.4	34.9	45.2	47.3

While the population of the United Kingdom grew by about 2,000,000 in the intercensal period 1911-21, the increase was less than any corresponding figure since 1811. This was due to increased emigration, war losses, and loss of births through the war. See Census.

PORCELAIN. Fine pottery of more or less translucent substance coated with a hard transparent glaze. It was discovered by the Chinese, wherefore it is often called china, and attained great perfection during the Ming dynasty, 1368-1644. The Japanese also have made porcelain for many centuries. It was not introduced to Europe until the late 17th and 18th centuries. See China; Pottery.

PORCH (Lat. porticus). In building, an enclosed place of entrance and exit projecting from the main mass. The church porch originated in the narthex (q.v.). In civil and domestic architecture the term includes the gabled cottage porch, and the verandah screening the entrance to a house in the "colonial" style.

The porch was the name given to the Stoics and their philosophy, from the fact that the founder, Zeno, lectured in the Stoa Poecile, the painted porch (or colonnade) in the market place of Athens. See Stoicism.

PORCHESTER OR **PORTCHESTER.** Village of Hampshire. It stands on Portsmouth Harbour, on the S. Rly. An important Roman station, it was one of the chief stations of the navy until the sea receded. In 1926 the remains of its Norman castle (12th cent.) became national property.

PORCUPINE. Rodent mammals of the family Hystricidae, distinguished by their defensive armour of hollow quills and spines.

They are distributed over S. Europe, S. Asia, Africa, and America. The common porcupine (*Hystris cristata*) is about 27 inches in length, and has black hair with a white crest on the head and band on the neck. The quills are ringed with black and white, and are of great length. Porcupines are generally found in hilly districts, and spend the day in burrows or clefts in the rocks, feeding at night upon roots and vegetables. When attacked, they rush backward at their foe, and can inflict very severe wounds with their quills. The porcupines of America have short quills and long tails.

Porcupine. The common crested variety found in Europe

Porcupine Ant Eater. Variant name of the echidna (q.v.).

PORCUPINE GRASS (*Spinifex*). Small genus of grasses of the tribe Panicaceae, three species natives of Australia, and one native of tropical Asia. The leaves are in the form of spines, which inflict terrible sufferings on man or beast venturing among the grass.

PORDENONE, It. Name taken by the Italian painter, Giovanni Antonio Licinio (1483-1539). He was born near Pordenone, Venetia. His frescoes in Treviso cathedral and the altarpiece of The Trinity for the cathedral of San Daniel are noteworthy.



Porcupine Grass. Spiny leaves and flower

PORK (Lat. porcus, hog). Uncured flesh of the hog. In Great Britain the greater part of the consumption is in the form of bacon. Still there is a considerable demand for fresh and salted pork, which in the U.S.A. and Canada is a standard and favourite article of diet. The United States is the greatest hog producing country in the world.

Pork is a forbidden food to both Mahomedan and Jew, perhaps originally because it deteriorates rapidly in hot weather. Hutehison (Food and Principles of Dietetics) states that 3½ oz. of pork require 3 hours for digestion, as compared with 2 hours for beef. Medium fat pork contains 60.9 p.c. of water, 12.3 p.c. protein and gelatin, 26.2 p.c. fat, and 0.6 p.c. ash. In very fat pork the percentage of protein and gelatin may be as low as 9.7 p.c. and the fat content as high as 45.5 p.c. See Pig.

PORLOCK. Village of Somerset. It is 6 m. from Minehead, and about a mile from the coast. Porlock Bay is an opening of the Bristol Channel, about 4½ m. across. Pop. 965.

PORPHYRY. In geology, name given to igneous rocks of varying composition. The famous red porphyry used by the Romans for an ornamental stone is obtained from Jebel Dukhan, in Egypt. Cut and polished, the rock shows bright red or white spots on a deep red background. Granite porphyries are generally pink to grey. A green variety was often used with the red as a contrasting ornamental stone, especially for objects of art and decorations. The green variety is found in Greece, and at Lambay Island, near Dublin.

PORPOISE. Genus of aquatic mammals belonging to the order Cetacea. The common porpoise (*Phocaena communis*) is about 5 ft. to

8 ft. long, is blackish on the upper parts and white below, and in form resembles a miniature whale, but has a more sloping head. It is found in herds or schools off the British, Scandinavian, and American coasts. It lives on fish, and is now killed mainly for its oil, a fine specimen yielding about three gallons. The so-called porpoise hide is the product of the white whale.

PORSENA or **PORSENNIA**, LARS. King of Clusium in Etruria. According to the Roman legend, he led his army against Rome to restore Tarquin. An attempt to storm the city was defeated by the valour of Horatius Coclès (q.v.).

PORSON, RICHARD (1759-1808). English scholar. Born at East Ruston, Norfolk, Dec 25, 1759, the son of a parish clerk, he went from Eton to Trinity College, Cambridge, where he had a brilliant career.



Richard Porson.
English scholar

Declining to take orders within the specified time, he lost his fellowship in 1792, but was in the same year elected regius professor of Greek at Cambridge. In 1806 he was made librarian of the London Institution. He died Sept. 25, 1808. Among

his works are editions of Aeschylus and of some of the plays of Euripides.

The Porson prize is an annual prize awarded to undergraduates of Cambridge University for the best translation of a passage of English poetry into Greek verse.

PORT ADELAIDE. Seaport of S. Australia. It stands on an estuary of the gulf of St. Vincent, 8 m. from Adelaide, of which it is a part, and has an excellent harbour and docks. Agricultural products are exported.

PORTADOWN. Urban dist. of co. Armagh, Northern Ireland. It stands on the Bann, 25 m. from Belfast, on the G.N.R. It has manufactures of linen, and a trade in agricultural produce. Pop. 11,727.

PORTAGE LA PRAIRIE. City of Manitoba, Canada. Situated 56 m. W. of Winnipeg, it is the centre of a famous farming district, and its industries include flour and brick making and grain elevators. Pop. 6,513.

PORT ALFRED. Seaside resort of the Cape Province, S. Africa. It stands at the mouth of the Kowie river, and is connected by rly with Grahamstown. The attractions include boating, golf links, and a racecourse. Pop. 873 whites.

PORT ANTONIO. Seaport town of Jamaica. Situated on the N.E. coast, 28 m. N.E. of Kingston, it has two good harbours, and is the chief exporting centre for the Jamaica banana trade. Pop. 6,272.

PORTARLINGTON. Town of the Irish Free State. It is partly in King's co. (Offaly) and partly in Queen's co. (Leix), 42 m. from Dublin on the G.S. Rlys. Pop. 1,954.

The Irish title of earl of Portarlington has been borne since 1785 by the family of Dawson, now Dawson-Damer. The family seat is Emo Park, Portarlington, and the earl's eldest son is known as Viscount Carlow.

PORT ARTHUR. City and port of Ontario, Canada. It stands at the head of Lake Superior, 991 m. from Montreal. It has a fine harbour, ships quantities of grain to Montreal and elsewhere, and in addition to large grain elevators has shipbuilding yards, sawmills, blast furnaces, etc. Pop. 14,886

PORT ARTHUR or **LUSHUN.** Fortified seaport at the S.W. end of the Liao-tung peninsula, Manchuria. It is a terminus of the Siberian rly. and has a secure harbour ice-free throughout the year. Pop. 23,702.



Porpoise. Common species, Phocaena communis, found off the coasts of Britain

The fortress was captured twice by the Japanese; easily in 1894 from China; and from the Russians between May, 1904, and Jan. 2, 1905, at a cost of

58,000 killed and wounded, the Russians losing 23,000 killed and 15,000 wounded and sick.

By the treaty of Portsmouth, 1905, Port Arthur was ceded by the Russians to Japan, and in 1915 the Chinese extended the lease for a further 99 years. During the occupation by Japan important rly. construction has been undertaken in the Liao-tung peninsula. See Russo-Japanese War.

PORT AUGUSTA. Seaport of S. Australia. At the head of Spencer Gulf, 259 m. N. of Adelaide by rly., it is the outlet of a district of gold, copper, iron, and coal mines, and of a pastoral area producing wheat and wool. Ostrich farming is carried on. Pop. 1,389.

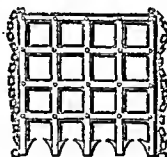
Port au Prince. Capital and chief seaport of Haiti, West Indies. It ships coffee, hides, and logwood. Pop. 79,797. See Haiti.

PORT BANNATYNE. Watering place of Buteshire. It stands on Kames Bay, 2 m. from Rothesay. Near is Kames castle, dating from 14th cent.

Port Blair. Penal settlement of the Andaman Islands, in the bay of Bengal.

PORT CHALMERS. Port of South Island, New Zealand. Situated 8 m. from Dunedin, for which it is the deep water port, it has graving docks, etc. Pop. 2,700.

PORTCULLIS (Fr. porte, gate; coulisse, a groove). In military architecture, a strong, timber-framed grating like a harrow, made to slide up and down in stone grooves in the portals of fortified castles.



Portcullis. Defensive grating of medieval castles

Port Darwin. Former name of the port of North Australia now known as Darwin (q.v.).

PORTE or **SUBLIME PORTE.** Term formerly used for the government of Turkey. It comes from an Arabic word for gate. This special use of the word bears relation to the Eastern custom of using the gates of cities and royal palaces as places where justice was administered.

PORT ELIZABETH. Seaport of Cape Province, S. Africa. It stands on Algoa Bay, 712 m. from Johannesburg and 664 from

Cape Town, with both of which it is connected by rly. The Baakens river runs through the town, which is a shipping and distributing centre, but has no enclosed harbour, goods being landed at modern jetties. The roadstead, however, is sheltered. The manufactures include boots, flour, and jam, and there is an ostrich market. Pop. 33,370.

PORTEOUS RIOTS. Two affrays between the Edinburgh populace and the city guard in 1736. At the execution on April 14 of a smuggler named Wilson the crowd assaulted the guard, which, led by its captain, John Porteous, opened fire, killing five or six persons. Porteous was convicted of murder but respited, and the citizens dragged him from the Tolbooth prison and hanged him in the Grass Market on Sept. 7. Scott described the affair in *The Heart of Midlothian*.

PORTER, HORACE (1837-1921). American soldier. Born April 15, 1837, he entered the army and became a major-general. Closely associated with Grant, he served with distinction through the civil war. In 1866 he was made assistant secretary for war, and from 1869-73 he was executive secretary to President Grant. From 1897 to 1905 he was American ambassador in Paris, and he died May 29, 1921. He wrote reminiscences of the civil war.



Horace Porter.
American soldier

PORT ERIN. Watering place of the Isle of Man. It is 15 m. by rly. from Douglas and stands at the head of Port Erin Bay. Here are a fish hatchery and a marine biological station. Pop. 3,200.

Port Fairy. Town and harbour of Victoria, Australia. It is 187 m. by rail W.S.W. of Melbourne. Pop. 2,000.

PORT GLASGOW. Burgh and seaport of Renfrewshire, Scotland. It is on the Clyde, 20 m. from Glasgow, on the L.M.S. Rly. There are wet and dry docks, shipbuilding yards, iron foundries, and works for making rope, sailcloth, etc. Timber is imported. Port Glasgow arose from the village of Newark, and the ruins of Newark Castle are near. In 1668 the bailies of Glasgow bought the land, built a harbour, and made it the seaport of Glasgow. In 1775 it was created a burgh. Pop. 21,022.

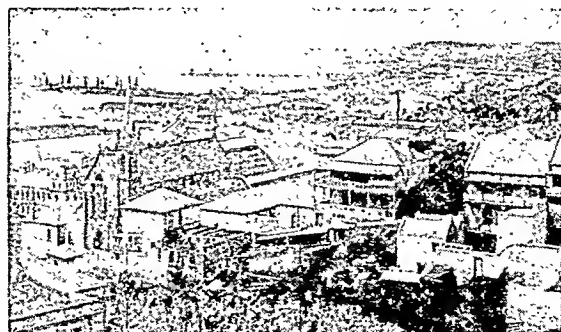
PORT HARCOURT. Seaport of Nigeria. It stands at Iguaicha, and is the terminus of the rly. being constructed N. to join the Iddo-Kano Rly.

PORTHCRAWL. Seaport and urban dist. of Glamorganshire, Wales. It is 30 m. from Cardiff on the G.W.R. The town is visited for bathing and golf. It is proposed to construct a promenade 7 m. long. The urban district includes Newton. Pop. 7,000.

Port Herald. Town of the Nyasaland Protectorate, S. Africa. It is on the Shire river. 61 m. from Chindio.

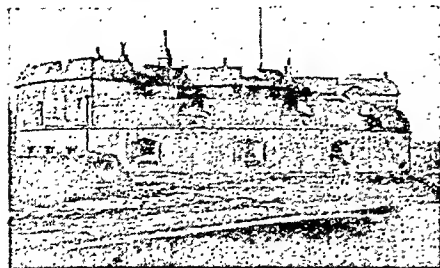
PORT HOPE. Port and town of Ontario, Canada, in Durham co. Situated on Lake Ontario, 63 m. from Toronto, it is a watering place, as well as a market for the fruit of the neighbourhood. Pop. 4,456.

PORTISHEAD. Urban dist and watering place of Somerset. It stands on the estuary of the Severn, 11 m. from Bristol, on the G.W.R. There is a dock here covering 12 acres. Pop. 3,817.



Port Elizabeth. South end viewed from the lighthouse

PORT JACKSON. Harbour of New South Wales, Australia. The so-called Parramatta river is really the largest arm of the harbour. Sydney was founded on one of its coves. See Sydney.



Portland, Dorsetshire. The castle built by Henry VIII in 1520 and still in official use

PORTLAND. Peninsula of Dorsetshire known as the Isle of Portland. It is also an urban district. Connected with the mainland by Chesil Bank, it is 4½ m. long, with an average breadth of one mile. It is noted for its stone quarries. In 1921 the prison was made into a Borstal Institution. There is a castle, built in the 16th century. The naval harbour, Portland Roads, covers 2,200 acres, and is protected by gigantic breakwaters. The inhabitants live by fishing and pasturing sheep. The rocky extremity of the peninsula is called Portland Bill. Pop. 12,550.

BATTLE OF PORTLAND. This was a naval fight between the English and the Dutch, Feb. 18-20, 1653. The Dutch lost heavily both in warships and merchantmen, which were being convoyed from the East Indies.

PORTLAND BEDS. In geology this name is given to a sub-division of the Upper Jurassic system of rocks. The strata of the Portland Beds lie above the Kimmeridge Clay and below the Purbeck Beds, and are typical in the S. of England, particularly at Portland. Portland Beds consist chiefly of limestones, contain many fossil shells, and are extensively used for building stones. See Kimmeridgian.

PORTLAND. City of Maine, U.S.A. The largest and chief commercial city of the state, it stands on Casco Bay, 106 m. N.N.E. of Boston. The first settlement here was made in 1633, the place being first known by its Indian name of Machigonne. Later it was known as Falmouth. Longfellow was born here. Pop. 69,272.

PORTLAND. City of Oregon, U.S.A. It stands at the confluence of the Columbia and Willamette rivers, 53 m. N. by E. of Salem. Here is the medical department of the state university. The city has a zoological garden and about 350 acres of public parks. Portland harbour is accessible by the largest vessels, and carries on an important export trade in flour, grain, and lumber. The city has lumber and flour mills, foundries and machine shops, iron works, and furniture, saddlery, soap, candle, and paint factories. Portland was founded in 1845. Pop. 282,383.

Three towns in Australia are named Portland. One is in New South Wales; the second is in Victoria; and the third in South Australia.

PORTLAND, DUKE OF. English title. The earldom of Portland was held by the family of Weston from 1633-88. It was revived in 1689 by William III for his Dutch favourite, Hans Willem Bentinck (1649-1709), and his son Henry was made duke of Portland in 1716.

The 3rd duke, William Henry Cavendish-Bentinck (1738-1809), who became duke in 1762, was made a cabinet minister in 1765. In 1782 he was Lord-lieutenant of Ireland, and in 1783 was for a short time prime minister. From 1794 to 1801 he was home secretary under Pitt, and from 1807 to 1809 he was again prime minister. He married a daughter of the duke of Devonshire and took the additional name of Cavendish. He died Oct. 30, 1809. William John (1800-79), the 5th duke, was the eccentric recluse who was wrongly believed to have lived a double life, masquerading as T. C. Druce, a tradesman in Baker St., London. He died in 1879, when a kinsman, William John Arthur Cavendish-Bentinck (h. 1857), became the 6th duke. He was master of the horse 1886-92 and 1895-1905.

The duke's eldest son is called the marquess of Titchfield. The chief residence of the family is Welbeck Abbey, in Nottinghamshire. The London property around Welbeck Street, Portland Place, Baker Street, and neighbourhood owned by the 5th duke was left by him to his sisters, one of whom was Lady Howard de Walden.

The Portland club is a London social club. It was founded in 1816 and is generally recognized as the chief card playing club. The house is at 9, St. James's Square, S.W.

The Portland Vase is a fine example of cameo-glass of the early Roman empire. Formerly in the Barberini palace, Rome, the Portland family deposited it from 1810-1929 in the British Museum. Shattered by a madman in 1845, it was skillfully restored.

PORT LOUIS OR ISLE OF FRANCE. Seaport of Mauritius, capital of the island. There are botanical gardens and two observatories, astronomical and meteorological. The exports include sugar, aloë fibre, coconut oil, etc. Pop., with suburbs, 54,460.

PORTMADOC. Urban dist., market town and seaport of Carnarvonshire, Wales. It stands on Tremadoc Bay, 16 m. from Carnarvon, on the G.W.R. It has a commodious harbour, and exports slates. Market day, Fri. Pop. 4,185.

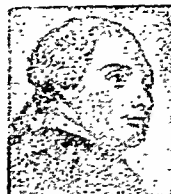
PORT MAHON. Spanish naval station and seaport. It is the capital of Minorea, Balearic Isles, and has an arsenal and a wireless station. Pop. 17,500.

PORTMAN, VISCOUNT. British title held since 1873 by the family of Portman. Edward Berkeley Portman (1799-1888), a Dorset landowner, was made Baron Portman in 1837, and a viscount in 1873.

Portman Square is a London square. At the S.W. end of Baker Street, Marylebone, W., it is named after William Henry Portman (d. 1796), owner of a large estate in Marylebone. Begun about 1764, it was completed about 1784.

PORT MORESBY. Capital and chief port of Papua. It is centrally situated on the sheltered and picturesque Fairfax Harbour, has regular steamship communication with Sydney, and has a wireless station. It dates from 1873. Pop. 3,000.

PORT NOLLOTH. Port of Namaqualand, S. Africa. It is on the N.W. coast of the Cape Province, is the terminus of the rly. that runs to the copper mines at O'okiep, and has regular steamship communication with Cape Town. Pop. 1,600.



3rd Duke of Portland
British statesman
After Stothard



6th Duke of Portland
British nobleman
Russell

PORTOBELLO. Wateriog place of Midlothian, Scotland, part of the city of Edinburgh. It stands on the Firth of Forth, 3 m. from Edinburgh (q.v.) proper.

PORT OF SPAIN. Seaport and capital of Trinidad, British W. Indies. Situated on the E. coast and a finely built town, it exports cocoa, sugar, asphalt, coconuts, copra, rum, and petroleum. It is also known as Spanish Town. Pop. 66,836.

PORTON. Hamlet of Wilts, 5½ m. N.E. of Salisbury, with a station on the S.R. Here is a chemical warfare experimental station of the British navy.

PORTO RICO. Island in the W. Indies, a possession of the U.S.A. The easternmost and smallest of the Greater Antilles, it lies 75 m. E. of Haiti, and measures 100 m. by 38 m. The elevated parts are covered with forests of palms. Sugar, coffee, cotton, bananas, and tobacco are produced and cattle rearing is an important industry. The capital is San Juan; other large towns being Ponce and Mayaguez. Discovered by Columbus in 1493, and settled by Juan Ponce de León in 1510, the island remained a Spanish possession down to 1898, when it was ceded to the U.S.A. Its area is 3,435 sq. m. Pop. 1,422,000, about two-thirds whites. See West Indies.

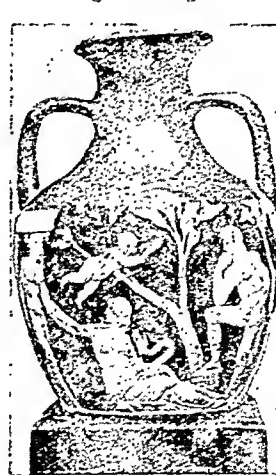
PORTPATRICK. Seaport and watering place of Wigtownshire. It is 7 m. from Stranraer and 21 m. from the coast of Ireland. From 1600 to 1849 it was a station for the packet service to Ireland. Pop. 1,100.

PORT PHILLIP. Harbour of Victoria, Australia. The largest indentation on the Victorian coast, it is 30 m. from N. to S. and 30 m. across at its widest part. It was colonised in 1835, and gave its name to the district which in 1851 became Victoria.

PORT PIRIE. Seaport in S. Australia. It stands on Spencer Gulf, and has smelting works for the Broken Hill silver mines. It exports ore and wheat. Pop. 2,527.

PORTREE. Town of Skye, also the capital of the island. It stands on Portree Bay, on the western side of the island, 120 m. from Oban, with which it is connected by steamer. It is visited by tourists. Pop. 2,120.

PORT ROYAL. Name of a famous Cistercian convent in France and of a school of theological thought to which it gave rise.



Portland Vase. Roman cameo-glass vase formerly loaned to the British Museum. See above

Founded in 1204 by Mathilde de Garlande, it stood between Versailles and Chevreuse, in the valley of the Yvette. Early in the 17th century it underwent a great revival under Jacqueline Marie Angélique Arnauld (q.v.), and had the support of S. Francis de Sales, Blaise Pascal, and others, and removing to Paris in 1626, in 1633 began

a new life in the Faubourg St. Jacques, Paris, where it became a centre of Jansenist and educational and anti-Jesuit activity. Political jealousy and ecclesiastical opposition forced the recluses to vacate Port Royal des Champs for Les Granges, a farm near by. Finally,



Earl of Portland,
English politician
After Simon de Bois

the remaining members having been expelled in 1709, the buildings were destroyed, by order of Louis XIV, Jan 22, 1710. See Jansenism.

Port Royal. Seaport and naval station of Jamaica. It has a naval dockyard, arsenal, barracks, hospital, etc. Pop. 1,004



Portrush, Northern Ireland. Ruins of Dunluce Castle formerly a stronghold of the earls of Antrim

PORTRUSH. Urban dist., seaport, and watering place of co. Antrim, Northern Ireland. It stands on Ramore Head, 67 m. from Belfast. An electric line connects it with the Giant's Causeway, 7 m. away, and near are the ruins of Dunluce Castle. There are golf links and good bathing. Pop. 2,100.

PORT SAID. Town in Egypt, at the N entrance of the Suez Canal. Named after Said Pasha, it stands on land reclaimed from the sea, and was founded in 1859 as a coaling station. Pop. 100,900.

Adjoining Port Said is a model town, Port Fuad. Pron. Sigh-id.

PORTSEA. Peninsula of Hampshire, known as the island of Portsea. It lies between Portsmouth and Langstone Harbours. On it stands Portsmouth, and part of that borough is known as Portsea.

Portslade. Urban dist. and watering place of Sussex. It is 4 m W of Brighton, with a station on the S. Rly. Pop. 8,136.

PORTSMOUTH. City, naval station, and seaport of Hampshire. It stands on a peninsula jutting into the English Channel, and is 74 m from London, on the S. Rly. The city consists of Portsmouth proper, Portsea, Landport, Southsea, and Cosham. Portsmouth and Portsea, facing the harbour, are

the naval districts; Southsea is a watering place. In 1926 Portsmouth was made a city, in 1927 it became the seat of a bishop, and in 1928 its chief magistrate was made a lord mayor. It returns three members to Parliament

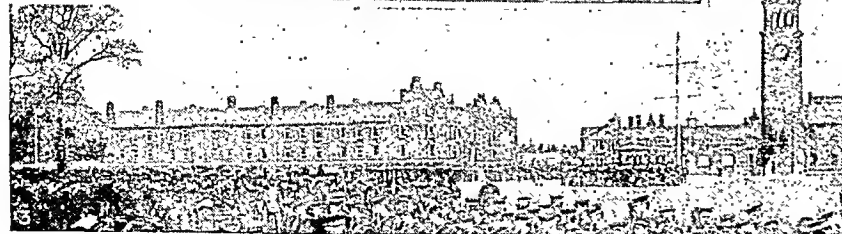
Apart from the naval establishments, the chief buildings are the town hall, the church of S. Thomas Becket, dating from the 12th century but largely restored, and now the cathedral, the fine parish church at Portsea, the garrison church, and the Roman Catholic cathedral. There is a grammar school and a fine municipal college. Other buildings of interest include the Star and Garter, the museum in the old guildhall, and the Dickens museum. There are theatres, picture palaces, and a concert hall. At Southsea are a fine esplanade and an extensive common. Steamers go regularly from here to Ryde and Southampton. A ferry and a floating bridge connect it with Gosport. The royal dockyard covers over 300 acres and has 10 m. of rlys. Connected with it are Admiralty House, barracks, hospitals, a naval college, museum, and a torpedo range. N. of the dockyard is Whale Island, where is the naval gunnery school. Southsea Castle, now a fort, was built by Henry VIII in the 16th century. Pop. (1921) 240,700 (excluding non-civilians).

Portsmouth Harbour is an opening of the English Channel, 4 m. from N. to S.

PORTSMOUTH. City of New Hampshire, U.S.A. It stands on the Piscataqua river, 58 m. by rly. N. by E. of Boston. It has a capacious harbour, containing a number of picturesque islands, on one of which there is a U.S. navy yard. Boots and shoes are manufactured; marble is quarried. Settled in 1623, Portsmouth became a city in 1849. The peace treaty between Russia and Japan was signed here, Sept. 5, 1905. Pop. 13,600.

Another Portsmouth is a city of Virginia. It stands on the Elizabeth river opposite Norfolk, and has a large naval yard. The buildings include Trinity church, dating from 1762, the city hall, and a naval hospital.

PORTSMOUTH, LOUISE DE KÉROUALLE, DUCHESS OF (1649-1734). Mistress of Charles II of Great Britain. She belonged to an old Breton family. In 1672 she bore the king a son, who was created duke of Richmond; in 1673 she was created duchess of Portsmouth. Unpopular in England, owing to her insatiable avarice, after Charles's death she returned to France. She died in Paris, Nov. 14, 1734.



Portsmouth. 1. George Hotel, High Street, where Nelson spent his last night ashore. 2. The City Hall. A fine classic building erected in 1890. 3. Parade Ground of the Royal Naval Barracks

Stephen Cribb, Southsea

The title of earl of Ports mouth has been borne since 1743 by the family of Wallop. The earl's eldest son is called Viscount Lymington.

Port Stanley. Seaport and capital of the Falkland Islands. Whale products, wool, hides, etc., are exported. Pop. 900.

PORT SUDAN. Seaport of Sudan, on the Red Sea. It is the centre of traffic with the Sudan in gum, cotton, sesame, senna, and ivory. There is an extensive harbour. Pop. 7,000.

PORT SUNLIGHT. Industrial town of Cheshire. It lies 3 m. S. by E. of Birkenhead on the L.M.S. Rly., and is reached from the river Mersey by a tributary, Bromborough Pool. The estate, laid out in 1888 by Messrs.



Louise de Kéroualle, Duchess of Portsmouth After Lely



Port Sunlight, Cheshire. The Post Office in this model industrial village Courtesy of Lever Bros.

Lever Bros. Ltd., covers 235 acres. There are large recreation grounds, social clubs, and welfare institutions. See Leverhulme, Viscount.

PORT SWETTENHAM. Seaport on the Strait of Malacca in Selangor. It dates from 1901, when the rubber of the Federated Malay States required a port for export.

PORT TALBOT. Seaport of Glamorgan-shire, Wales. It stands on Swansea Bay, 11 m. from Swansea, on the G.W.R. It has two large docks, and copper smelting is an industry. Founded in the 19th century, it was made a bor. in 1921. It absorbed the borough of Aberavon and included the urban dist. of Margam and some rural areas. Aberavon has large tinplate and engineering works, and gives its name to a co. division which returns one member to Parliament. Pop. 40,039.

PORTUGAL. Republic of S.W. Europe. The ancient Lusitania, it is bounded N. and E. by Spain, and W. and S. by the Atlantic Ocean. Its area is 34,254 sq. m., or, with the Azores and Madeira Islands, 35,490 sq. m. Pop. 5,621,977 and 6,032,991 respectively. Lisbon is the capital and largest town; Oporto is the only other populous place.

Physically, Portugal is an integral part of the Iberian Peninsula. The largest mt. range is the Serra da Estrela, 6,540 ft. The chief rivers are the Minho, Guadiana, Douro, and Tagus. The coast, some 500 m. in length, is generally low and flat. Sulphur, copper, wolfram, lead, coal, tin, silver, gold, and iron are found. Salt is obtained from the Aveiro lagoon and other salt-marshes. The climate generally is equable and temperate.

Portugal, famous in the story of maritime exploration and discovery, possesses colonies in Africa and Asia as follows: Capo Verde Islands, Guinea, Principe and St. Thomas Islands, Angola, East Africa or Mozambique, Goa, Diu, Timor, Macao, etc. Their total area is 945,575 sq. m.; and they have a pop. of over 10,000,000.

An independent state since the 12th century and a monarchy until 1910 (Oct. 5), the existing constitution was adopted Aug. 20, 1911. It provides for a president and two

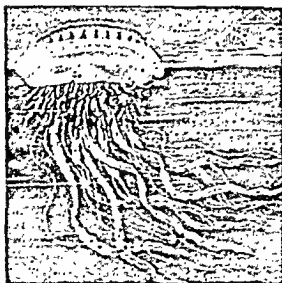
chambers, viz. the national council of 164, elected for three years by direct suffrage; and an upper chamber of 71, elected by all the municipal councils and renewable as to one half of the members every three years. The president of the republic is elected by both chambers, his term of office being for four years; he may not be re-elected. There is no state religion, but the predominant faith is Roman Catholic. Education is compulsory. There are three universities. Military service is compulsory between the ages of 17 and 45. The peace strength of the army is about 35,000. There is a small navy. The currency unit is the gold escudo of 100 centavos.

Agriculture is backward. Forests cover over 4,000,000 acres, with pine, oak, cork, chestnut, and Pyrenean oak trees. The vine is generally cultivated, and wine the most important product. In the mountainous regions rye is grown and sheep and goats reared; in the N., maize and cattle are raised; in the S., wheat and swine, large herds of pigs fattening in the oak forests. Olive trees cover nearly 1,000,000 acres; figs, tomatoes, onions, known as Spanish, potatoes, oranges, nuts, etc., are grown; silkworms and bees are reared. Oxen are used for agricultural work and transport. Fish abound, and sardines and oysters are exported.

Cotton spinning and weaving have been firmly established; porcelain tiles, called azulejos, are made; there are large cooperages, and articles of cork are largely exported.

During the Great War, of 65,000 officers and men sent to France, 1,860 were killed and about 12,000 were wounded or missing. Some 35,000 European Portuguese troops and upwards of 100,000 native askaris took part in the war in Angola and in the fighting for German E. Africa. The Peace Conference on Sept. 3, 1919, allotted to Portugal the territory S. of the Korumu, formerly part of German E. Africa. See Spain, map.

PORTUGUESE MAN OF WAR. Popular name for the genus Physalia of the Siphonophora, a group of jelly fish. In this group the animals occur in stocks or colonies. In Physalia the individual members are attached



Portuguese Man of War, showing air-filled float which enables the jelly fish to sail before the wind

to a large float filled with air, which is supposed to hear some resemblance to an ancient man of war. The colony is found floating on the surface of the water in the S. seas. Some of the dependent polyps are provided with mouths and act as feeders to the colony; others are reproductive, and the rest are provided with stings capable of injuring anyone handling them.

PORTUMNA. Town of Galway, Irish Free State. It is 39 m. from Galway and near the head of Lough Derg. The castle was a seat

of the marquess of Clanricarde, from whom it passed to Viscount Lascelles. In 1922 it was burned down. Pop. 892.

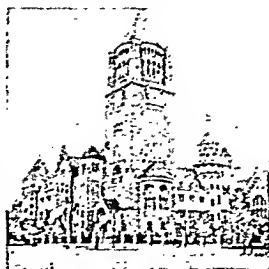
PORT WINE. Red, rich, strong wine grown near the mouth of the Douro, Portugal, and named from Oporto. The wine-growing region, Alto Douro, lies mainly on the S. bank of the river, 60 m. E. of Oporto. The grapes, carefully gathered, are foot-pressed. Before fermentation is complete, about five parts of alcohol are added to 100 of wine; after the first racking more spirit, generally brandy, is put in the wine, and this is again repeated before shipping. Port wine thus contains from 17 to 25 p.c. of alcohol, the average amount varying from 18 to 21 p.c. Port contains from 7 to 15 p.c. of sugar and a fair amount of tannin. Some white port is also manufactured.

Port-wine Mark. Mark present on the skin at birth, due to dilatation of the blood-vessels of the skin.

POSEIDON. In Greek mythology, son of Cronos and Rhea, and god of the sea. For conspiring against his brother Zeus he had to work for a period for Laomedon, king of Troy, for whom he constructed the famous walls of Troy; but when he claimed the reward promised, Laomedon refused to make good his word. Poseidon accordingly sent a sea-monster, which ravaged the country and exacted a tribute of maidens until killed by Hercules. The palace of Poseidon was supposed to lie at the bottom of the sea. The symbol of his powers was a trident, and the Isthmian Games were held in his honour. His wife was Amphitrite (q.v.), and the Romans identified him with Neptune.

POSEN OR POZNAN.

City of Poland. It stands on the Warthe, here crossed by five bridges, 158 m. from Berlin. Its nucleus is the old Polish city, where at one time the kings lived. Near is the district of Wilhelmstadt, built by the Prussians when they acquired Posen in 1792, and around both are modern suburbs. Of the churches the chief is the cathedral. Scenar buildings include the town hall, the palace built in the 20th century for the German emperor, and several museums and libraries. There is a large



Posen. The palace built, 1905-10, as a residence for the German emperor

university. Posen has a trade along the river and many prosperous industries. It was returned to Poland in 1919. Pop. 226,800.

Before 1918 there was a province of Prussia called Posen, this being practically the same as the existing county.

POSITIVISM (Lat. positivus, laid down). Term applied to the philosophic system of Auguste Comte (q.v.). It only recognizes facts or laws established by scientific methods and unaffected by metaphysical or theological considerations. Facts are the phenomena manifested to us by the senses, beyond which nothing exists; laws are the relations of certain facts to other facts. Philosophy investigates the relations of the general laws of each particular science; the object of its search is not the absolute, the causes and principles of things; its only concern is the relative. Regarded as a religious system, Positivism is the worship of humanity regarded as a whole and single being. Comte's leading idea was that all intellectual training should serve to cultivate the whole character.

POST IMPRESSIONISM. School of painting, originating in France with Paul Cézanne (q.v.). The Post Impressionist strives to record the emotional significance of things, instead of their mere outward appearance, which is the Impressionist's principal aim. (See Impressionism.) In practice this involves the substitution of deliberate design for passive naturalism, which in turn means a drastic simplification of natural forms.

POST OFFICE. Government department for receiving and transmitting letters, packages,



Poseidon. Greek god of the sea. From a statue of the 4th century B.C. National Museum, Athens

telegrams and so on. The system, similar to-day in all civilized countries, has developed from the ancient employment of state carriers. In the U.K. in 1035 a service of messengers was set up to convey letters along eight main routes at a minimum charge of two-pence. In 1653 the posts were farmed to John Manley for £10,000 a year. Thirty years later a private penny post was established in London, but it was forfeited, and resumed as a branch of the official system, and exists to-day as the London postal district service. A statute of 1710 created a general post office for the three kingdoms and, in addition, for the colonies, the organization being under the control of the postmaster-general.

When post-boys were replaced by mail coaches, the service was completely remodelled. The first dispatch of mails by train was made in 1830, between Liverpool and Manchester. Rates were determined by distance till on Jan. 10, 1840, at the instigation of Mr. (afterwards Sir) Rowland Hill, a uniform penny postage became operative. Prepayment by means of postage stamps replaced the old system of collecting dues on delivery. Later devices include postal sorting-carriages on the railway, special mail trains, and the apparatus by which letters are delivered from and collected by expresses. The registration of packages containing valuables dates from 1792. Imperial penny postage was instituted in 1898 and penny postage between the U.K. and the U.S.A. in 1908. In 1918 the postage was increased to 1½d. for 4 ounces, and for postcards to 1d. In 1920 letters (up to 3 oz.) became 2d., and postcards 1½d. In 1928 the rates were reduced to 1½d. (2 oz.) and 1d. for letters and postcards respectively.

The postal money order business dates from 1792; postal orders from 1881; the savings bank from 1861; the parcel post from 1883; telegrams from 1870. There followed the telephone and more recently the wireless and air mail services, and the C.O.D. system. Other modern extensions of post office business are the issue of licences, the sale of

is grown largely for manufacture into starch, syrup, and potato spirit or ethyl alcohol.

POTCHEFSTROOM. Town of the Transvaal, S. Africa. It stands on the Mooi river, at an elevation of 4,436 ft., 88 m. by rly. S.W. of Johannesburg. The university college is a constituent college of the University of S. Africa. The town was founded by a band of wandering Boers under Potgieter in 1839, and was for some time before 1863 the capital of the little Boer republic. In the war of 1880-81 a small British force surrendered here to the Boers. Pop., whites, 9,336.

POTEEN or **POTHEEN** (Irish poitin, little pot). Whisky illicitly distilled by Irish peasantry. The making of poteen arose at the end of the 18th century owing to the government's refusal to license small stills in Ireland. Smuggling became so general that, in 1815, to discourage illicit distilleries, licences were granted to stills of only 40 gallons content. It is still occasionally made in remote parts.

POTENT. In heraldry, a fur represented by crutch-like figures of white and blue, placed in rows, the base of the white against the base of a blue. The variants are, counter-potent, in which the bases of one tincture are placed against bases of the same; and potent-counter-potent, in which the rows are so arranged that the base of a metal figure rests on the centre of a coloured crutch head, and so on alternately.

POTENTIAL. Broadly, a term meaning power to do work. A steam boiler under pressure, an elevated body of water, a cylinder of compressed gas or air, all have potential, whenever the necessary conditions are satisfied. The essential factor is always a difference.

In electricity, the term is used for the work done in charging a body with a positive charge taken from a body in which the electrical tension is zero. The earth itself has potential, but it is so little that it is regarded as nothing—zero potential. All practical purposes are served by regarding electric potential as pressure. Hence it is regarded as potential difference and commonly expressed by the letters P.D.; while another expression used for it is electromotive force (E.M.F.). It is measured in volts. *See* Electricity.

POTENTIOMETER. In electricity, an instrument for measuring or comparing the electromotive force (E.M.F.) of a cell, or of a current passing through a resistance. The potentiometer comprises a wire or coil of high resistance with sliders which enable it to be tapped at various points. The potential to be measured is compared with a potential of known value (e.g. that of a standard cell), and the unknown value found by calculation. The term is loosely applied to the apparatus, similar in principle, more correctly called a potential divider. It is used to vary the potential of a circuit.

POT HOLE. Hollow in a river bed which is deepened by the gyration of accumulated stones by the current. In a limestone region, after having drilled a pot hole, the water often reaches a marked plane of stratification, i.e. the division plane between two beds or strata of rock, and along this it dissolves the rock, in course of time producing a cave. Such limestone pot holes become shafts or swallow holes, down which the river disappears.

POTOMAC. River of the U.S.A. It is formed by the junction of two branches about 14 m. below Cumberland in Maryland. The main river follows a general S.E. course of 365 m. and enters Chesapeake Bay by an estuary from 2 m. to 7 m. broad, and nearly 80 m. long. It forms a cataract about 35 ft. high, 15 m. above Washington, near which city it becomes navigable. There was much fighting around the Potomac river during the American Civil War.

POTOMAO GROUP. Series of deposits of the Lower Cretaceous and Jurassic period, found in N. America. Rocks of this group consist chiefly of sands, gravels, and clays and are a source of glass sand and iron ores. They are typical in New Jersey up the Mississippi valley to Tennessee, etc.

POTOSÍ. Mountain, dept., and town of Bolivia. The mt. is 15,400 ft. high, and is the site of one of the richest silver mines known. It is now worked for tin. The dept. occupies the S.W. of the country and adjoins Chile on the W and Argentina on the S. Its area is 45,031 sq. m. Pop. 529,259.

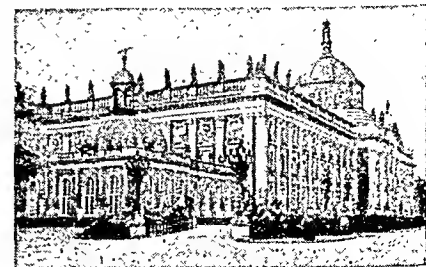
The town of Potosí, one of the highest inhabited places in the world, stands some 13,000 ft. above the sea on the side of the mt.; much of it is in ruins, having been, in part, deserted. It contains a large granite-built cathedral. Pop. 34,083. *See* Bolivia.

POT-POURRI (Fr. rotten pot). French translation of olla podrida the name of a Spanish dish

made up of different kinds of meat and vegetables. It has come to be used for any composition, literary or musical, put together without regard to order. The name is also in common use for a mixture of dried rose petals, lavender, and spico kept for its fragrance in china jars.

POTSDAM. Town of Prussia. It stands on an island in the Havel, 16 m. from Berlin. Around are a number of lakes formed by the Havel. It is chiefly known for its palaces until 1918 the residences of the Hohenzollern family. Outside the town, in a large park, is the palace of Sans Souci built by Frederick the Great, who also laid out the park in the French style; in it are an orangery and a model of a Pompeian villa. The Brandenburg Gate resembles a Roman triumphal arch. Pop. 64,203. *See* illus. below.

POTSHERD. Fragment of an earthenware pot, or any broken piece of earthenware. In archaeological exploration such sherds are of great importance, often enabling the successive layers in ancient settlements to be identified. Mounds may exhibit neolithic sherds found at the base and Arab pottery on the surface.



Potsdam. The New Palace, built 1763-69, by Frederick the Great. *See* above



Post Office. Headquarters of the British postal service, St. Martin's-le-Grand, London

national health insurance stamps and war saving certificates, and the distribution of old age and other pensions and allowances. In 1928 the Post Office ceased to conduct the business of life insurance. In Dec., 1928, the Canadian Government restored the penny post from Canada to all parts of the Empire.

The headquarters of the British postal service are at St. Martin's-le-Grand in central London. The staff numbers upwards of 230,000. The receipts in 1928-9 were £65,360,000 and the expenditure £57,314,000. The head is the postmaster general, who is sometimes a member of the Cabinet.

POTASSIUM. One of the alkaline metals. Its chemical symbol is K (Arabic, Kali); atomic weight, 39.1; atomic number 19; specific gravity, 0.87; melting point, 62° C; in colour, silver white with a touch of violet and a brilliant metallic lustre. Being lighter than water, it will float on its surface, but it instantly decomposes the water with which it is in contact owing to its great affinity for oxygen. It is the metallic base of potash.

Potassium was first isolated by Sir Humphry Davy in 1807. It does not occur native in the crust of the earth, but is very widely distributed, as a constituent of feldspar and mica, and thus of all granite rocks; the mineral sylvin or silvite is a chlorite, leucite a silicate, of potassium; nitre or saltpetre is crude nitrate of potassium; it is found as carbonate mostly in the ashes of all plants, particularly in those of seaweeds; carnallite, the mineral of the potash formations of Prussia, consists of from 16 p.c. to 27 p.c. of potassium chloride.

Potassium is a powerful chemical reagent in analytical work. It has no direct metallurgical uses, but is largely used in the art of electro-plating. Caustic potash, or potassium hydroxide, prepared by the interaction of potassium carbonate and milk of lime, rapidly destroys both animal and vegetable substances with which it is brought into contact. Caustic potash is employed for making soft soap. Potassium bromide and the iodide of potassium are much used in medicine. Potassium chlorate is used as an oxidising agent, and for many purposes in industrial chemistry.

POTATO (*Solanum tuberosum*). Tuberos rooted perennial plant of the order Solanaceae. A native of S. America, it is said to have been introduced from Peru into Europe by Spaniards early in the 16th century and into Britain by Sir Walter Raleigh about 1585. There have been over one thousand different varieties of potatoes, but, owing to their susceptibility to the attacks of a mould-like fungus (potato disease), relatively few sorts are of cultural worth or marketable. Apart from its culinary use, the potato

The largest heap known is Monte Testaccio, in Rome, 1,000 paces round by 115 ft. high, comprising fragments of imported jars, and proving an extensive trade with Spain and Africa. In Anglo-Saxon graves potsherds were intentionally thrown upon the body, a superstition mentioned in Shakespeare's Hamlet.

POTTER, PAUL (1625-54). Dutch painter. Born at Enkhuysen, he was a pupil of his father, Pieter, at Amsterdam, and of Jakob de Wit at Haarlem. He painted landscapes with horses or cattle, generally on rather a small scale; but his famous hull, now at the Mauritshuis, at The Hague, is nearly life-size. He died in Amsterdam.

POTTERIES, THE. District in N. Staffordshire, including the former county borough of Hanley, the former bors. of Stoke-upon-Trent, Burslem, and Longton, the former urban dists. of Tunstall and Fenton, and several parishes formerly in adjoining rural dists., all of which were united, March 31, 1910, to form the county bor. (now city) of Stoke-upon-Trent. The Potteries is the principal centre in Great Britain for the manufacture of earthenware, china, etc., and measures some 9 m. in length by 3 m. in breadth. Here is the N. Staffs. coalfield. See Stoke-upon-Trent; Tunstall.

POTTER'S BAR. District of Middlesex. On the Great North Road, 13 m. from London and 3 m. N. of Barnet (q.v.), on the L.N.E. Rly., it is under the control of the South Mimms rural district council. Here, on Oct. 1, 1916, a Zeppelin was brought down in flames by Lieut. W. J. Tempest, D.S.O.

POTTERY. The making of earthenware and the objects so made. Fashioned out of the moist plastic earths called clays, with or without other materials, it is hardened by air-drying or by firing. Fired pottery becomes stone-like, and furnishes some of the most imperishable relics of early culture.



The fabrics were built up with the free hand by adding consecutive pieces of ribbons of clay. The fashioning of vessels on

rounded pebbles or pivoted disks enabled the potters to turn the fabrics towards them as they proceeded. This culminated in the potter's wheel, perhaps in early dynastic Egypt, where also the open hearth was replaced by the pot-oven or kiln. Simple methods of decoration, by finger-marks, incised lines, and smears of ochre, were followed by the admixture of sand, powdered sherds, and other materials, to avert cracking.



Pottery: two stages in manufacture. 1. Turning on lathe to complete the shape. 2. Decorating a vase before glazing.

The roughened surfaces encouraged the use of slip, thin fluid clay applied before baking. This in later ages was supplemented by various processes of burning, varnishing, enamelling, and glazing.

The Greeks held the potter's art in high esteem. Their skill undoubtedly came from Egypt, and vases of good form and workmanship date from 900 B.C. Three distinct styles exist, primitive, geometric, and archaic, and the fine vase period follows, which extended over 400 years from the 7th to the 3rd centuries B.C. Roman ware divides itself into several classes, Samian, Grey, and Upchurch wares, beside the coarse native pottery made where suitable clay was found.

From the East enamelled earthenware was introduced into Europe, mainly through such intercourse as that between the Moors and Spain. Moorish potters established themselves in Malaga and Valencia, and the art spread thence to Majorca and Sicily. Many Italian cities became famous for ceramic productions, e.g. Gubbio, Faenza, from which comes the name faience, Siena, Urbino, and Pesaro. Delft in Holland made a ware which may be regarded as a compromise between Italian majolica and Chinese porcelain.

The early English potters of the 16th and 17th centuries devoted themselves to the production of ware of a homely character. Josiah Wedgwood (1730-1795) did more to raise the quality of English ware than any other maker. Deriving his artistic inspiration from the antique, he produced beautiful shapes, improved existing materials, and by long and energetic research discovered new mixtures. Side by side with the growth of earthenware was that of the pottery called stoneware, so named from its excessive hardness. It came to Britain from the Low Countries and Germany, the first English factory being established at Fulham by John Dwight in 1611. Fine salt-glazed stoneware was made at Burslem, where pieces were produced in 1690.

PORCELAIN. As earthenware and faience developed in the West, so porcelain more especially occupied the Oriental potters. The Chinese were the real inventors of porcelain, perfection being attained during the Ming dynasty, 1368-1644. Early specimens were exported to every civilized country, and found their way into Europe, which resulted in the manufacture of porcelain by potters in almost every Western country. France preceded Germany in the production of porcelain, soft paste only being made up to 1768, when the true clay was discovered. True porcelain, made as the Chinese wares, was a distinction long left to Dresden.

In England, Chelsea porcelain stands first in point of time, the earliest known pieces being dated 1745. London also made porcelain at Bow, the industry there making great progress under the proprietorship of William Duesbury, who also purchased the Chelsea works. In

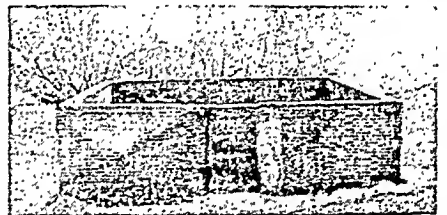
1755 William Cookworthy discovered the true kaolin or china clay in Cornwall, which was extensively used at Worcester.

During the whole of the 19th century pottery manufacture increased in every country: the introduction of machinery added tremendously to the output, and many new processes were invented. Sevres and Dresden have both carried on to the present day, and so also have the Wedgwood and the Worcester factories.

POTTON. Town of Bedfordshire. It is 11 m. from Bedford, on the L.M.S. Rly. The church of S. Mary has a Norman font. The industries include engineering and the making of leather, parchment, and beer. Pop. 2,087.

POULTON-LE-FYLDE. Market town and urban dist. of Lancashire. It stands on the river Wyre, 3 m. from Blackpool, and is served by the L.M.S. Rly. It has an interesting church, S. Chad's, and a market cross. Market day, Mon. Pop. 2,732.

POULTRY. General term for domesticated fowls, ducks, geese, and turkeys. The utility breeds of poultry may be roughly divided into three classes. These are general purpose breeds that combine table with fair laying qualities, laying breeds, and table breeds. In the first named class are Langshans, Orpingtons, Plymouth Rocks, Rhode Island Reds, and Wyandottes; in the second, Leghorns, Minorcas, Andalusians, and Anconas; and in the third, Dorkings, Indian Game, and some of the French varieties or



Pound. Enclosure for straying animals on Hampstead Heath, London. See below

crosses of these with other breeds. Ducks, although aquatic in habit, will thrive almost anywhere, and ponds are by no means indispensable to their well-being. Geese thrive in almost any situation, and so do guinea-fowl, but turkeys require careful handling, as they are very susceptible to climatic conditions. See Duck; Goose; Incubator; Turkey; and under the headings of the individual breeds of fowl.

The Poultry Club is the ruling body of the British poultry industry. It was founded in 1867. The club quarters are at 3, Ludgate Broadway, London, E.C.4.

POUND. Unit of weight. The English unit of weight is the pound avoirdupois of 7,000 grains divided into 16 ounces. It was made the legal unit of weight in 1855. The pound troy consists of 5,760 grains, and is the measure used for gold and silver.

POUND. British monetary unit, in full the pound sterling. It was originally a weight of silver, i.e. 5,760 grains of a certain standard of fineness. In 1816 the silver standard was abolished, and replaced by a gold one, the gold sovereign or pound sterling becoming the unit. Its weight was fixed at 123.274 grains, and its fineness at 22 carats.

POUND (A.S. pund, enclosure) Enclosure erected by legal authority, in which cattle distrained for rent, or caught straying and doing damage on land belonging to another than their owner, or straying on the highway, can be confined pending payment. Pounds are either overt, i.e. open to the sky, or covert, roofed in. See illus. above.

POUNDS, JOHN (1766-1839). British philanthropist. Born at Portsmouth, June 17, 1766, he became interested in poor children,

teaching them reading and arithmetic, together with the rudiments of useful knowledge, and thus originating the movement for the institution of ragged schools. After his death, Jan. 1, 1839, memorial schools were established in several towns.

POUSSIN, NICHOLAS (1594–1665). French painter. Born at Villers, near Les Andelys, Normandy, he studied under Quentin Varin, and at Paris. In 1624 Poussin made his way to Rome, where he obtained the patronage of Cardinal Barberini. Painting historical pictures and landscapes in the classical style, he rapidly achieved fame. From 1640 to 1643 he was in Paris, but he had returned to Rome when he died, Nov. 19, 1665. There are fine specimens of his work in the National Gallery, London, at Dulwich, and in the Louvre.

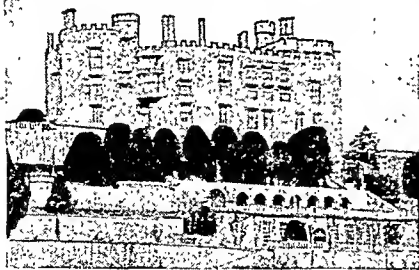
His brother-in-law, whose real name was Gaspard Dughet, but who called himself Poussin, was a painter who excelled in landscapes, particularly those with stormy effects.

POUT (*Gadus luscus*). Marine fish of the cod family. Nearly related to the whiting, from which, however, it differs in the possession of a thin barbel and deeper body, it occurs round the W. shores of Europe, and attains a weight of 5 lb. It is used to some extent for the table.

POWER OF ATTORNEY. Authority given by one person to another to act on his behalf. In all English-speaking countries it is common, when a man is going abroad for some time, for him to execute a deed appointing someone to act as his attorney, or agent, in his absence. A power may be general, or it may contain limitations of the agent's authority.

POWERSCOURT. Town of co. Wicklow, Irish Free State. It stands on the Dargle, 3 m. from Bray. From it the family of Wingfield takes the title of viscount, a creation of 1743. Powerscourt Castle is a fine granite building standing in a large park and surrounded by magnificent mountain scenery.

POWIS, EARL OF. British title borne since 1804 by the family of Clive, later Herbert. The earls are descended from Robert Clive



Powis Castle, Montgomeryshire. The castle and hanging gardens from across the lower lawn
By courtesy of Country Life, Ltd.

(q.v.), whose son Edward was created Baron Powis, and in 1804 was raised to the rank of an earl. His son Edward, the 2nd earl, took the name of Herbert instead of Clive, and from him the present earl is descended. His estates are mainly in the counties of Shropshire and Montgomery, and his residence is Powis Castle, Welshpool, the seat of the Herberts since Elizabethan times. Pron. Po-is.

POY. Pseudonym of the British cartoonist, Percy Hutton Fearon. Born in Shanghai, Sept. 6, 1874, he studied art at New York and at Herkomer's school at Bushey. His

first cartoons appeared in the London journal, *Judy*, and later he was on the staff of several papers in Manchester. In July, 1913, he joined *The Evening News* (London), in which he created a number of popular pictorial figures, including John Citizen and Dilly and Dally.

POYNINGS, SIR EDWARD (1459–1521). Lord Deputy of Ireland. Born in Southwark, he supported Buckingham's rebellion in 1483, but on its failure escaped into Brittany. There he joined Henry, earl of Richmond, and with that prince he landed at Milford Haven, Aug. 7, 1485. He was appointed lord deputy of Ireland in 1494, and in that year enacted the statute, associated with his name, by which no measures might be introduced into the Irish Parliament without the previous sanction of the English king and his privy council; also that all existing English laws should be deemed to be in force in Ireland. Poyning's Law was not repealed until 1782.

POYNTER, SIR EDWARD JOHN (1836–1919). British painter. Born March 20, 1836, he studied art in England and in Paris. In 1869 he was elected A.R.A., becoming R.A. in 1876, and succeeding Millais as president in 1896. In 1871 he was appointed the first Slade professor at University College, London, and from 1871–76 was director of art and principal of the training schools at South Kensington. From 1894–1905 he was director of the National Gallery. In addition to painting classic genre and portraits in oil and water colours, he designed mural decorations at S. Kensington and mosaics in the Houses of Parliament. He resigned the presidency of the R.A., and died July 26, 1919, having been a baronet since 1902.



Sir Edward Poynter, British painter
Russell

POZIÈRES. Village of France. It stands 4½ m. E. of Albert, on rising ground which in the Great War gave the Germans valuable observation in the Somme battle area. It was stormed by the British 48th and 1st Australian divisions, July 23–25, 1916. Lost in the spring of 1918, its ruins were recovered by the British, Aug. 24, 1918. A cross on the ruins of the village commemorates the Australians. In 1930 a British memorial was unveiled here. See Somme.

POZZUOLI (Gr. Dicacarehia; Lat. Puteoli). Seaport of Italy. It stands on a promontory in the gulf of Pozzuoli, an inlet of the bay of Naples, 8 m. by rly. W. of Naples. The surrounding districts were crowded with the residences of wealthy Romans. Its mineral baths, used by the Romans, are still frequented.

In the vicinity are temples, tombs, baths, cisterns, the Serapeum or Temple of Serapis, and an amphitheatre. Pop. 20,304.

PRADO. Short name for the great art gallery at Madrid, the Real Museo de Pintura del Prado. It is the most important of Spanish art collections. The Spanish school is

represented from first to last, and there is a fine collection of Flemish and Italian paintings.

PRAEFECT (Lat. praefectus, set over). Title held by various officials appointed by superior authority, not chosen by the people, in the Roman constitution. Such were the praefectus urbi, or deputy governor of the city; the military and naval praefects; and the praefect of Egypt. See Praefect.

PRAENESTE. Ancient city of Latium, now represented by Palestrina (q.v.). It lay about 22 m. E. of Rome, on the borders of the country of the Aequi, and was traditionally believed to have been founded by Caeculus, son of Vulcan. It became a favourite resort. The Temple of Fortune was famed for its oracle. Archaeological discoveries include the Roman calendar, known as the Fasti Praenestini, and the Fibula Praenestina, a gold brooch inscribed with Latin of probably the 6th century B.C. See Phoenicia.



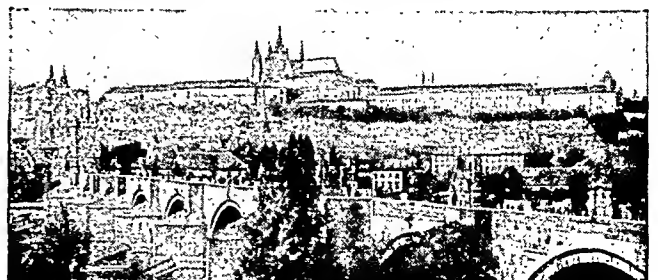
Praetorian Guard, from a bas relief
Louvre, Paris

PRAETOR. Second in dignity among the magistrates of the Roman republic, the consuls being first. The duties of the praetor urbanus were chiefly legal. There were also praetores militares charged with the administration of provinces. The praetors were preceded by lictors.

The Praetorian Guard was the term given to the household troops of the Roman Empire.

PRAGMATISM. Philosophical term of American origin, the idea of which was due to C. S. Pierce, and the first use of the word to William James. It signifies an empiricism which considers the practical value, the consequences and bearing upon human interests of an assertion or conception, to be the criterion of its truth. See James, W.

PRAGUE (Ger. Prag; Czech, Praha). Capital of Czechoslovakia. Situated on the Moldau (Vltava), the city has spread on to the neighbouring heights. On the left bank of the river is the Hradčany, the castle of the former kings of Bohemia. The old town on the right bank contains the Grosser Ring, the chief square, where are the fine town hall, the Kinsky Palace, and the old Hussite church, the Tyn Church. The cathedral was begun in 1344. There are two universities. The city is an important rly. centre, while the lower Moldau and the Elbe give routes for river traffic to Hamburg. Breweries, textile factories, iron foundries, and machine shops are among the industrial establishments. Pop. 676,663. See Moldau.



Prague, Czechoslovakia. The Charles Bridge across the Moldau, looking towards Hradčany, the castle of the former kings of Bohemia, now the residence of the President of the republic. In the centre is seen the cathedral of S. Vitus

The battle of Prague was fought May 6, 1757, during the Seven Years' War. Frederick the Great marched on the city, which was defended by about 75,000 Austrians. After a fierce fight the Prussians defeated their foes, who retired into Prague, which was then besieged and finally taken by Frederick.

PRAIRIE DOG OR **PRAIRIE MARMOT** (*Cynomys ludovicianus*). Rodent found in N. America and allied to the squirrel. There are three or four other species, all of which live in burrows. They are about a foot long. They construct mounds before their homes, which they use as watch-towers.

PRAIRIE HEN (*Tympanuchus americanus*). Bird allied to the grouse, native of N. America from the valley of the Mississippi to Ontario. The flesh is esteemed as food. About 19 ins. long, it is brown above, streaked with black and buff; the under-side pale brown, with the transverse marks white. In the breeding season males assemble at day-break in their "scratching places" and go through a performance of display in which low tooting and booming sounds are produced.

PRĀKRIT (Skt. natural, common). General name for the popular languages of India as opposed to the classical Sanskrit (q.v.). Until about A.D. 1000 the Prakrits were divided into four chief dialects which are the source of all the modern vernaculars of India. The chief source for the knowledge of early Prakrit is the Indian dramas, in which it is used by characters of lower rank.

PRASEODYMIUM. Rare earth metal of the cerium group. Its chemical symbol is Pr; atomic weight, 140.92; atomic number, 59; specific gravity, 6.475; melting point, 940 C°. See Neodymium.

PRAWN (Leander serratus). Stalk-eyed crustacean of the family Palaemonidae, common on the British coasts, particularly where there are submerged rocks in shallow water. About four inches long, it is clad in a translucent, jointed shell of greenish grey, which turns red when the prawn is cooked. There are two pairs of antennae. The first two pairs of legs are armed with pincers. The prawn swims by means of the six pairs of swimming feet under the hind body. It feeds upon the small green seaweeds and crustaceans. Prawns are caught in small ring-nets and in wicker traps. See illus. below.

PRAXITELES (fl. 360-340 B.C.). Greek sculptor. He worked at Athens, which was probably his birthplace. The only authentic work by him known to exist is the group of Hermes and Dionysus, discovered 1877, with the base and signature intact, among the ruins at Olympia; this is now in the local museum. There are, however, numerous copies of the Aphrodite of Cos and Aphrodite of Knidos, Sleeping Satyr, Apollo the Python-slayer, and other statues. Pron. Praxitel-eez.

PRAYER. Term used to denote a request made by an inferior to his superior and more particularly a request made by man to the supernatural being or beings who form the object of his worship. In the lowest forms of religion prayer is associated with the use of spells and charms.

A praying mat is used by Mahomedans. This is marked with a nick, the point of which is turned towards Mecca.



Prawn. Crustacean common around the British coast. See above

PRAYER BOOK. Authorised service book of the Church of England. Other churches in communion with it, such as the Church of Ireland, the Episcopal Church of Scotland, and the American Church, have service books which differ from the Anglican Prayer Book.



Prairie Dog. N. American burrowing rodent, allied to the squirrel
W. S. Berridge, F.Z.S.

worship in the English language. It did not go far enough in the direction of innovation to satisfy the more extreme reformers, such as Ridley and Hooper, and in 1552 the second Prayer Book was authorised, which went a long way to meet their demands, and represents the nearest approach made by the Church of England to assimilation with the services of the reformed churches abroad.

The accession of Elizabeth saw another revision of the Prayer Book, 1559, which was on the whole a return towards the position of the first Prayer Book. Under Elizabeth the Prayer Book assumed substantially the form which it still retains, and subsequent alterations have been of minor importance.

In 1927 the Prayer Book, as revised by the bishops, was accepted by the two convocations and by the Church Assembly. It was then submitted to Parliament, where it was rejected on Dec. 15 by the House of Commons. Further alterations were then made, but the Commons on June 14, 1928, again refused to accept it. The chief objection to the changes was that, especially in the communion service, they weakened the Protestant character of the book. In Canada and the United States the prayer books used by the Anglican communions have been revised.

PRAYING WHEEL. Symbolical instrument used by Buddhists of Tibet in religious exercises. It consists of a cylinder around which are wound paper bands inscribed with repetitions of the sacred mantra, om mani padme hum—Oh, the Jewel in the Lotus—a form of adoration of the Buddha. The cylinders are turned by hand, or by the agency of wind, water, or fire. The paper used is so thin, and so closely printed are the symbols, that a praying wheel 8 ft. in height may contain many more than a million repetitions of the mantra.

PREACHING (Lat. praedicare, to proclaim). Public oral appeal on behalf of a religious belief, i.e. the delivery of a sermon. It is intended to convert, or exhort, occupies an important place in the history of Christianity, and is also practised in other religions.

The disciples of Jesus Christ, notably S. Paul, preached a great deal, as did some of the fathers of the Church. The next group of great preachers were the missionaries who, from the monasteries of Ireland and Scotland, carried the Christian faith over Europe. The

Reformation gave an added importance to preaching. It was a feature of the religious revival of the 18th century, as of all religious revivals, Wesley and Whitefield being among the best known of many popular preachers. In the 19th century Spurgeon exercised a remarkable sway by his preaching, while Robertson and Liddon, with their more intellectual appeal, were equally, though less apparently, successful. Of many other great 19th century preachers may be mentioned Newman and Lacordaire.

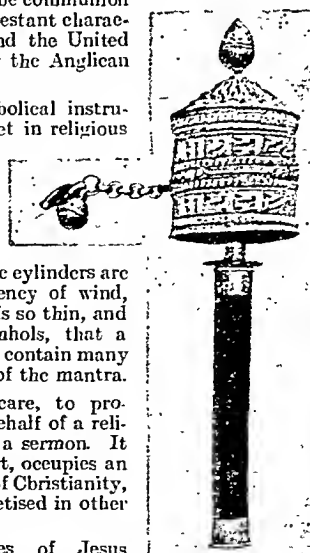
PREBEND (late Lat. praebenda, soldier's rations). Ecclesiastical term for the food, clothing, etc., provided for a clergyman or monk, as distinct from the income of a benefice. Later it came to be used for an endowment provided for the support of a priest attached to the staff of a cathedral, the holder being known as a prebendary. The office of prebendary is now usually a sinecure conferred on a clergyman as a mark of distinction.

PRECENTOR (late Lat. praecinere, to sing before). Leader of the singers in the rendering of the musical portion of the service in a cathedral. The precentor is usually the chief of the minor canons, and is responsible for all the musical arrangements of the services. The word was specially used of the leader of praise in Scottish churches before the introduction of organs.

PRECESSION. In astronomy, term used in connexion with the movements of the equinoctial points. The slow retrograde movement of these points, known as the precession of the equinoxes, is due to the unequal gravitational pull of the sun and moon on the earth's equatorial protuberance. The equinoctial points take 25,800 years to make a complete circuit in the heavens, and the effect of the movement is to shorten the time between successive equinoxes and to alter the signs of the zodiac relative to those of the ecliptic. See Ecliptic; Equinox; Zodiac.

PREDESTINATION. Term used in Christian theology to denote the act of God in determining the destiny of nations and individuals. The term is used in several senses to denote (1) the eternal purpose of God, which was predetermined before the creation of the world; (2) the selection of certain nations or individuals for the performance of specific tasks in connexion with the realization of this purpose; (3) the selection of individuals as subjects for the exercise of Divine grace and the inheritance of eternal life. It is in the third sense that the term is most commonly used. The doctrine was first formulated by S. Augustine (q.v.). See Calvin.

PREFECT (Lat. praefectus, set in command). Generally, one who is in a position of authority over others. In ancient Rome the praefect (q.v.) was an important official. In France the prefect (préfet) is the chief administrative officer of each department, and the prefect of police is the chief of the police of Paris and the Seine dept. In English public schools, and other schools on their model, the prefects are senior boys responsible for maintaining discipline in a house or dormitory, and often have powers of inflicting punishment for various minor offences; the title monitor is also used in this connexion.



Praying-Wheel of Hindu silver ware, Tibetan type

PREGNANCY. Period from the time of conception to the birth of the child. The average duration of this period is 280 days, reckoned from the first day of the last menstrual period. Cessation of the monthly flow is the first indication that a woman is pregnant. Morning sickness usually occurs in the second month and becomes more marked in the third, fourth, and fifth months. Changes in the breast may be noticed from the second month. Quickening, the term applied to the sensation experienced by the mother when she first feels the movements of the foetus within her, generally occurs in the fourth or fifth month. During the fifth month the foetal heart beat becomes audible through the stethoscope.

Pregnancy is a natural condition, and the expectant mother should not regard herself as an invalid. Any form of excess or undue exertion should be avoided, but otherwise she should depart as little as possible from a normal well-regulated life.

PREMIER (Lat. *primus*, first). Anything that is first or chief, e.g. the premier duke. It is used for the chief minister of the crown, who is also known as the prime minister (q.v.).

PREMIUM (Lat. *prae*, above; *emere*, to buy). Literally a prize or reward. As a financial term it implies something above the nominal or fixed price. Thus, shares at a premium are worth more than their nominal value. The opposite of premium in this sense is discount. The term is used also for the periodical payments to an insurance company in respect of a policy of insurance.

A premium bond is a bond issued for public subscription on terms involving an element of chance as well as investment considerations.

PREMONSTRATENSIA or **NORBERTINES**. Order of regular canons founded in 1120 by S. Norbert of Cleeves, afterwards archbishop of Magdeburg. The order follows the Augustinian rule, and was powerful in N. Europe before the Reformation. It has been revived at Storrington, Sussex, and in France.

PRE-RAPHAELITES. Name given to a group of British artists who formed themselves into a "pre-Raphaelite Brotherhood" in 1848. W. Holman Hunt originated the movement and the brotherhood included D. G. Rossetti, J. E. Millais, F. G. Stephens, T. Woolner, W. H. Deverell, and J. Collinson. Launched as a revolt against the academic standard of the day, the movement aimed primarily at a return to the simpler and more natural ideals of art before Raphael. Its expression was complex; realism (Hunt and Millais) and romanticism (Rossetti) declared themselves as two different tendencies from the first; but brilliant colour and a minutely detailed technique were common to all the principal exponents.

PREROGATIVE (Lat. *praerogare*, to ask before). Exclusive right or privilege belonging to a person or body in virtue of his or its status or character. At the present day the royal prerogative includes such powers as those of declaring war, summoning and dismissing parliament, creating peers, and pardoning offenders. In practice the royal prerogative is exercised only through the privy council or the cabinet.

The prerogative court was an ecclesiastical court for testamentary cases. Prerogative writs are in the nature of commands for the better execution of justice or the protection of the liberty of the subject, issued by order of the judges of the court of the king's bench. See *Divine Right*; *Writ*.

PRESBYOPIA (Gr. *presbys*, old man; *ops*, eye). Diminution in the power of focusing the eye, owing to advancing age. Near objects must be held increasingly farther from the eye in order to be seen distinctly. The

condition is corrected by wearing convex glasses. See *Eye*; *Sight*.

PRESBYTERIANISM. Organization of the Christian Church on the basis of rule by presbyters (Gr. *presbyteros*, elder). These are chosen by the congregations and set apart for their twofold duties of teaching and ruling, the former office, which includes the administration of the sacraments, corresponding to the clerical, the latter to the lay element in other churches. The presbyters are ordained for life, are equal in rank, electing temporary moderators or presidents from their own number in the presbyteries, synods, and general assemblies.

Thus the three notes of Presbyterianism are: the parity of the clergy, in distinction from the episcopal system or the papal; the right of the congregation to govern itself by means of office-bearers chosen from its own members—a primitive right which was only taken gradually from the early Church; and the avoidance of congregational individualism by means of administrative unity secured in the church courts, where the presbyters sit as representatives of their various congregations. In 1929 the various Presbyterian Churches in Scotland were united.

In 1929 the membership of the Presbyterian Church throughout the world was estimated at 11,453,000 and the congregations at 49,229. See *Reunion*; *Scotland*, *Church of*.

PRESBYTERY (Gr. *presbyteros*, elder). Word originally applied to that part of a church which was occupied by the clergy. It was also used to signify the body of the clergy taken together. In this sense it occurs in the Greek N.T. (1 Tim. 4, 14), and is used in the Presbyterian denominations for the official assemblies. The word is often used—especially in the Roman Church—for the residence of the priests.

PRESCOT. Urban dist. and market town of Lancashire. It is 7 m. from Liverpool, on the L.M.S. Rly. The chief manufactures are matches, electric cables, and pottery. Near is Knowsley (q.v.). Market days, Tues. and Sat. Pop. 9,043.

PRESCOTT, WILLIAM HICKLING (1796–1859). American historian. Born May 4, 1796, he graduated at Harvard and studied law. Defective eyesight caused him to abandon this profession, and he turned to literary work. By using readers and secretaries, and aided also by a writing frame made for the blind, he produced works of high value on the early history of America and the contemporary period in Spain. His books include *The Reign of Ferdinand and Isabella*, 1838; *The Conquest of Mexico*, 1843; *The Conquest of Peru*, 1847; and *The Reign of Philip II* (unfinished). He died in New York, Jan. 27, 1859.



W. H. Prescott,
American historian

PRESCRIPTION (Lat. *praescribere*, to write beforehand). In English law, title by long use and enjoyment. By an act of 1833, uninterrupted possession for 12 years gives a good prescriptive title to land. A right of light enjoyed for 20 years is indefeasible, unless it can be shown that it was enjoyed not as of right, but under a written agreement or permission. A right of common is *prima facie* established by 30 years' enjoyment; and absolutely by 60 years'; again in the absence of a written agreement. An easement (e.g. a right of way, or of water, or of support) is *prima facie* conferred by 20, and absolutely by 40, years' uninterrupted use, and in the absence of a written agreement.

PRESIDENCY. Former administrative division of British India. The name was originally given to those units of the East India Company's territory administered by the presidents of the company's factories. The original three were Bengal, Madras, and Bombay.

The term presidency bank was given to three banks, one in each of the three presidencies. The bank of Bengal was founded in 1806, the bank of Bombay in 1840, and the bank of Madras in 1868. In 1920 they were amalgamated as the Imperial Bank of India.

PRESIDENT (Lat. *praesidere*, to sit in front of). Word which denotes headship, with many applications. It is the recognized title of the head of a republic. The head of a college in a university is sometimes called the president. The term is also used of the head of a society, and in the U.S.A. of the chairman of a company. The word occurs in the title of ministerial and legal officers, e.g. lord president of the council.

PRESIDENT, H.M.S. Vessel of the British navy. The first President was a vessel of 42 guns built under the Commonwealth. In 1887 a sloop of 1,140 tons was launched at Sheerness and named President. With her engines removed, she was stationed between Blackfriars Bridge and the Temple Stairs, and served as a stationary drillship for the London division of the Royal Naval Volunteer Reserve until 1922. In that year a larger training ship, the *Saxifrage*, which was renamed the President, took her place.

PRESS. Comprehensive term for the output of the printing press. It is especially applied to newspapers and periodicals.

The Press Association is an organization of British provincial newspaper proprietors. Founded in 1868, on cooperative principles, to collect and distribute news, it now serves nearly 150 provincial journals in addition to London newspapers. The office is at Byron House, Fleet Street, London, E.C.4.

PRESS BUREAU. British Government department. It was founded Aug. 7, 1914, on the outbreak of the Great War, to issue official information to the newspapers, and to censor matter submitted to it for publication by the press. It came to an end April 30, 1919. See *Newspaper*.

Pressburg. German name of the city of Czechoslovakia known officially as Bratislava (q.v.).

PRESS GANG. Name given to the bodies of men who formerly carried out the impressment of those liable to forced service in the army or navy. Although impressment could be either for land or sea service, it came to be used almost entirely to secure recruits for the navy. Edward III set up a commission of impressment, 1355, and the methods of carrying out the press were regulated by statute in 1378, and on other occasions. In 1641 Parliament declared the system illegal, but it was used later for land service by Cromwell, and in the 18th century for the navy.

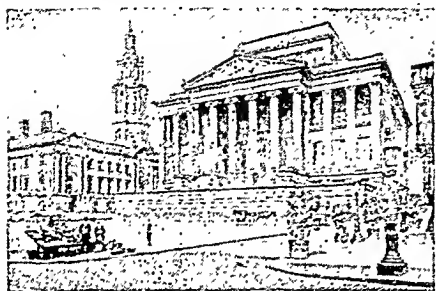
PRESTATYN. Urban dist. of Flintshire, Wales. It stands on the coast and is 4 m. from Rhyl, on the L.M.S. Rly. There are ruins of a castle. Near are lead mines. Pop. 4,085.

PRESTEIGN. Urban dist. and market town of Radnorshire, Wales, also the county town. It stands on the Lugg, with a station on the G.W. Rly. The 15th century church has interesting tapestry and old glass mosaic. The Warden is a hill converted into a public recreation ground; the castle formerly stood here. Market day, third Fri. in the month. Pop. 1,172.

PRESTER JOHN. Priest king in the 12th century. The centre of many legends and theories, by name Jorkhan or Coirkhan,

and a native of Asiatic Tartary, he is said to have been converted from Buddhism to Christianity. When he became king he assumed the title of Prester, i.e. presbyter or elder, vanquished the rulers of Media and Persia, and attempted to march to the aid of the Church at Jerusalem, but got no farther than the Tigris. He was succeeded by his son or brother, who also called himself Prester John, and who was killed by Jenghiz Khan.

PRESTON. County borough, market town, and seaport of Lancashire. It stands near the head of the Ribble estuary, 31 m. from Manchester, on the L.M.S. Rly. The buildings include the town hall, art gallery, and sessions house. Preston is a centre of the cotton



Preston, Lancashire. The Art Gallery, showing the Sessions House on the left

industry; it has also engineering and machinery works, iron and brass foundries, and ship-building yards. The municipality owns the docks and harbour. An ancient festival known as the Preston guild is held every 20 years. Preston sends two members to Parliament. Market days, Mon., Wed., and Sat. Pop. 119,900.

Preston was the scene of a battle fought between the Scots in the interests of Charles I and the Parliamentarians under Cromwell, Aug. 17, 1648, in which Cromwell was the victor. There was some fighting at Preston during the Jacobite invasion in 1715.

Preston North End is the name of an English professional Association football club. It was one of the original twelve clubs to form the Football League, founded in 1888. Preston won the Football Association cup in 1889. Its ground is at Deepdale Road, Preston.

PRESTONPANS. Burgh of Haddingtonshire, Scotland. It stands on the Firth of Forth, 9 m. from Edinburgh, on the L.N.E. Rly. Pop. 2,021.

The battle of Prestonpans was fought between the royal troops and the Jacobites Sept. 21, 1745. The former, under Sir John Cope, landed at Dunbar and marched towards Edinburgh, where the Jacobite army met and routed them. The Jacobites called the engagement Gladsmuir.

PRESTWICH. Urban dist. of Lancashire. It is 4 m. from Manchester, on the L.M.S. Rly. Near is Heaton Park, once a seat of the earl of Wilton, and now the property of the city of Manchester. Pop. 18,750.

PRESTWICK. Burgh of Ayrshire. It stands on the Firth of Clyde, 2 m. from Ayr, on the L.M.S. Rly. It is chiefly known as a golfing centre. Pop. 8,516.

PRETENDER (Lat. *practendere*, to hold forward). One who makes a claim which is either false or not admitted. In a special sense the word is applied to the son and grandson of James II, referring to their claim to the throne of the United Kingdom. James Edward is known as the Old Pretender, and his son Charles Edward as the Young Pretender. See Charles Edward; Jacobites; James.

PRETORIA. City of the Transvaal, capital of the province and administrative capital of the Union of South Africa. It is 45 m. by rly. from Johannesburg, and is an important rly. junction. It stands on both

sides of the Apies river. at the foot of the Magaliesberg Mts. The centre of the town is Church Square, from which the main streets radiate. Among many notable buildings are the Union Government Buildings, built 1910-13, the Transvaal Government Buildings and the law courts. The university college is a constituent college of the University of South Africa. Parks include Burger's and Prince's Parks, the latter named in memory of Prince Christian Victor. There is a branch of the royal mint here. Pretoria was founded by M. W. Pretorius, first president of the S. African Republic. Pop. 54,326 whites.

PRETORIUS, ANDRIES WILHELMUS JACOBUS (1799-1853). Boer leader. One of the leaders of the Great Trek, he reached Natal in 1838, where he was elected commandant-general, leading his commando against the Zulus, 1839, and the British, 1842. In 1852 he concluded the convention with Britain whereby the latter recognized the independence of the Transvaal. Pretorius died July 23, 1853.

His son, Marthinus Wessels Pretorius (1819-1901) succeeded to the command on his father's death. In 1856 he was elected president of the newly founded South African Republic, but resigned in 1871. In 1880 he was associated with Kruger and Joubert in the Boer revolt against Britain. He died May 19, 1901.



Marthinus Pretorius, Boer leader

PRÉVOST, EUGÈNE MARCEL (b. 1862). French novelist. He was born in Paris, May 1 1862, and worked as engineer in a Lille factory until 1891, by which time he had already attained considerable popularity with his stories. His novels include *Le Scorpion*, 1887; *Les Demi-Vierges*, 1894; *L'Heureux Ménage*, 1901; *Monsieur et Madame Moloch*, 1906; *Lettres à Françoise Mariée*, 1908; *Les Anges gardiens*, 1913; and *L'Homme Vierge*, 1929. Some of the above have been dramatised. In 1909 Prévost was elected to the French Academy. Pron. Pray-vô.

PRIAM. In Greek mythology, king of Troy, son of Laomedon and father of Hector, Paris, Polyxena, Cassandra, and many other children. He was popularly credited with fifty sons and daughters. He was the only one of the sons of Laomedon that was spared when Hercules came to take vengeance for being cheated out of his reward for saving

Hesione from the sea-monster. At the taking of Troy, Priam was killed by Neoptolemus, the son of Achilles.

PRIĀPUS. In Greek mythology, god of the reproductive powers of nature and patron of gardens. He was the son of Dionysus and Aphrodite, and was especially worshipped at Lampsacus on the Hellespont.

PRIĀLOF ISLANDS. Group of small islands in Bering Sea, about 200 m. S.W. of the Alaskan mainland. They are a centre of the fur-seal fisheries. The islands were first visited in 1786 by Gerasim PriĀlof. They were acquired by the U.S.A. from Russia in 1867. See Bering Sea.



Prickly Pear. Cactus of tropical America. *Opuntia microdasys*

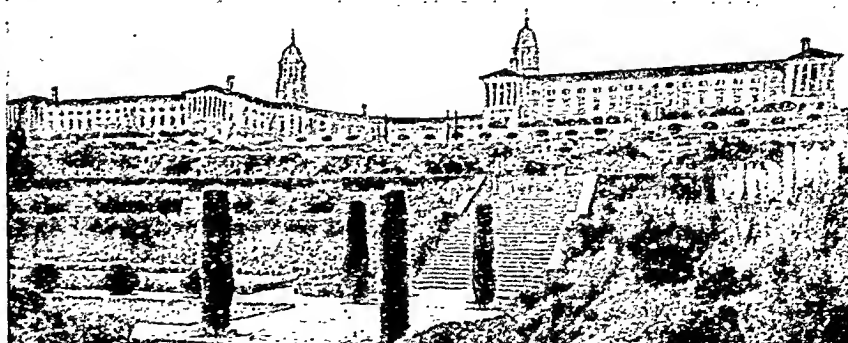
PRICKLY HEATH (*Perrettia mucronata*) Evergreen shrub of the order Ericaceae. A native of Patagonia, it has stiff oval leaves with toothed edges, and urn-shaped, nodding white flowers. The fruit is a globular berry, about the size of a pea.

PRICKLY PEAR (*Opuntia vulgaris*). Succulent shrub of the order Cactaceae, a native of the warmer parts of America. A jointed, prostrate, or spreading plant, the light green joints are of oval shape, and the leaves reduced to minute scales. The spines

are small, solitary, or absent, though there are clusters of barbed bristles. The flowers are pale yellow, and are succeeded by smooth, pulpy, edible, egg-shaped fruits. Other species are *O. tuna*, with larger fruit (West Indies); and *O. ficus-indica* (Mexico).

PRIDE, THOMAS (d. 1658). English regicide. On the outbreak of the Civil War he joined the Parliamentary army, and in 1645 distinguished himself in command of a regiment at the battle of Naseby. On Dec. 6, 1648, to prevent the Parliament from coming to an agreement with the king, Colonel Pride, with a body of soldiers, forcibly prevented about 140 members from taking their seats, arresting over 40 of them. This episode is known as Pride's Purge. He was a commissioner at the trial of Charles I, and signed the death warrant. He died Oct. 23, 1658.

PRIEST. Word used for a member of the Christian ministry in the Roman Catholic, Greek, Orthodox Greek, and Anglican churches. Derived from the Greek word *presbyteros*, it was used in this sense very early in the history of the Church. It is used, too, in the Old Testament for those who ministered in holy things to the Jews and to officials attached to other religions, e.g. the priests of Baal. Those who looked after the altars in Greece and other countries were also called priests.



Pretoria. Union Buildings, erected 1910-13, seat of the Government of the Union of South Africa
Courtesy of the South African Railways

In the Church of Rome the priests constitute the second order of the ministry. They must be ordained, and, with the bishops and others of high rank in the hierarchy, they alone have the right to administer the sacraments. In the Church of England and other Anglican churches the priests also constitute the second order, deacons being the first. To be a priest a man must be at least 24 years of age and have served for a year or more as a deacon. Here, too, the sacraments can only be lawfully administered by one who has been ordained priest. See Church of England; Deacon.

PRIESTLEY, JOHN BOYNTON (b. 1894). British writer. Born in Bradford, the son of a schoolmaster, he went to Trinity Hall, Cambridge. He served through the Great War, and then began to make a reputation as an essayist and reviewer. In 1926 he wrote a life of George Meredith and in 1927 one of T. L. Peacock, both for the English men of letters series, and in 1929 a brilliant long novel, 'The Good Companions'. His other books include 'The English Comic Characters', 1925; 'The English Novel, 1927'; 'Apes and Angels', 1928, and 'English Humour', 1928. With Hugh Walpole he wrote 'Farthing Hall', and in 1930 appeared 'Angel Pavement'.



J. B. Priestley,
British writer
Harrods

PRIESTLEY, JOSEPH (1733-1804). British chemist. Born at Birstall, Yorkshire, March 13, 1733, he entered the Nonconformist ministry. In 1767 he published his 'History of Electricity', and he carried out many brilliant experiments with electricity from 1761-70. He turned his attention to chemistry in 1770; in 1772 he read his paper on 'Different Kinds of Air', in which he announced the discovery of hydrochloric acid and nitric oxide. His discovery of oxygen, one of the landmarks in the history of chemistry, followed in 1774. Sulphur dioxide and other gases were discovered by Priestley, who died Feb. 6, 1804.



Joseph Priestley,
British chemist

PRIMATE (Lat. primus, first). In England, term applied to the archbishops of Canterbury and York. It means the bishop highest in rank in a nation or province. In the Roman Catholic church primates are bishops to whose see the dignity of vicar of the Holy See was formerly attached. See Archbishop.

PRIMATES. Highest order of the mammalia. It is divided into two sections, the Lemuroidea, which include the lemurs and their relatives, and the Anthroipoidea, which include the monkeys, apes, and man.

Excepting man, all the members of this order are inhabitants of tropical and sub-tropical countries, and are arboreal in habit. They are essentially climbing animals, and the four feet are adapted for grasping. Except in man, the great toe is opposable to the others, but the thumb is often imperfectly so. The upper halves of the limbs are free from the body and not embedded in it. The fingers and toes bear a nail instead of a claw. The eyes are brought round to the front of the head. The mammae are normally only two in number. In the higher primates a more or less erect attitude has been adopted, and in man the brain has been greatly developed. The dentition differs essentially from that of both carnivores and herbivores, and is indicative of a mixed diet. See Animal; Mammal; Zoology.

PRIME MINISTER. Head of the British Government and the principal adviser of the sovereign, called also the premier. He must be a member of Parliament and enjoy the confidence of a majority of the House of Commons. Under the party system he is also the leader of his own party. His powers are enormous, including the selection of the cabinet ministers. Sir R. Walpole is generally regarded as the first prime minister. In 1930 it was proposed to raise the salary of the prime minister from £5,000 to £7,000 a year. See Baldwin, S.; MacDonald, J. R.; etc.

PRIMITIVE METHODISTS. Body of Methodists. They arose as the result of difference of opinion on the subject of camp meetings. Early in the 19th century these were introduced into Staffordshire by an American named Lorenzo Dow. The first camp meeting was held in 1807 and was speedily followed by others. The new connexion grew with remarkable rapidity, and within 30 years numbered 36,000 adherents. In 1852 the connexion was reorganized and was for some years administered in seven districts; but in 1902 it consolidated its system of government. In 1928 the conference meeting in Leicester decided in favour of union with the other Methodist bodies. See Methodism.

PRIMO DE RIVERA, MIGUEL (1870-1930). Spanish soldier and statesman, known also as Marquess du Estella. Born at Jerez de la Frontera, Jan. 8, 1870, he was trained for the army. In 1897 he had a command in the Philippines. Governor of Cadiz in 1915, he became general. In 1921 he was chosen a senator, and about the same time was made captain-general of Catalonia. To remedy the prevailing discontent due to the financial and economic state of the country he headed the malecontents in a bold step. His manifesto of Sept. 12, 1923, was followed by the suspension of the constitution. He became head of a directory of naval and military officers which lasted until 1925, when Primo introduced a civilian administration with himself as premier. He resigned in 1930, and died suddenly March 16, 1930.



Primo de Rivera,
Spanish dictator

PRIMOGENITURE (Lat. primus, first; genitus, begotten). Seniority by birth, and, by extension, the system under which the eldest son succeeded to the entire real estate of a father dying intestate, to the exclusion of all the other children. It was abolished in England by the Law of Property Act of 1925.

PRIMROSE (*Primula vulgaris*). Perennial woodland herb of the order Primulaceae. It is a native of Europe and N. Africa, and grows

profusely in Britain. From the thick, fleshy root-stock the wrinkled and almost stalkless leaves rise in a circle. The pale yellow funnel-shaped flowers are of two forms: in one form there is a long style bringing the round stigma to the mouth of the flower-tube, with the stamens half-way down; and in the other the style reaches only half-way up, whilst the stamens partly fill the mouth. This secures cross-pollination.

PRIMROSE LEAGUE. British political organization. It was formed by a number of Conservatives in 1883, their aim being to spread the principles of Conservatism among the working classes, and the name was that of the favourite flower of the earl of Beaconsfield. Officials are known as knights and dames, and the members are grouped in habitations. The

league is open to both men and women. The headquarters are at 64, Victoria Street, London, S.W.1.

Primrose day is the name given to April 19, the day of Lord Beaconsfield's death. Primroses are worn and his statue in Parliament Square is decorated.



Primula. A greenhouse favourite, *P. obovata*

PRIMULA

(Lat. primus, first). Genus comprising about 150 perennial herbs of the natural order Primulaceae. They are chiefly natives of hilly districts in the N. temperate regions. Five species are natives of Britain: primrose, cowslip, oxlip, bird's eye, and Scottish primrose (*P. Scotica*).

Primus (Lat. first). Term applied to the bishop elected to preside over the synod of the Episcopal Church of Scotland.

PRINCE (Lat. princeps, first). Title of dignity. In Great Britain it and its feminine form princess are only used for the children of the sovereign and the grandsons and granddaughters in the male line. In Italy, Belgium, and other monarchical countries the use is similar. In Germany, before the war, the titles were used for all members of ruling families, and in addition, as in Austria and Russia, distinguished men, as, for example, Metternich and Bismarck, were raised to the rank of prince.

PRINCE OF WALES. This title was given in 1301 to the son of Edward I, and has since been borne by the sovereign's eldest son. The plume, commonly called the Prince of Wales's feathers, is really the badge of the heir apparent, in whom it is vested, whether created prince of Wales or not. This badge consists of a plume of three ostrich feathers enfiled by a coronet of alternate fleurs-de-lys and crosses patée or, and the motto is Ich Dien (German I serve). See Edward.

PRINCE ALBERT. City of Saskatchewan, Canada. On the North Saskatchewan river, it is an important junction on the Canadian National Railways. The industries include flour mills and lumbering. Pop. 7,873.

Prince Albert National Park is 70 miles from the town. It covers an area of 1,400 sq. m., and was opened in 1928.

PRINCE EDWARD ISLAND. Island in the gulf of St. Lawrence, the smallest province of the Dominion of Canada. Northumberland Strait divides it from the mainland. Its area is 2,184 sq. m. Charlottetown, the capital, and Summerside are the chief towns. Originally known as Ile St. Jean, the island was annexed to Nova Scotia in 1763, and in 1773 became a separate colony. It received its present name out of compliment to Edward, duke of Kent, who was then governor-general of Canada. It joined the Dominion in 1873. Pop. 88,615.



Primrose. *Primula vulgaris*, flowering in British woods in spring

PRINCE RUPERT. Port and town of British Columbia. On Kaien Island, at the mouth of the Skeena river, 550 m. N. of Vancouver, it is a terminus of the C.N. Rlys., and has a fine harbour. Coal and oil are found in the neighbourhood, and there are salmon, halibut, and herring fisheries. The chief buildings are the city hall, churches, etc., and there is plentiful electric power. Pop. 7,500.

PRINCES RISBOROUGH. Town of Buckinghamshire. It is 7 m. from Aylesbury, near the Chiltern Hills, with a station on the L.N.E. Rly. The name is due to the fact that the Black Prince had a palace here. About 3½ m. N. of Princes Risborough is Chequers (q.v.). Pop. 2,438.

PRINCETOWN. Village of Devonshire. It stands on the W. side of Dartmoor, 22 m. from Plymouth, with a station on the G.W. Rly. The existence of the place is due to Dartmoor prison, but it is also a centre for visitors to the moor. See Dartmoor.

PRINSEP, VALENTINE CAMERON (1838-1904) British artist. Born at Calcutta, Feb. 4, 1838, he studied under G. F. Watts in London and Gleyre in Paris, where he was a fellow student with Du Maurier. One of the Oxford Union frescoists, he drifted away from pre-Raphaelitism under Leighton's influence. He became A.R.A. in 1878, and R.A. in 1894. He died Nov. 11, 1904. See illus. p. 412.

PRINT. Impression on paper from an engraving on metal, stone, or wood. The chief varieties of engraving are etchings, mezzotints, line engravings, stipple, aquatint, woodcuts, and lithographs. Prints from engravings are classified as states, and vary with the condition of the engraving at the time of printing. Changes constituting a fresh state may take place in the subject, in the handling, or in the lettering, or in all three. Only prints, however, from a completed engraving are recognized as states. See Engraving.

PRINTING. Though prints from wooden blocks may have appeared in Europe in the 6th century from China, it was not until the 15th century that the idea of duplicating copies by a process of inking the raised surface of a block was adopted in the West. It was an easy transition from cutting designs to cutting lettering also. The next step was the making of movable wooden types. Movable metal types cast from moulds appeared about 1450.

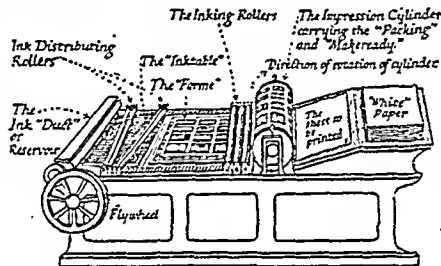
Early types were based on the written script. Nothing finer has been produced than the Gothic type "42 line" Bible of 1455, attributed to Gutenberg of Mainz. Of the great early printers, Peter Schöffer, also of Mainz, to whom the invention of cast type is attributed, Sweynheim and Pannartz, of Subiaco, Adolf Ruseh, who first used Roman type, and the Frenchman, Nicolas Jensen, working at Venice about 1470, all deserve special recognition. William Caxton began work, near Westminster Abbey, in 1476-77 (see illus. p. 261).

PRINTING PROCESSES. There are three processes, determined by the nature of the printing surface. (1) Relief or surface printing, for which a general term is found in letterpress printing. In this the printing surface is raised. (2) The intaglio process. (3) Flat surface, planographic, or lithographic printing. An account of Intaglio and Lithography is given in articles bearing these titles.

In letterpress printing the main material consists of movable types or blocks or plates, or stereotype and electrotypes moulded from

them. The arrangement of type and the general preparation of the printing surface before it goes to the machine is included under the heading of composition. In the case of hand-set work, the compositor picks the letters one by one from his cases, and sets them upside down from left to right in a metal case, called a composing stick, gauged to the width of the panel of type decided on. The type is transferred to trays of metal, called galleys. When the matter in galley form has been corrected, the compositor makes up the pages. He arranges or "imposes" them together with any engraved plates or blocks of pictures, or plans which are to be used, in an iron frame or "forme" (see illus. p. 614) in such a way that they fold in proper sequence, with accurate allotment of marginal spaces. With regard to machine composition, the types of machine in most common use are the linotype, the intertype, and the monotype; the first two are generally used for newspapers, the latter mainly for book and magazine printing. (See Linotype: Intertype; Monotype.)

MACHINING. Little change took place in the printing press between the 15th and the 19th centuries. Its chief features are a flat bed on which the forme is placed face upwards, and a folding leaf, holding the paper to be printed. Pressure is applied by lever and screw to a platen of metal, which forces the paper on to



Printing. Diagram showing the main features of a single cylinder flat-bed press

the inked type, and so transfers the impression. In the modern platen machine the paper is placed on the platen and carried to and from the type forme, which is in a vertical position.

The first radical mechanical innovation affecting speed and cheapness was that of König (q.v.) in 1811. In König's machine the paper is applied to the forme by means of a revolving cylinder, which holds the paper in its passage across the type. This is the normal type of machine employed for the production of book printing to-day. The introduction of the impression cylinder developed the factor of speed. The modern newspaper press proceeds with that development by the addition of a type or, rather, plate-carrying cylinder.

A newspaper press is a composite machine with many replicas of the type matter, and cutting and folding apparatus, producing completed copies at several delivery points at from 60,000 copies per hour. The paper spool unwinds itself into the machine, the paper passing between the type and impression cylinders (each pair printing one side of the paper), and so through into the cutting and folding gear. See Half-tone; Intaglio.

PRINTING HOUSE SQUARE. London square. It is at the E. end of Printing House Lane, Water Lane, Blackfriars, E.C. Since 1788 occupied by the printing office of The Times, its name is due to the existence here from the time of Charles II, to Feb., 1770, of the king's printers.

PRIOR. Ecclesiastical title for the member of a monastic establishment second in rank to the abbot, or, where there is no abbot, the head of the establishment. The prior is generally entrusted with the discipline of the monks, management of property, etc. See Monasticism.

PRIOR, MATTHEW (1664-1721). English poet and diplomatist. Born probably at Wimborne, Dorset, July 21, 1664, he was brought



Matthew Prior.
English poet

to London and sent to Westminster School and Cambridge. He spent the greater part of his life in the diplomatic service, at The Hague and in Paris. He was M.P. for East Grinstead Feb.-June, 1701, succeeded John Locke as commissioner of trade, 1700-7, and was commissioner of customs, 1711-14. At first an

adherent of the Whigs, he joined the Tories in 1702. In 1715-17 he was imprisoned in the Tower on a charge of treasonable intrigue in connexion with the treaty of Utrecht, familiarly known as Matt's Peace. Of his two longer works, *Alma*, or *the Progress of Mind*, modelled on *Hudibras*, is the more notable. He died Sept. 18, 1721.

PRISM. Semi-regular solid. The two faces or bases are equal polygons, and the lateral faces parallelograms. A right prism has the lateral faces perpendicular to the bases. If the bases are regular polygons, and the prism is also a right prism, it is called a regular prism. The prism used in optics is usually a triangular prism, i.e. its bases are triangles. See Field Glass and diagram p. 597.

PRISON. Place where persons are confined or restrained in their liberty. Prisons as places of detention are prehistoric, though prisons exclusively for the reception of criminals as apart from political prisoners are comparatively modern; the prison system of punishment is chiefly a product of the 19th century.

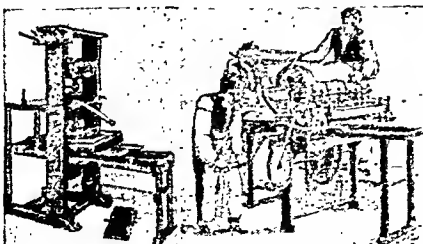
The first to call serious attention to the terrible conditions of the prisons in England and Wales was John Howard (1726-90), but though his *State of the Prisons in England* stirred public opinion, it was not till fifty years after his death that the first real steps in reform were taken. In 1839 a new era was inaugurated by a bill for advancing separate confinement of prisoners, and in 1842 Pentonville was finished, the first model prison where isolation was carried out in an extreme form. The aim of all modern prison reform is reform of the prisoner by methods of humanity, as opposed to methods of torture of either body or mind. See Bastille; Dartmoor; Millbank; Newgate; Pentonville; Tower of London, etc.; also Borstal System; Criminology; Reformatory.

PRISON COMMISSION. Department of the home office which looks after the convict prisons in England and Wales. It consists of a chairman and four paid commissioners, assisted by inspectors and other officials. In Scotland similar duties are performed by the Prison Commission, 11, Rutland Square, Edinburgh.

PRISONER'S FRIEND. At courts martial, this is a person, officially styled the friend of the accused, authorised to assist the accused in his defence. He may be a qualified legal adviser or any other person.

PRISONER OF WAR. Subject of a belligerent country detained for a period of war. In early times prisoners of war were regarded as the property of their captors, and as such were liable to slavery, or to ransom, and it was not until the 13th century that the exchange of prisoners began. During the 19th century the growth of humanitarian sentiment brought recognition that a prisoner had certain rights, and the Hague Convention of 1907 included detailed regulations designed to ameliorate life in internment camps.

A prisoner of war is bound to state his true name and rank, but cannot be compelled to give any further information to the enemy. If he attempts to escape, he may be shot down, but is not to be treated as a criminal.



Printing. 1. Wooden hand press, c. 1725, probably similar to Caxton's. 2. Hand power machine, c. 1820, showing beginning of rotary principle

1, Victoria & Albert Museum; 2, from a woodcut

PRITTLEWELL. Dist. of Southend-on-Sea. It lies to the N. of the borough proper, and has a station on the L.N.E.R. There is a fine 15th century church. The remains of the old priory are used as a museum. *See* Southend.

PRIVATEER. Armed vessel privately owned and furnished with letters of marque. These empowered it to attack the ships of any power with which its country was at war.

PRIVET (*Ligustrum vulgare*). Shrub of the order Oleaceae, native of Europe and N. Africa. It has opposite, oblong-lance-shaped leaves and small, funnel-shaped white flowers in abundant clusters. The fruit is a small, round, purple-black berry, which yields oil and a rose-coloured dye.

PRIVY COUNCIL. Originally the king's council, chosen and appointed by him and subject to his personal control. In the Middle



Privet. Leaves and berries of the shrub

1540 it possessed a regular staff of clerks and other officials, and from it most of the existing administrative system has been developed.

The tendency to increase the number of members of the council resulted in the formation of a smaller body which became the modern cabinet. Concurrently the privy council was gradually reduced to formal business. Technically, various ministries, such as the boards of trade and of education, are committees of the privy council, while the judicial committee of the privy council is the supreme court of appeal for the Dominions. Membership of the privy council is a distinction, carrying with it the style "right honourable." *See* Cabinet; Parliament.

PRIVY PURSE. Money granted to the king and queen from the civil list for their own personal expenditure. Under the king's direction the expenditure of this money is managed by the privy purse office, under the keeper. In 1910 the amount was fixed at £110,000 a year. *See* Civil List.

PRIVY SEAL. In the United Kingdom, a seal used by the sovereign. It is second in importance to the great seal, but is now rarely used. The keeper of this seal is known as the lord privy seal (q.v.) and is a cabinet minister.

PRIZE COURT. Court of law held in time of war. On the outbreak of a war involving hostilities at sea every country sets up a tribunal called a prize court, whose business it is to examine the validity of capture of ships and goods made at sea by the navy of its country. Such a court is really an international tribunal, and its decisions ought to be governed by international law. Each country, however, makes its own rules of procedure. *See* Blockade; International Law.

Prize money is the name given to the net proceeds of the sale of enemy property and contraband lawfully captured at sea. Prior to the outbreak of the Great War the distribution of prize money was confined to those ships actually making the capture. In Aug., 1914, this system was suspended, and later one was substituted for it under which the whole prize money proceeds are paid into a common fund, in which every officer and man participates.

PRIZE FIGHT. Term used for a pugilistic contest, fought with bare fists, for a money prize. Such are now forbidden by law in the United Kingdom and the U.S.A., and their place has been taken by contests in which boxing gloves are worn. *See* Boxing.

PROA (Malay prahw). Malaysian sailing boat. Both ends being built sharp, it can sail equally well in both directions, and it is fitted with an outrigger contrivance projecting a boat-like float to prevent capsizing. Rigged with large lateen-like sails, proas attain remarkably high speed.

PROBATE (Lat. probatum, something proved). Official proof of the legality of a will. In English law it is necessary for the will of a deceased person to be proved in the probate division of the high court of justice before it can be acted upon. Probate can be granted by any officer of inland revenue in cases where the personal estate does not exceed £300. When the will is admitted to probate the original will is filed in Somerset House, and is a public document which can be inspected by anybody on payment of a small fee. A copy is then made on parchment, which is called the probate copy, and it is this which is admitted everywhere as evidence of the will. *See* Administration, Letters of; Executor; Will.

PROBATION. System in vogue in criminal courts for releasing delinquents without punishment during good behaviour.

The term probationer is applied to one undergoing trial for membership of a Church or other religious community; or for admission to a profession, such as nursing. *See* Borstal System; Reformatory.

PROBOSCIS MONKEY (*Nasalis larvatus*). Species of monkey found only in Borneo. It is distinguished by its long and bulbous nose, which in the adult male hangs down and conceals most of the mouth. The monkey is about 30 ins. long in body, with a tail of about 26 ins. The hair is chestnut on the head and back, and yellow elsewhere. The face is naked, surrounded with a fringe of outstanding hair.

PROBUS, MARCUS AURELIUS. Roman emperor (A.D. 276-82). A native of Pannonia, he became Aurelian's most distinguished general. On the death of the emperor Tacitus he was proclaimed emperor by the armies of the east, where he was in chief command. He proved an excellent ruler, defeating the Germans, and restoring order in Egypt and Gaul. He was preparing an expedition against Persia when he was murdered.



Marcus Aurelius Probus, Roman Emperor From a coin

PROCESS. Term in English law denoting the various steps taken in legal proceedings, such as the issue of a writ of summons, the issue of a writ of execution, and the like. In Scots law process is a summary warrant for imprisonment issued on the application of the clerk of court against a party who refuses to return a process borrowed from the court.

PROCESS ENGRAVING. General term embodying all processes of photo-mechanical reproduction, i.e. making of printing surfaces, blocks, or mechanically-engraved plates by photographic agency. It supplanted the wood block engraver in the case of letterpress relief printing; by its means photogravure printing has become possible as produced to-day, and in the practice of lithography its adoption has resurrected a method of colour printing that began to show signs of obsolescence in favour of the first two. *See* Colour Printing; Half-tone; Intaglio; Lithography.

PROCONSUL. Magistrate of ancient Rome. He was invested with the power of a consul, and charged with the command of an army or the administration of a province. *See* Consul; Roman Empire.

PROCOPIUS. East Roman emperor, A.D. 365-6. Born in Cilicia, he was a kinsman of Julian the Apostate, who made him joint commander of the army in Mesopotamia. On the accession of Valens (364), Procopius, finding his life in danger, fled to Constantinople and, favoured by popular discontent, was proclaimed emperor. He was later beheaded.

PROCRUSTES (Gr. the stretcher). In Greek legend, the nickname of Polypemon, a robber of Attica, killed by Theseus. He boasted that he had a bed which fitted everyone, and made good his boast by stretching the limbs of those victims who were too short, and cutting them off in the case of those who were too long for the bed. Procrustes and his methods have become a proverbial expression for attempts to make everyone conform to one standard.

PROCTOR. One who manages the affairs of another. It is a contracted form of procurator. The king's proctor is an official



Procrustes Monkey of Borneo

entitled to intervene in a divorce or nullity suit where collusion or fraud is suspected. At Oxford and Cambridge the proctors are two university officials whose duties include that of maintaining discipline.

The representative of certain ecclesiastical bodies in convocation (q.v.) is called a proctor.

PROCURATION. Term for the providing of women for the purpose of illicit intercourse. In England, the Criminal Law Amendment Act of 1885 was directed mainly against the trading in women and girls disclosed by W. T. Stead's investigations. This statute imposes heavy penalties for procuring any girl or woman who is not of known immoral character, either to have illicit relations with any person, to become a prostitute, or to become an inmate of a house of ill-fame. The Act of 1885 was amended by the Criminal Law Amendment Act, 1912.

PROCURATOR (Lat. procurare, to take charge of). An authorised agent, especially one who conducts legal business for another, and is his accredited representative. It is the technical term for an attorney to conduct an action by law, and in Scotland is the usual designation of the legal representative of a litigant in the inferior courts. The faculty of procurators in Glasgow fixes the professional fees of procurators and undertakes the auditing of their accounts.

In Scottish law, procurator-fiscal is the title of the public prosecutor in the sheriff courts. He makes investigation of criminal charges, performs a coroner's duties by inquiring into causes of suspicious deaths, prosecutes cases indicted before the supreme court of judiciary, and is responsible to the sheriff and the lord advocate.

PROETUS. In Greek legend, the twin brother of Acrisius (q.v.). After a struggle he secured part of his kingdom of Argolis. His three daughters were driven mad by Dionysus or Hera. Perseus, to avenge Acrisius, turned Proetus into stone. Pron. Preetus.

PROFESSIONALISM. Term applied to the system under which exponents of games employ their skill as a means of livelihood. It is thus opposed to that displayed by the true amateur, who plays for love of the game or sport without thought of material recompense. There have been few civilizations or countries in which prowess at arms or in some form of sport could not obtain substantial reward.

The latter half of the 18th century in England marked the growth of rivalry and popular interest in sport and games, which has since developed to an amazing degree. Professional pugilists fought with bare knuckles in contests of endurance. Cricket was then on the road to becoming the national game, but, as in football, professional players were a later development. To-day the Rugby game is still largely confined to amateurs. In cricket amateurs hold their own, though many county teams contain a majority of professionals. See Amateur.

PROFIT SHARING. System of industrial management by which the persons engaged in a business or industry receive some proportion of its profit according to a pre-arranged scale. Most profit sharing schemes have grown from the idea that the profits of a business will be materially increased if the employees are given a direct interest in avoiding waste and in maintaining high standards of efficiency. In Great Britain profit sharing has taken its firmest hold in gas-making concerns. Systems of sharing vary widely, and among the difficulties that they have to face are the arrangements for meeting a debit balance on the year's trading, change of ownership of businesses, and problems of common management or co-partnership. See Co-partnership.

PROGRESSIVES. Name applied to one of the parties on the London County Council since its foundation in 1889. Composed of men holding advanced views, it was opposed by the Moderates, later the municipal reformers.

PROHIBITION. Movement for the prohibition of the manufacture and sale of alcoholic liquors for beverage purposes. It originated in the eastern United States, the first Prohibition Act being passed by the Maine state legislature in 1846.

In the early eighties the crusade was revived, and the prohibitionists made steady progress. The Anti-Saloon League, which was formed in 1898, disavowed any political purpose except the prohibition of the liquor traffic, and soon became the centre of activity throughout the Union. By 1917 twenty-seven states out of a total of forty-five—including the whole of the west except California, and nearly all the south—carried prohibitory laws.

In 1913 the reformers organized a committee of 1,000 to obtain a prohibition amendment to the constitution of the United States. The entry of America into the Great War further strengthened the hands of the prohibition party, and on Dec. 17, 1917, a joint resolution was carried through congress, by a vote of 282-128, for the submission of the amendment to the different states. This amendment, known subsequently as the "18th Amendment," declared:

"After one year from the ratification of this article the manufacture, sale, or transportation of intoxicating liquors within, the importation thereof into, or the exportation thereof from, the United States and all territory subject to the jurisdiction thereof for beverage purposes is hereby prohibited."

Eventually every state except three, Connecticut, New Jersey, and Rhode Island, carried the amendment, and President Wilson hastened it by the passage of a war measure prohibiting the sale of drink throughout the United States from July 1, 1919.

Nearly the whole of the Dominion of Canada adopted prohibition during or just after the war period. In a few years, however, it was abandoned in favour of a system of state control, and in 1929 this policy was in force in eight of the nine provinces, Prince Edward Island being the exception. Attempts to carry general prohibition in Australia have not been successful.

In Russia, in Sept., 1914, the sale of vodka and all other spirits was absolutely prohibited until the end of the war, and shortly afterwards the prohibition of the sale of vodka was made permanent throughout the Russian Empire. The Russian revolutionary government, under Kerensky, and also the Bolshevik government continued this policy. See Local Option.

PROJECTILE. Body which can be projected through air or space, and so can be used as a missile. The term is specially applied to those discharged from firearms. See Ammunition; Ballistics; Bullet; Shell.

PROLOGUE (Gr. pro, fore; logos, word). Preface or introduction, more especially one spoken before the commencement of a dramatic performance, either to indicate its nature or to commend it to the audience. The use of the prologue dates back to the classic dramatists, and continued fairly general with new pieces in the English theatre up to the 19th century. See Epilogue.

PROMETHEUS. In Greek mythology, originally a god of fire, later a Titan. The chief legend about him is that he stole fire from heaven for the use of mortals. For this he was chained by Zeus to a rock in Scythia, and every day an eagle consumed his liver, which grew again in the night. Prometheus suffered this torture until he was rescued by Hercules, who killed the eagle and released him from the rock. Pron. Pro-mec-the-wss.

PROMISSORY NOTE. "An unconditional promise in writing, made by one person to another, signed by the maker, engaging to pay on demand, or at a fixed or determinable future time, a sum certain in money, to or to the order of a specified person or to bearer." The person making the promise is the maker or drawer. The person to whom the promise is given is the payee or drawee.

If the payee sues on the note, the drawer can always defend on the ground that there has been no valuable consideration. But if the payee indorses the note to a third party, called indorsee, the latter can sue the drawer for the money without regard to the original want of consideration. See Bill of Exchange.

PRONG BUCK. N. American mammal. It resembles an antelope, but its

horns consist of bony cores supporting sheaths which are periodically shed and renewed. It is about 36 in. high at the shoulder, and the skin is handsomely coloured. It is only found in the western parts of the continent.

PROOF. In engraving and etching, an early impression on paper, or prints, from the plate or stone or wood block. Trial proofs are those printed by the engraver for his own use, as a test of the work. Artists' proofs, which come next, are signed by the artist or the engraver or both. See Print.

PROOF CORRECTION. In printing, term for the work involved in reading and correcting or altering a proof or impression of printed matter before it is cast or otherwise made ready in a technical sense for the press or printing machine. When the copy or MS. has been set up, an impression of the type is taken by means of a hand press. This impression is usually called a galley proof. While a copyholder reads the MS aloud the printers' reader, with the galley proof before him, corrects upon it the mistakes made by the compositor or linotype operator, by the use of such marks

as those indicated in the accompanying illustration. See Printing.

PROOF. Above, corrected proof; below, readers' signs and their meanings

as those indicated in the accompanying illustration. See Printing.

PROOF SPIRIT. Alcohol defined, in English law, as having a specific gravity of 12-13 at 51° F. Such proof spirit must contain 49.24 p.c. by weight, or 57.06 by volume of absolute alcohol. The expressions over proof and under proof are used in connexion with mixtures of alcohol and water. Thirty under proof means that 100 volumes of alcohol and water contain 70 volumes of proof spirit, while 30 over proof means that 100 volumes of spirit mixed with the proper quantity of water will yield 130 volumes of proof spirit. See Alcohol; Whisky.

PROPAGANDA (Lat. propagare, to multiply by layers). Literally, things to be propagated. Until the Great War this word was used mainly to denote the dissemination of religious tenets.

During the Great War there developed an intensive use of means to influence first neutral, and then enemy sentiment, and this was given the name of propaganda. At the beginning of 1918 Lloyd George developed this aspect of warfare by asking Lord Northcliffe to undertake the organization of propaganda in enemy countries, while Lord Beaverbrook was put at the head of the existing department which made its appeal to the neutral states. The headquarters of the former were at Crewe House, London, W.1.

PROPELLER. In aeronautics, strictly that type of airscrew which is attached to the rear of the body of any aircraft, and which propels the machine, as distinct from the tractor airscrew, which is attached in front, and draws the body after it. Colloquially the word is used for any type of airscrew.

PROPERTIUS, SEXTUS (c. 49-16 B.C.). Roman elegiac poet. He was born at Asisium (Assisi) and was educated and made his home in Rome, where he won the patronage of Maecenas and Augustus, and was a friend of Virgil and Ovid. The majority of the earlier poems deal with the relations of the poet with his mistress "Cynthia," but the subjects of the last book are chiefly drawn from Roman legend and history.



Prong Buck. Young specimen of the small North American mammal
W. S. Berridge, F.Z.S.

PROPORTIONAL REPRESENTATION. Term used for a method of electing representatives that aims at reproducing in the elected body the opinions of the electorate in their true proportions. It is worked best in constituencies each returning a number of members. The voter records his preference on the ballot paper and also marks a second name if he so desires. When the counting takes place, a quota of votes is fixed which a candidate must obtain to secure election. Most probably only one or two will succeed in securing election on the first count. To fill the list, therefore, a second process takes place. The papers of the successful candidates are examined for next preferences, and are sorted among the unelected candidates accordingly. When all surpluses have been dealt with, the candidate at the bottom of the poll is declared defeated and his votes are all transferred to the next preferences shown upon them. The process continues until the required number of candidates are left.

In the United Kingdom the Representation of the People Act of 1918, as first introduced, suggested it for large urban constituencies, but this the House of Commons refused to accept, and it was retained only for certain university constituencies. In Northern Ireland proportional representation was introduced in 1921, when the parliament was established, but it was abandoned in 1928. In the Church of England, under the Act of 1919, members of the Houses of Laity and Clergy are elected by this method. It is employed at elections in Germany.

PROROGATION. In parliamentary procedure, the interruption of a sitting of both Houses by royal authority, usually at the close of the session. After prorogation all bills automatically expire, and must be introduced again in the following session.

PROSE. Direct language composed as the vehicle of thought intended to be spoken. It is thus one of the two principal forms into which literature is divided, the other being verse. Its complete emancipation from the laws of metre that are the subject matter of prosody thus furnishes the capital distinction between prose and verse. Rhythm is an integral part of good prose, but if it is to fulfil its primary function the first three essentials of prose are directness, lucidity, and appropriateness of the language it employs.

PROSTATE GLAND. Organ which surrounds the neck of the bladder and first part of the urethra in the male. It is about one and a half inches across and contains a secretion which forms a constituent of the spermatic fluid. Prostatitis, acute inflammation of the prostate, is usually a result of gonorrhoea. Chronic prostatitis may follow.

PROSTITUTION (Lat. pro, before; statuere, to place). Promiscuous sexual intercourse for the sake of gain. The women who practise it, usually for a livelihood, are known as prostitutes. Prostitution has existed in every country and in every age, and all the efforts of Church and State to stamp it out have failed. To-day in the United Kingdom the law treats it as an offence against public order, but cases are extremely difficult to prove and it flourishes openly. In France and other countries prostitution is regulated with varying strictness. See Prostitution.

PROTAGORAS (490-415 B.C.). Greek philosopher and sophist. Born at Abdera in Thrace, he taught in Sicily and latterly at Athens, from which place he fled after conviction on a charge of atheism brought against him for opinions expressed in his treatise on theology. He was drowned at sea. Protagoras was the first to study and write on grammar. He is one of the chief interlocutors in Plato's Dialogue which bears his name.

PROTECTION. In economics, the policy of fostering home manufactures and produce by imposing taxes on the importation of goods from abroad. See Free Trade; Imports; Safeguarding; Tariff Reform.

PROTECTOR. In England a title bestowed on those, usually royal princes or leading noblemen, who acted as governors of the kingdom when the king was a minor or otherwise incapacitated from ruling. Thus the duke of Somerset was protector during the minority of Edward VI. Such protectors were appointed by the privy council. Cromwell's title of lord protector of the Commonwealth was given him in 1653.

PROTECTORATE. Word used in two distinct senses: (1) the authority exercised by a protector or quasi-dictator, with particular reference in English history to the regimes of Oliver and Richard Cromwell; (2) more generally, the protectorship of the weak, especially of less advanced races by a stronger race, and, hence, the territory thus occupied. The term was in frequent use during the latter half of the 19th century, when large tracts of Africa and Asia came under European influence. See Mandate; Zanzibar.

PROTEIN OR PROTEID. Complex organic compound containing carbon, hydrogen, oxygen, and nitrogen with a little sulphur. Proteins form an important part of all living organisms, and are the essential nitrogenous constituents of food. They include the albumen of white of egg, the globulin, fibrin, and albumen of blood, the ossein of bone, the gelatin and collagen of connective tissue, the casein of milk, and the creatin of meat. See Albumen; Globulin.

PROTESTANT EPISCOPAL CHURCH. Official and legal designation of the episcopal Church in America which is in communion with the see of Canterbury. Organized in 1789 as an independent religious denomination, the American Church had, in 1926, 7,299 churches and 1,859,086 members.

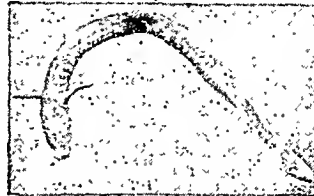
PROTESTANTISM. Religious doctrines or principles of protestants. The term arose from the protest lodged by Luther and his followers against the second diet of Spire in 1529, by which enactments were made which continued the protection and endowment of the "old church" in reformed Germany, while not tolerating Lutheranism in Roman Catholic states. The word came rapidly into more general use to describe the system separated from the Roman Church, and by degrees lost its original positive and evangelical character and became little more than an equivalent for the denial of Roman Catholicism.

The source of the separation lies in two main principles. Protestants and Romanists differ as to what is the rule of faith—that is, the standard or authority of Christian truth and practice. Both sides admit the authority of the Scriptures, but to Protestants this is supreme and sufficient, while to Romanists it may be added to by ecclesiastical tradition, and it is always to be accepted as interpreted by the Church. The other main source of divergence concerns the experience of religion. In the Romanist system the sacraments are the sole authorised means of saving grace, and they are authorised to be such only when administered by a validly qualified order of priests. Protestantism finds salvation through the direct and personal relationship of the soul and Christ, unconditioned by the necessity of sacramental and sacerdotal

means. Within the scope of these two great principles lie the rejection by Protestants of the infallibility of the pope and their profound disagreement with the doctrine of transubstantiation.

The aggregate number of persons throughout the world accepting the Reformed principles generally known as Protestantism is 206,900,000. See Church of England; Luther; Nonconformity; Reformation; Roman Catholic Church, etc.

PROTEUS (*Proteus anguinus*). Genus of amphibians, found only in subterranean waters in Dalmatia, Carinthia, and Carniola. It is eel-like in general appearance, 10 to 12 ins. in length, but has four very small and rudimentary limbs, and retains external gills throughout its life. The skin is smooth and flesh-coloured, and the eyes are beneath the skin. The animal is blind. Pron. Proteus.



Proteus. Blind amphibian of subterranean waters, showing the rudimentary limbs
W. S. Berryidge, F.Z.S.

PROTEUS. In Greek mythology, a sea deity, son of Poseidon or of Oceanus. He had the power to foretell the future, but, when consulted, was in the habit of assuming different and sometimes terrifying shapes. Those bold enough to seize him and keep a hold throughout all his changes of form would eventually succeed in getting him to speak. Proteus was supposed to live in Pharos, where he tended Poseidon's sea-monsters.

PROTOCOCCUS PLUVIALIS. Simple one-celled microscopic green plant of the order Protoococcolaceae, common in fresh water and abundant in all standing rain water. It is of spherical form, and of bright green tint with a spot of red—sometimes so greatly extended as to make the whole plant appear red. It multiplies by division into four or more swarmer-spores, each furnished with two motile cilia. They exist as dried-up resting spores on tree trunks and wooden fences, revivifying after rain. Red forms cause the phenomena red-snow and blood-rain.

PROTOCOL (Gr. protos, first; kolla, glue). Originally, a fly-leaf glued on to MSS. to show the writer's name; hence, the original draft of a deed or other document. In diplomacy the word signifies the rough draft of a transaction or the original copy of a treaty, etc.; more particularly it means a diplomatic convention which does not require formal ratification.

PROTOPLASM (Gr. protos, first; plasma, anything formed). Living substance constituting the cells of plants and animals. Physically speaking, protoplasm is a soft, colourless, viscid, transparent or translucent substance composed of two parts. There is a delicate threadlike network, the spongioplasm. It is contractile and elastic, and is often seen to be in very active movement. In among the meshes of this network is a clear, semi-fluid substance termed the hyaloplasm. From a chemical point of view, protoplasm is an exceedingly complicated substance. As long as it is living, there is a constant series of chemical changes going on within it. See Biology; Cell; Life.

PROTOZOA. Zoological term for the phylum of the animal kingdom which includes the lowest forms of all. They consist of single cells, or of colonies of single cells, each of which is capable of separate existence and of reproducing its kind. They are distinguished from all other animals by the two features that in the majority of cases the body consists of a single cell of protoplasm which cannot be differentiated into tissues, and that they reproduce by the whole animal breaking up

into germ cells. The protozoa may be described as specks of jelly, the largest of them being only just visible to the naked eye. A good example is seen in the amocba (q.v.), found in the mud of stagnant ponds.

PROUDHON, PIERRE JOSEPH (1809-65). French political philosopher. Born at Besançon, July 15, 1809, he worked as a printer until 1837, when he published his *Essai de Grammaire Générale*, a philological study. In 1840 appeared his *Qu'est ce que la Propriété?*—a strong attack on the principle of property. Subsequent works were his *Avertissement aux Propriétaires*, 1842; and *Contradictions Économiques*, 1846. In 1848 he was elected to the Assembly, edited the *Représentant du Peuple*, and was imprisoned, 1850. Prosecuted after publishing *De la Justice dans la Révolution et dans l'Église*, 1858, he lived in Belgium, 1858-63. He died Jan. 19, 1865. Proudhon is important as a forerunner of Marx.



P. J. Proudhon, French philosopher

PROUST, JOSEPH LOUIS (1754-1826). French chemist. Born at Angers, Sept. 26, 1754, he became chief pharmacist at the Salpêtrière, Paris. Afterwards he became director of the royal laboratory at Madrid, but was ruined by the Spanish war, the French destroying his laboratory and collections. He returned to France, 1806, later receiving a pension from Louis XVIII, was elected to the academy of science, 1816, and died at Angers, July 5, 1826. Proust discovered grape sugar, 1805, in various natural products, and was the first to demonstrate that the elements combine in a small number of fixed proportions.

PROUST, MARCEL (1871-1922). French author. The son of a doctor, he was born in Paris, July 10, 1871. He began his career by writing for *La Revue Blanche*, and soon published a collection of love stories which attracted attention. He also translated some of Ruskin's books into French. The last 20 years of Proust's life, during which his health was very bad, were passed in writing an immense novel, *À la Recherche du Temps perdu*, a wonderful psychological study of the author's life and times. The first of its seven parts appeared in 1913; the second, 1918, won for the author the Prix Goncourt and a European reputation; the three final parts were only published after Proust's death, which took place on Nov. 18, 1922. Some of Proust's works have been translated into English by C. K. Scott-Moncrieff.



Marcel Proust, French writer

PROVENCE. One of the provinces into which France was divided before the Revolution. It was a province of the Roman Empire, and lay between the Rhône, the Alps, and the Mediterranean. Its capital was at first Aix, and then Arles. Before 900 it had been formed into a kingdom for Boso, brother-in-law of Charles the Bald. This was called the kingdom of Provence, or Burgundy, but it must not be confused with the other kingdom of Burgundy, to the N. It now constitutes the departments of Bouches du Rhône, Var, Vaucluse, and Basses-Alpes.

Provençal was originally the most important dialect of the broader Romance language, the langue d'oc, in the 12-14th centuries the spoken tongue of S. France, Italy, and Spain.

The chivalrous romances of Provence were overshadowed by those of the north, but in

the lyric poetry of the troubadours it was unrivalled in its time. The development of this literature reached its climax during the 12th century and ended practically with the 13th. A notable revival took place in the 19th century. See Burgundy; France; Troubadour.

PROVERB (Lat. pro; verbum, word). Short familiar sentence, an obvious truth or moral lesson. The majority of proverbs were familiar in the mouths of the multitude long before they were written down. Each country, often each part of each country, has its own characteristic sayings, but human nature and experience being essentially at one the world over, there is a marked affinity between them. Frequently the same proverb, with colloquial variations, belongs to so many nations that none could say in which country it was originally born, or whether it was spontaneously generated in all. There have been many compilations of proverbs, both in English and in most other languages.

PROVERBS. Book of. Book of the O.T., belonging to a class of Hebrew writings called Wisdom Literature. The full title is "The Proverbs of Solomon, son of David, King of Israel" (1, 1). The book is a compilation of wise sayings and proverbs, and not, it would appear, the work of a single writer. The divisions of the book have been described as follows: 1, a group of discourses on wisdom and wise conduct, 1-9; 2, a collection of aphorisms in couplet form, 10, 1-22, 16; 3, two collections of aphoristic quatrains, 22, 17-24, 22 and 24, 23-34; 4, a collection of aphoristic couplets, 25-29; 5, a collection of discourses of various characters, 30 and 31.

PROVIDENCE. Capital of Rhode Island, U.S.A. It stands at the head of navigation of Providence river, 45 m. S.W. of Boston. Among prominent buildings are the state house, the Athenæum, and a public library. The chief educational institution is Brown University, founded in 1764. Coal is shipped, and among manufactures are cotton, woollen, and worsted goods. Pop. 267,918.

Facing Providence, on the E. side of the river, is the town of East Providence, which has bleach works and paper mills, besides manufactures of chemicals. Its oyster fisheries are valuable. Pop. 26,088.

PROVINCE (Lat. provincia, territory, etymology doubtful). Word specifically applied to the district round about Massilia (Marseilles), which, as Rome's first conquest outside the Italian peninsula, was known as the Province and which is still called Provence (q.v.). Successive conquests were formed into provinces for administrative purposes, Britain being one, and the term subsequently was used in a wider, more general sense.

For ecclesiastical purposes England and Wales are divided into three provinces, Canterbury, York, and Wales, each being under the jurisdiction of an archbishop.

PROVINCE WELLESLEY. Portion of the colony of Penang on the mainland of the Malay Peninsula. Averaging 8 m. in width, it extends along the coast for 45 m. facing the island of Penang. It was taken over by Great Britain in 1798. The chief town and seaport is Prai. Its area is 280 sq. m. See Malaya; Penang.

PROVOST (Lat. praepositus, placed before). Chief municipal magistrate of a city or

burgh in Scotland. The provosts of Edinburgh, Glasgow, Aberdeen, Perth, and Dundee are styled lord provosts. The term is also applied to the heads of certain colleges, e.g. provost of Eton, King's College, Cambridge, Queen's College, Oxford.

The provost marshal is an officer appointed on a campaign to be chief of the military police. He wears a badge, "P.M.," on his left arm; he receives instructions from the adjutant-general and is attached to G.H.Q. His assistants secure all persons found without passes, collect stragglers, and guard against spies; they arrest military offenders against the rules of the service, keep records of field general courts-martial, and carry out the sentences.

PROXY (late Lat. procurator, acting for another). Term used for a person who acts for another, and also for the authority by which he acts. It is chiefly used in connexion with voting. In the United Kingdom company law allows the employment of proxies, and many shareholders authorise a director or someone else to use their voting powers. Proxies are used in bankruptcy proceedings.

PRUDENTIUS (c. A.D. 348-410). Christian poet, whose full name was Anrelius Prudentius Clemens. Born in Spain, probably at Saragossa, he practised as an advocate, held several provincial appointments, and lived for some time at the court of Honorius. Having lost the imperial favour, he retired to a monastery, and wrote religious poems. His chief works, hexameters and lyrics, are *Cathemerinon*, prayers for daily use; *Peristephanon*, acts of martyrs; *Hamartigenia*, the origin of evil.

PRUDHOE. Urban district of Northumberland. It stands on the Tyne, 11 m. from Newcastle, with a station on the L.N.E. Ry. Near are the ruins of Prudhoe Castle. The chief industry is coal-mining. Pop. 8,924.

Prudhoe Land. Coastal tract of N.W. Greenland. It is situated N. of Hayes Peninsula, and contains the settlement of Etah.

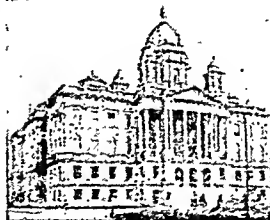
PRUNE (Lat. prunum, a plum). Dried fruit of various plum trees grown in France, Portugal, other European countries, and America, especially in California. The best plums are sun-dried. They are eaten dry, or soaked and stewed, and are valuable for their laxative quality.

PRURITIS. Itching of the skin without signs of local disease. It is most common between the ages of 30 and 40. The condition is most frequently of a neurotic nature, and may occur in persons who are worried or overworked. Lotions containing preparations of tar, carbolic acid, salicylic acid, resorcin, menthol, and other substances may be applied, but are often without effect.

PRUSSIA. Republic of Europe, the largest state of the German Reich. Before 1918 it was a kingdom in the German Empire. Its area is 113,833 sq. m., being over 20,000 sq. m. less than before the Great War. Berlin is the capital and the largest town. Pop. 38,750,000. The prov. of E. Prussia is a detached area separated by the Polish corridor.

Prussia includes the southern part of Schleswig-Holstein, a large part of the Rhine valley, Westphalia, Hanover, much of what was once part of Saxony, Pomerania and most of Silesia (q.v.). The chief rivers are the Rhine, Elbe, Oder, and Weser. The principal industrial areas are Westphalia and Silesia, with their rich coal and iron mines and large manufacturing centres. Agriculture is widely practised.

Prussia started with the electorate of Brandenburg in 1415, but, strictly speaking, Brandenburg-Prussia did not exist until 1660. The various phases of the development of the modern Prussian state may be grouped broadly as follows: (1) the period of the



Providence, Rhode Island. The State House, opened in 1900

Hohenzollern rule from the Great Elector (1640) to the death of Frederick the Great (1786), in which Prussia became a monarchical and military state of the first rank; (2) the Prussian monarchy from 1786 to the death of Frederick William III (1840); (3) the age of the Revolution, of William I and Bismarck (1840-1890), in which Prussia established a Prussian supremacy in Germany; (4) the personal rule of the emperor William II, who by his perpetuation of the state's dynastic autocracy, overweening vanity, and advocacy of a powerful navy, helped to precipitate the Great War.

Prussia was declared a republic in Nov. 1918, and the present constitution was adopted in Nov., 1920. The diet (Landtag) is elected by proportional representation and direct and secret ballot. A state council (Staatsrat) elected by the provincial assemblies on a basis of one representative per 50,000 pop. has the right of rejecting legislation formulated by the diet. There is a ministry under a president or premier.

PRUSSIA, EAST. Province of Prussia. Since 1918 it has been detached from the rest of the country, and is now separated from it by territory belonging to the republic of Poland and the free city of Danzig. Königsberg is the capital; other places include Allenstein and Gumbinnen. The Masurian Lakes are in the province, in which there was a good deal of fighting during the early days of the Great War. In the 15th and 16th centuries East Prussia was ruled by the Teutonic Order. Its area is 14,304 sq. m. Pop. 2,256,350. See Germany.

PRUSSIAN BLUE. Dark blue colouring matter. It was first made accidentally early in the 18th century by a Berlin artist named Diesbach. The compound is made by adding potassium ferrocyanide to a solution of ferric chloride or ferric sulphate, and washing and drying the precipitate. If potassium ferricyanide is employed, Turnbull's or Gmelin's blue is obtained. Another variety is Williamson's blue.

PRUSSIC ACID. Common name for hydrocyanic acid (q.v.). It was so called by Guyton de Morveau because the acid can be made by distilling Prussian blue.

PRYNNE, WILLIAM (1600-69). English puritan. Born at Swainswick, near Bath, he was educated at Oxford, and became a barrister. In 1633 he published *Histrio-Mastix*, an attack on stage plays and regarded as insulting to the queen. For this he was barbarously punished; in addition to fine and imprisonment, he lost his ears and stood in the pillory. In 1637 he was again brutally punished for attacking Laud. In 1640 he was released and given £4,000 by the Long Parliament. An active member of the popular party, he entered the House of Commons in 1648, but was ejected by Colonel Pride and imprisoned. Later he returned to Parliament, became a royalist, and was made keeper of the records at the Tower of London. He died Oct. 24, 1669.



William Pryne,
English puritan

PRZEMYSL. Town of Poland, 60 m. by rly. from Lemberg (Lwow). Formerly an Austrian fortress, it is situated on the San. A hill to the S.W. of the town is crowned by ruins of a castle. Pop. 47,958. Pron. Pzbeem-isl.

There was almost constant warfare around Przemyśl during the earlier part of the Great War. In Sept., 1914, the Russians besieged it. More than once Austria's armies advanced and relieved the pressure, but such relief was only temporary, and each time the siege was

renewed. On March 25, 1915, the fortress and some 120,000 men surrendered. In May, 1915, the Russians in Przemyśl were attacked by an Austrian and Bavarian force, which stormed the forts, and on May 3 entered the city. It remained in Austrian hands until the end of the struggle.

P.S.A. Abbreviation for Pleasant Sunday Afternoon. The movement for providing people with pleasant Sunday afternoons under religious influences was started by John Blackham of West Bromwich in 1875. The meetings were chiefly organized in connexion with the Free Churches, especially the Congregationalists and Baptists, and the movement spread all over the country. In the 20th century it became merged in that known as the Brotherhood (q.v.).

PSALMANAZAR, GEORGE (c. 1679-1763)

Name taken by a literary impostor. Probably a Frenchman and educated by the Jesuits, he was brought to England by an army chaplain, was converted to Christianity, and sent to Oxford. Claiming to be a native of Formosa, he published, in 1704, a *Historical and Geographical Description of Formosa*, partly invented, with an invented grammar of the language. About 1712 he confessed to the imposture,

and became a literary hack, in his later years winning the esteem of Dr. Johnson by his poetry. He died May 3, 1763.

PSALMS, BOOK OF. Book of the Old Testament. It is a collection of 150 poems, divided, in the Hebrew Bible, into five smaller books: (1) Pss. 1-41; (2) 42-72; (3) 73-89; (4) 90-106; and (5) 107-150. According to Jewish tradition the fivefold division was intended to correspond to the fivefold division of the Law, i.e. the Pentateuch. Each of the first four books closes with a doxology, and in the fifth book the last psalm seems to serve as such.

In the Hebrew Bible and in the Septuagint, all but thirty-four bear titles or superscriptions which make statements about the authorship or occasion of composition, or give musical directions.

The practice of singing the psalms has long been an important part of Christian worship. It was usual among the early Christians and has continued until to-day. In the Church of England the psalms are sung through each month, two or three being taken at morning and evening prayer each day.

There are three methods of psalmody, as singing the psalms and canticles is called: (a) responsorial, or between a soloist and the choir; (b) antiphonal, between two choirs or two parts of a choir; (c) direct, sung full without alternation. See Antiphonal; Plainsong.

PSALTER. Book containing the psalms or other hymns, especially metrical paraphrases of the former, either with or without accompanying music.

In England there appeared in 1549 a metrical version of the Book of Psalms by Robert Crawley, with accompanying music, and also in the same year a small volume containing nineteen versions by Thomas Sternhold. With the assistance of John Hopkins and other writers it was gradually enlarged in successive editions, until in 1562 it embraced the whole of the Psalms, set to 65 different tunes, the melody alone being given. The singing of metrical paraphrases still persists in Scotland, but in England only a few of the finest specimens are now used in worship.

PSALTERY (Gr. psalterion, a harp). String instrument used by the Jews, Greeks,

and other early peoples. Its form and character varied, being square, triangular, circular, or irregular, but it was always played by the fingers, with or without a plectrum. It was frequently introduced into pictures by medieval artists, but no specimen is extant.

PSITTACOSIS. Disease of parrots due to a filtrable virus. Even healthy birds may act as carriers, and the disease is transmissible to man, a serious outbreak occurring in England in 1929. In 1930 the importation of parrots was prohibited. See Parrot.

PSORIASIS (Gr. psora, scab). Inflammatory infection of the skin. The cause of this common affection is unknown, but hereditary influences often play a part. The lesion begins as a small, round papule, which soon becomes white as scales form. Ultimately, these develop into patches which may be several inches across. They often disappear spontaneously, but recurrence of the condition is very common. In the early stages, arsenic and salicin administered internally have proved useful. Pron. So-ria-sis.

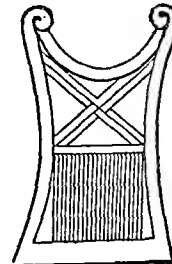
PSYCHÉ (Gr. soul). In classical mythology, a maiden so beautiful that she aroused the envy of Aphrodite, who sent Cupid to inspire her with love for the meanest of men. Cupid, however, fell in love with her beauty himself, but left her owing to the machinations of her jealous sisters. Psyché then set out to look for Cupid, and after long wandering was united to her lover. Pron. Psy-kee.

PSYCHICAL RESEARCH. Term denoting the scientific study of the more obscure and unexplained activities of the human spirit or of spirit in general. It became current about 1882, when the society for psychical research was founded by Henry Sidgwick, F. W. H. Myers, E. Gurney, and others for the serious study of thought transference, apparitions and haunted houses, hypnotism, trances, clairvoyance, etc.

Modern men of science, with very few exceptions, dismissed all these things as belonging entirely to the realms of superstition and fraud. The founders of the society took another view. They held that the persistent belief of mankind in supernatural occurrences must have been kept alive by some facts, and they determined to submit those facts to sober scientific inquiry. The society still carries on investigations of this kind. Its headquarters are at 31, Tavistock Square, London, W.C.1. See Dream; Poltergeist; Spiritualism.

PSYCHOANALYSIS. Method of investigating the processes of the mind and the fundamental motives of conduct. By the psychoanalyst the human mind is conceived as having two distinct but interdependent aspects, the "conscious" and "unconscious" mind. The former is that which feels and reasons actually and in the present. The latter is conceived as a psychic region which contains the forces collectively described as memory, instincts, habits, etc., and is not directly known to the working conscious mind. Self-centred and primitive, the unconscious mind preserves, active but latent, those desires and impulses which socialised life obliges everyone to "repress" from the upper consciousness.

Between the conscious and unconscious minds there is frequently a conflict, and this may show itself in a serious and lasting neurosis, or merely in some action unimportant in itself, but explicable only with reference to



Psaltery of medieval design. From a 9th century MS.

the hidden and unknown desire which persists in asserting itself. Convinced that many hysteric, neurotic, and neurasthenic ailments, great and small, result from the repression of unpleasant desires, images, or experiences, and especially in early childhood, psychoanalysts seek to discover the nature of these repressions. A group of such repressed ideas is technically known as a "complex."

The dream (q.v.) has been carefully studied by psychoanalysts. Freud's researches in abnormal psychology went to show that the forced repression of sexual instincts was the commonest cause of neurotic disturbances; and he and his school have tended to give sex the paramount place among human motives. Carl Jung (q.v.) has made important developments in the principles of psychoanalysis.

PSYCHOLOGY. Science which classifies and analyses the phenomenon of the human mind. Speaking broadly, there are two schools of psychology. The older school agree in regarding psychology as the science of mental phenomena, meaning by that term sensations, emotions, memories, thoughts, acts of will and the like. Moreover, they are in general agreement about the way in which mental phenomena should be studied. Sensations, feelings, etc., are private property which no one but their possessor can observe. Thus there is, ultimately, only one method of inquiry in psychology, the method of introspection, or of looking into one's mind.

The younger school both disclaim the object and reject the method of the older psychologists. A science, they argue, cannot be based on private knowledge; it must deal with facts open to all competent observers. Hence psychology, if it is to be counted a science, must change its ways and model itself anew upon physiology. Just as physiology seeks to determine how particular organs behave under given conditions, so psychology should interest itself in the behaviour of the individual as a whole when he is brought into carefully stated situations. This does not rule out self-observation altogether, but it does rule out all observation of one's own behaviour which another could not make.

PSYCHOTHERAPY (Gr. psychē, soul; therapeia, treatment). Treatment of mental disorders by influencing the mind. Usually employed for the treatment of hysteria, neurasthenia, and kindred affections, it embraces treatment by suggestion, hypnotism, psychoanalysis, and various forms of re-education where function has been impaired without organic disease.

PTAH. Egyptian deity. The local god of Memphis in the 1st dynasty, he was the divine artificer, creating all things out of the Nile mud. Assimilated to other gods—Osiris, Apis, Sokar—he is represented with a mummified body, wearing a skull cap. Later, as a banded-legged dwarf, he resembled Hephæstus.

PTARMIGAN (Gaelic tarmachan). Species of grouse (*Lagopus mutus*), found in the mountainous districts of N. Europe. In summer the plumage is brownish grey marked with black lines and dark spots, and in winter it is white with the exception of a small scarlet comb, a black line on each side of the head, and black outer tail feathers. It is 14 ins. long, and the legs and feet are thickly feathered. In Great Britain it is restricted to the highest parts of the Scottish highlands and to some of the

western islands. The ptarmigan so closely resembles its surroundings that it is difficult to detect until it takes flight. See Grouse.

PTERODACTYL. Name given to the flying lizard, the fossil remains of which are found in rocks of Mesozoic age. Varying in size from only a foot in the spread of their wings up to some 20 ft., these reptiles were remarkable for their bird-like habits. The wings, however, resembled more those of the present-day bat, being a membrane attached to the body and the long, jointed fingers of the fore limbs. The hind legs bore a strong resemblance to those of reptiles, but the heads of many were more bird-like, possessing jaws which were covered with a horny beak.



Pterodactyl. Skeleton of *P. spectabilis*, a short-tailed flying reptile
By courtesy of the trustees of the British Museum

was the ether. The zones of the heavens were in and beyond the ether, each zone a transparent spherical shell. Each shell or sphere had its own heavenly body which, revolving with it, moved round the earth.

As a geographer, Ptolemy was as celebrated as he was as an astronomer and mathematician. His *Geographikē Syntaxis* was the first attempt to place geography on a scientific basis. He laid down the latitude and longitude of places and constructed maps of the known inhabited world on a mathematical basis in a manner far in advance of his time.

PTOLEMY. Name of several kings of Egypt. Ptolemy I Soter (367-283 B.C.) was one of the favourite generals of Alexander the Great, at whose death in 323 he became satrap of Egypt, and in 305 assumed the kingly title, thus inaugurating the Ptolemaic dynasty, which lasted until 30 B.C. Soter founded Ptolemais in Upper Egypt as a rival to Thebes, built the Serapeum and planned the famous library and museum. In 285 Ptolemy abdicated, and died two years later.



Ptolemy II Philadelphus, King of Egypt
From a bronze bust



Ptarmigan. Hen bird of this species of grouse
W. S. Berridge, F.Z.S.

PTOLEMY OR CLAUDIUS PTOLEMAEUS (fl. A.D. 127-51). Egyptian astronomer and geographer. The dates of his birth and death are unknown, all that is certain being that he conducted his observations in Alexandria during the reigns of Hadrian and Antoninus Pius. His doctrines were incorporated in his great work in 13 volumes, written about A.D. 140, called by the Arabs the *Almagest* (q.v.).

The Ptolemaic system is the theory expounded by Ptolemy to account for the movements of heavenly bodies. He supposed that the moon, sun, and stars revolved in circles about the earth. Beyond the latter, and beyond the fire and water which it supported,



Ptolemy I Soter, King of Egypt
From a coin

Ptolemy II Philadelphus (308-246 B.C.) succeeded on his father's abdication in 285. He opened a canal from the Nile to the Red Sea, and founded the port of Berenice. Ptolemy III Energetes (281-221 B.C.) succeeded his father Philadelphus in 246, and by

marrying Berenice, daughter of Ptolemy Soter's stepson Magas, added Cyrenaica to the kingdom of Egypt.

The remaining Ptolemies were of less importance. Ptolemy IV Philopater, dying in 205 B.C., was succeeded by his son Ptolemy V Epiphanes. Then came Ptolemy VI Philometor. The legitimate line came to an end with Ptolemy X in 80 B.C. Ptolemy XII and

Ptolemy XIII were both brothers of Cleopatra and associated with her in the government. Ptolemy XIV was her son, and Ptolemy XV, the last of the dynasty, who died in 40 A.D., was her grandson.

PTOMAINE (Gr. ptōma, corpse) Alkaloidal substance formed in the process of putrefaction of nitrogenous organic tissues. Such have been regarded as responsible for the symptoms in cases of poisoning by meat, but it is now known that ptomaines are destroyed in the stomach and are therefore unlikely to give rise to symptoms. See Botulism: Poisons.



Ptolemy III Energetes, King of Egypt
From a coin

PTOSIS (Gr. ptōsis from ptein, to fall). Inability to raise the upper eyelid. It may be congenital, or due to injury or disease producing paralysis of the nerve which supplies the eyelid, locomotor ataxia being the most common. See Eye.

PUBERTY (Lat. puber, mature). Age at which the reproductive organs become functionally active. In boys changes characteristic of puberty generally appear between the 14th and 16th years. The rate of growth is increased, the frame and general build begin to approach that of the man, hair appears in the pubic region, and the voice begins to "break." In girls, puberty generally occurs between the ages of 13 and 15. The figure fills out, the breasts become enlarged and rounded, and the menstrual function is established. In hot countries puberty tends to occur at an earlier age than in cold climates.

PUBLICAN (Lat. publicanus) In ancient Rome, a contractor for public business, but more especially for the collection of taxes. The farming of taxes was for long a coveted privilege of the equestrian order at Rome, which was chiefly composed of capitalists and men of business. The actual work of collecting the taxes was done by slaves, freedmen, and other people of humble rank. In practice, owing to the heavy financial responsibility involved, publicans formed themselves into syndicates to carry out any particular contract.

PUBLIC HEALTH. Collective physical health of the community. The department of medicine concerned with the activities of the state in the promotion of health is described as public health or state medicine. Legislative enactments dealing with the subject of health are put into force by central and local authorities. The Ministry of Health is the central authority for England and Wales.

Public health comprises such subjects as housing, sanitation, ventilation, the prevention of infectious diseases, pre-natal and maternity care, infant welfare, the health of school children, the purity of food and water, the health in mines, factories and workshops, the treatment of tuberculosis and of venereal diseases, and so on. A large amount of research is also carried out. Bacteriology has made great advances of recent years and with the knowledge of the causal agents of infection,

ever-improving methods of diagnosis, and provision for isolation of sufferers, most forms of communicable disease are coming under control. See Analyst, Public; Birth Rate; Contagion; Industrial Disease; Infant Mortality; Infection; Notification; Sanitation, etc.

The Royal Institute of Public Health was founded in 1886 to promote the interests of those engaged in public health work. It has well-equipped chemical and bacteriological laboratories for the purpose of study and research, and courses of lectures are given on tuberculosis, etc. The address is 37, Russell Square, London, W.C.

PUBLIC HOUSE. Licensed house where alcoholic liquors are provided for retail sale and consumption within specified hours. See Beerhouse; Ina; Licensing.

PUBLIC POLICY. Comprehensive legal term for the overwhelming interest of the country as a whole. In English law, a contract which is immoral, or in unreasonable restraint of trade, or of a fraudulent or criminal character, is said to be against public policy.

PUBLIC PROSECUTOR. In England, a high legal official, whose duty it is to undertake, on behalf of the government, the prosecution of persons charged with serious crimes. All cases of treason are prosecuted by him, and many other cases of great gravity. He has the right to interfere at any stage of the preliminary proceedings in a criminal case, and to take the prosecution out of the hands of the police or of a private prosecutor.

PUBLIC SCHOOL. Name given in the United Kingdom and elsewhere to a certain type of school. The lines on which these schools are run include the prefectural or monitorial system, i.e. participation by senior boys in the maintenance of discipline, the arrangement of the pupils in forms, their division into houses partly for the sake of competition, and a good deal of attention to sport. Most of the public schools are old foundations, some of them, e.g. Uppingham, having been originally grammar schools, which were reformed and enlarged. Others, e.g. Wellington, are new foundations entirely. The English public school system has spread to Canada, Australia, and S. Africa, and to some extent to the U.S.A. Many girls' schools are now run on public school lines.

PUBLIC TRUSTEE. English official appointed by virtue of the Official Trustee Act, 1906, which became operative Jan. 1, 1908. He is a corporation sole whose business it is to act as executor and trustee of the estate of anyone in England who appoints him. He can be appointed alone, or with a co-trustee or trustees, and the great advantage of so appointing him lies in the certainty that the funds of the trust will not be lost. He charges certain small fees for his services. The office is at Kingsway, London, W.C.2, and there is a branch office in Manchester.

PUBLISHING. Business of multiplying literary works. Printer, publisher, and bookseller were in the early days of printed books combined in one person.

The publisher's functions embrace, besides those of manufacturer, the selection of manuscripts suitable for publication and the commissioning of books on special subjects to suit the requirements

of his market. Most publishing firms have special lines to which they confine themselves; only a few publish books of a certain standard in almost any field of literature. To make a book as attractive as possible, the publisher supplies illustrations, which require the services of special artists, or photographs, maps, schedules, and other devices that adorn and illustrate or help to explain the author's intention.

When a book is manufactured, the business of distribution begins. This is done in different ways; by travellers who visit the booksellers with samples, by creating a demand through advertisements in the public press, by means of reviews which the public expect for their guidance in the periodicals they read, and here and there by means of canvassers who sell books on the instalment plan. See Bookselling.

PUCCHINI, GIACOMO (1858-1924). Italian composer. Born at Lucca, Dec. 23, 1858, he studied under local teachers, worked at Milan conservatoire, 1880-83, and in 1884 his one-act opera, *Le Villi*, was produced. His first great success was with *Manon Lescaut*, staged at Turin, 1893, and its triumph was outdone by that of *La Bohème*, founded on H. Murger's novel, 1896. His other works are *La Tosca*, 1900; *Madama Butterfly*, 1904; *The Girl of the Golden West*, 1910; *La Rondine*, 1917; and *Il Tabarro*, *Sue Angelica*, and *Gianni Schicchi*, one-act operas, 1918. Puccini died Nov. 29, 1924. In 1926 his last opera, *Turandot*, was produced in Milan.



Giacomo Puccini.
Italian composer

or a word of similar sound, is associated with a merry, familiar house spirit in the folklore of many peoples, and there is a curious parallel among the Red Indians of North America, for among the Algonquins Puckwudjines signified the little vanishing people. See Fairy.

PUDSEY. Borough of Yorkshire (W.R.). It is 3 m. from Bradford, on the L.N.E. Ry. The industries include the manufacture of woollens and worsteds, iron and brass founding, and the making of machinery. Pop. 14,315.

PUEBLA. City of Mexico. It stands on the Atoyac river, 65 m. S.E. of Mexico City, at an alt. of 7,200 ft. Among notable buildings are the handsome cathedral, the state government building, the palace of justice, the Palafoxiana library, and an academy of fine arts. The town is an important rly. junction. Pop. 95,535.

PUEBLO (Span. village). Name of certain N. American Indian tribes. Chiefly found in Arizona and New Mexico, they now only number a few thousands. The men cultivate the soil and are famed for their weaving; the women build the houses and make excellent pottery. Their elaborate rites, held in underground halls called Kivas, are mainly concerned with rain-making ceremonies.

PUPERAL FEVER (Lat. puer, child; pareror, to bear). Form of blood poisoning due to infection by micro-organisms during or shortly after the process of child-birth. The use of antiseptic methods, entailing scrupulous cleanliness on the part of doctor and midwife, and thorough sterilisation of all instruments and appliances used, has reduced the incidence of the affection to a very low figure.

Puerperal insanity is the name given to mental derangement associated with pregnancy or parturition. The conditions which most frequently predispose towards puerperal insanity are hereditary influences, seduction, shame, shock, and exhaustion.

PUFF ADDER (*Crotalaria*). Venomous serpent, found in Africa. It has a very large,

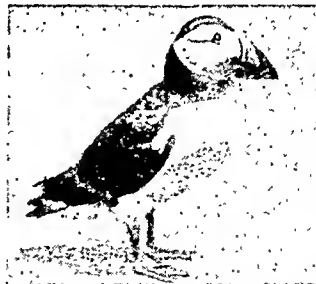


Puff Adder. Venomous African snake. Left, distended jaws showing the poison fangs

whence their popular name. Their venom is very virulent, and their habit of lying half-concealed in the sand makes them dangerous to travellers.

PUFF BALL (*Lycoperdon*). Genus of fungi. The spore-bearing portion of the fungus is enclosed in a continuous wall of two layers, of which, by expansion of the inner, the outer layer breaks up into spines or warts. When the spores are ripe the inner wall opens at the apex to release them. Two common and graceful forms, *L. gemmatum* and *L. piriforme*, are edible whilst the flesh is still white. The allied giant puff-ball also affords food before the flesh turns brown. See Fungus.

PUFFIN (*Fratercula arctica*). Sea bird belonging to the auk family. The plumage is black on the crown, back, and wings, and white elsewhere. The bird is remarkable for its very large, adze-shaped beak, which is striped with brilliant red and orange. The decorations of the bill are shed in winter. It is found mainly on the N. shores of Great Britain, the N. temperate zone, and the Arctic, nesting in holes in the ground and crannies in the rocks, and often taking possession of rabbit burrows. Puffins feed upon small fish. In winter most of the birds migrate to the Mediterranean region. See Auk.



Puffin. Sea-bird with large brilliant-coloured beak

PUG DOG. Small toy dog of the mastiff group. It somewhat suggests a diminutive bulldog, from which it has probably been derived. It was introduced into Great Britain in the time of William of Orange, being known as the Dutch pug. Its skull is broad, with a very short muzzle, the tail curls and lies close to the body, and the hair is very short



Pug Dog. Specimen of the toy breed



Pueblo Indian. Old hunter from New Mexico

PUGET, PIERRE (1622-94). French sculptor, architect, and painter. Born at Chateau Follet, near Marseilles, Oct. 31, 1622, he studied in Italy. He is best known by his sculpture, in regard to which he was employed on public works by Fouquet and Colbert. His Milo of Crotona and Perseus and Andromeda were erected in the park at Versailles, and there is a Puget room in the Louvre. He died Dec. 2, 1694.

PUGET SOUND. Inlet in the N.W. of Washington, U.S.A. An arm of the Pacific Ocean, with which it communicates by Juan de Fuca Strait, it has many branches. Its length is 125 m. and breadth 5 m. to 25 m., and it is navigable throughout. On its shores are the ports of Tacoma, at its head, Seattle and Port Townsend.

Pugilism (Lat. pugil, boxer; from pugnus, fist). Term for obsolete bare-knuckle fighting as distinguished from modern boxing (q.v.).

PUGIN, AUGUSTUS WELBY NORTHEM (1812-52). British architect. Born in London, March 1, 1812, he studied under his father, Augustus Charles Pugin. In his early days he was employed on stage scenery and other ventures, but soon turned to architecture, and having embraced Roman Catholicism, designed many churches for that communion. He died Sept. 14, 1852. See Killarney.

PULBOROUGH. Market town of Sussex. It stands on the Arun, 11 m. from Horsham, with a station on the Southern Rly. The large church, partly Early English, contains old brasses. Market day, alternate Mon. Pop. 2,065.

PULHAM. Village of Norfolk. Pulham Market or Pulham S. Mary Magdalene is 3 m. from Harleston, with a station on the L.N.E. Rly. Pop. 984. Pulham S. Mary the Virgin, or Pulham S. Mary, is nearer Harleston, also with a station on the L.N.E. Rly. Pop. 841. There is an airship station at Pulham.

PULITZER, JOSEPH (1847-1911). American journalist. Of Jewish descent on his father's side, he was born at Budapest, April 10, 1847. Going to the U.S.A. in 1864, he served during the Civil War. In 1876-77 he was correspondent of The New York Sun in Washington and Europe; in 1878 he bought The St. Louis Dispatch, which he amalgamated with The Evening Post as The Post-Dispatch; and in 1883 he acquired The New York World. He founded and endowed the school of journalism at Columbia University, opened in 1912. He died Oct. 29, 1911.

PULLEY. Wheel with a flat, convex, or grooved rim, mounted on a shaft or pin upon which it is free to revolve or which is free to revolve with it. As regards the principle of the pulley, Fig. 1 represents a pulley secured by its block or frame to a beam, with a cord passing over it on the ends of which weights W and W' are hung. As the distances d and d' are equal, by the law of the lever it follows that W and W' must be equal in order to balance each other. If, as in Fig. 2, one end of a cord be secured to a beam and passed round the movable pulley A and the fixed pulley B , W will require only half its weight applied at P to balance it, for W is virtually suspended by two cords, and half its weight is borne directly by the beam, whilst the pull of the other half $W/2$ passes over the pulley B . By increasing the number of movable pulleys the effort of P to balance W is decreased by one-half for every pulley; thus in Fig. 3, P and W

are in equilibrium when $P = W/(2 \times 2 \times 2) = W/8$. Combinations of pulleys are known as systems. In Fig. 4 the same cord passes round all the pulleys, and in this case W is equally distributed between the four cords 1, 2, 3, and 4, from which it follows that $P = W/4$.

PULLMAN, GEORGE MORTIMER (1831-97). American inventor. Born in Chautauqua co., New York, in 1839 he began his designs for a new type of rly. coach, and in 1863 built the first Pullman sleeping car. He carried out further improvements in railway carriages, and in 1887 invented the corridor train and introduced dining cars. From his inventions he made a large fortune, and founded the model town of Pullman, later incorporated with Chicago.

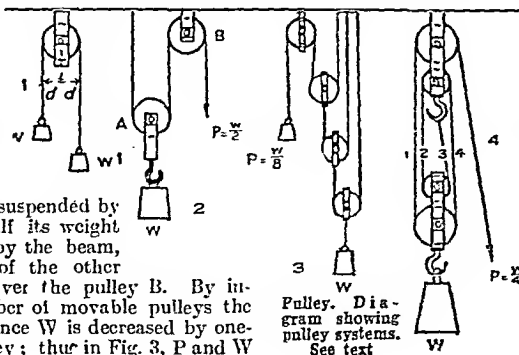


George M. Pullman, American inventor

PULPIT (Lat. pulpitum, scaffold, stage, or desk). In ecclesiastical architecture, an enclosed stage or platform, raised above the level of the ground and congregation, from which the preacher delivers his sermon. The pulpit in Roman Catholic churches is generally on one side of the nave, often being built against one of the pillars dividing the nave from the north aisle; the handsomest examples, however, in point of design and carving, are independent structures. The marble pulpits of Siena Cathedral and the Baptistery at Pisa are masterpieces. The wooden examples of the Low Countries include many splendid specimens.

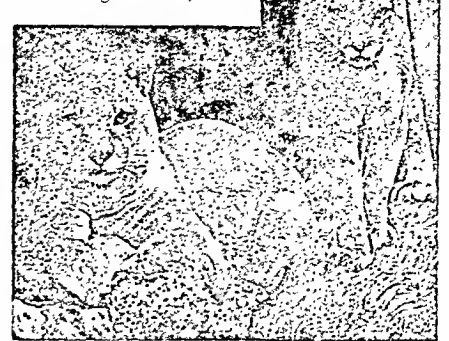
PULSE (Lat. pulsus, beating). Expansion and contraction of an artery, caused by variations in the volume of blood propelled into the circulation at each beat of the heart. The pulse is most conveniently examined in the radial artery a little above the wrist. It varies in rate, strength, regularity, and tension, and the character of each of these attributes furnishes information valuable in the diagnosis of certain constitutional conditions, and of various affections of the heart or arteries. The pulse rate in healthy adults is from 70 to 80. The rate is increased by muscular effort, fever, anaemia, and some other diseases.

PULTENEY, SIR WILLIAM PULTENEY (b. 1861). British soldier. Born May 18, 1861, he joined the Scots Guards in 1881. He served in the Egyptian campaign of 1882, was in Uganda, 1895-97, where he won the D.S.O., and with the Guards went through the South African War. In August, 1914, he was in command of the 6th Division, but was put at the head of the 3rd Corps, and led it until 1918. In 1915 Pulteney was knighted. He became gentleman usher of the black rod in 1920.



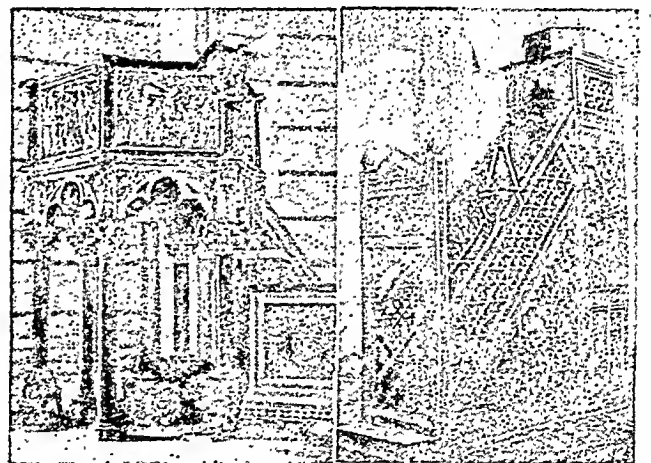
Pulley. Diagram showing pulley systems. See text

PUMA (Felis concolor). Large carnivorous mammal of the cat family, widely distributed through N. and S. America. The body is nearly four feet long, tawny in colour. Young animals are profusely spotted with black and have ringed tails, but



Puma. Male and female of Felis concolor. A large American member of the cat tribe. Gambier Bolton, F.Z.S.

they assume the uniform, tawny hue of their parents when about six months old. There are several local varieties. In N. America the puma is commonly known as the mountain lion or the panther, while in S. America it is called the lion or cougar. It is a dangerous foe to deer, horses, and cattle.



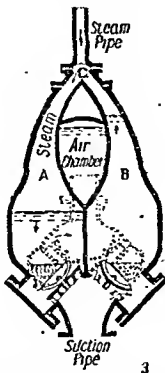
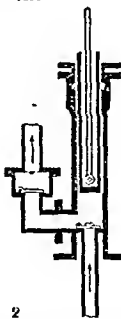
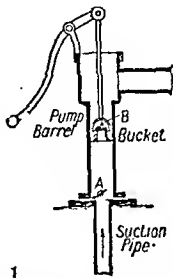
Pulpit. 1. Hexagonal pulpit by Niccolò Pisano, 1260, Baptistery, Pisa. 2. Carved wooden pulpit, in mosque of Ala-ed-din, Koniah

Nocturnal in habits, it makes its lair in cavities in the rocks, and usually produces from two to four cubs in a litter.

PUMICE or **PUMICE STONE.** Name given to an effusive igneous rock possessing a spongy texture. Grey in colour, it has been formed by the expansion of occluded moisture. Pumice stone is characteristic of lavas of rhyolitic composition, and is extensively used as a polishing, smoothing, and cleaning stone. Ground to a powder and mixed with soaps, it forms a constituent of many metal polishes. The finest pumice stone is obtained from the Lipari Islands. See Rhyolite.

PUMP. Machine used to move fluids. Pumps may be divided into four main classes according to their working principles: (1) Reciprocating pumps, which draw the fluid in by suction and expel it by the movement of a hucket, piston, or plunger. A familiar example is the hucket pump used to draw water from wells. (2) Rotating pumps, without valves. The best known is the centrifugal, which may be described as a water turbine reversed. (3) Mechanical lifters, such as chains of buckets, which dip into the liquid.

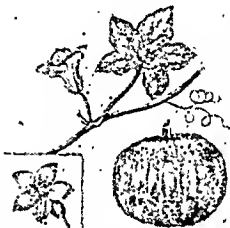
(4) Pumps in which steam, compressed air, or gas acts directly on the fluid. An example is the Humphrey pump. The pump is a four-stroke internal combustion engine of which the pump barrel is the cylinder, and a column of water, continually added to at the suction end and subtracted from at the delivery end, is the piston. Water is taken in during the power stroke, and delivered during all strokes. The valves and the ignition apparatus are controlled by movements of the water in the combustion chamber. Another kind of pressure pump is the air lift. (See diagram, p. 36.)



1. Pump. 1. Bucket pump showing foot valve A, and bucket valve B. 2. Force pump, single acting. 3. Pulsometer pressure pump. Steam enters chamber A through a pipe, ejecting water. Condensation ensues, causing suction, which closes steam inlet and opens suction valve V, allowing more water to enter. Steam simultaneously enters chamber B. when a similar cycle of operations results

PUMPKIN

(Cucurbita popo). Trailing and climbing annual herb of the order Cucurbitaceae. As a cultivated plant it was introduced to Britain from the Levant about 1570. The bristly succulent stems bear five-lobed leaves and strong spiral tendrils. The large yellow flowers are unisexual, though both male and female grow on the same plant. The females are distinguishable by the ovary below the calyx. This develops into the enormous fruit or gourd pumpkin, sometimes weighing over 20 lb. See Gourd.



Pumpkin. Fruit and male flower; inset, female flower

sometimes weighing over 20 lb. See Gourd.

PUMP ROOM. Room in the buildings attached to a mineral spring, in which the waters are drunk by persons undergoing a cure. The most famous place of the kind in England is the pump room at Bath.

PUN. Play upon the similarity of sound in words of different significance. Apart from the happy conversational puns of scores of quick-witted people, the greatest puns are those of Thomas Hood, in whose work the pun achieved an acknowledged position as a literary form. Other users of the pun as an aid to wit, more especially conversational wit, were Charles Lamb, Sydney Smith, Douglas Jerrold, and O. W. Holmes. With the mere word twisting which passed for punning in the burlesques and pantomimes of the latter part of the 19th century the pun fell into discredit.

PUNCH. Alcoholic beverage made of spirits and fruit juice, spice, sugar, and hot water. According to the spirit used, punch is called rum, brandy, or whisky punch. Wine or even ale is sometimes added. Milk punch is made of milk and rum, generally bottled and drunk cold.

PUNCH OR THE LONDON CHARIVARI. British illustrated weekly journal. Devoted to social and political satire, humour, and literary and dramatic criticism, its first issue was published June 17, 1841. Ebenezer Landells, Henry Mayhew, Mark Lemon, and Stirling Coyne were chiefly concerned with its production, and for a short time the three last named were joint editors. Then Mark Lemon became chief editor, and retained this position until his death in 1870. Succeeding editors have been Shirley Brooks, 1870-74; Tom

Taylor, 1874-80; Sir F. C. Burnand, 1880-1906; and Sir Owen Seaman. The original price of 3d was maintained until 1917, when it became 6d

PUNCH AND JUDY.

Name of an English puppet play, performed in the streets by itinerant entertainers. The performer is concealed in a portable frame covered with cloth, the upper part of which is open in front, forming a small covered stage. The puppets are moved from below by the hands of the performer, who utters the dialogue in a nasal falsetto, varied to suit the

characters. There have been various forms of the play but the hero, Punch, is always a violent, pugnacious, but droll and high-spirited rascal, hunchbacked, hook-nosed, and gaily dressed, who with the help of a stout cudgel overcomes all his enemies in succession. Punch is commonly accompanied by his wife, Judy, and a small, lively dog, Toby.

PUNCHESTOWN. Racecourse in Co Kildare, Irish Free State. It is 2 m. from Naas and 24 m. from Dublin, on the G.S. Rlys It is noted for its steeplechases.

PUNIC WARS. Series of wars fought between the Romans and the Carthaginians, or Poeni, for the mastery of the western Mediterranean. In the first Punic War (264-241 B.C.) the cockpit of the struggle was Sicily, the largest portion of which was in the hands of the Carthaginians. In the end the Romans were successful.

In the second Punic War (218-201 B.C.) the scene of the first fighting was Spain, but in 218 B.C. Hannibal led an army first across the Pyrenees and then across the Alps, descended into the valley of the Po, and won victories at Lake Trasimene, 217, and Cannae, 216, but was then checked by Quintus Fabius Maximus, surnamed Cunctator (Delayer). Hasdrubal, brother of Hannibal, made his way from Spain to Italy, with reinforcements, but was defeated and slain at the battle of the Metaurus. Scipio with a Roman army then landed in Africa in 204. Hannibal was recalled in the following year, but at the battle of Zama in 202 his army was completely defeated. By the terms of the peace concluded shortly afterwards the Carthaginians lost Spain.

The third Punic War (149-146 B.C.), provoked by Rome, ended in the fall of Carthage in 146. The city was razed to the ground, and the territory of Carthage became the Roman province of Africa. See Carthage; Hannibal.

PUNISHMENT (Lat. punire, to punish). Infliction of pain or suffering for a misdeed. From early historical times some form of definite punishment of individuals by the state has been recognized. The early forms

were based upon the principle of retaliation, i.e. the infliction of corresponding pain or suffering upon those who had caused them. This theory of punishment remained in wide practice until the middle of the 19th century, when theories of reparation and prevention gradually made headway.

The broad theory is that punishment should act as a deterrent; should penalise the offender only and not the innocent; should be elastic for any particular offence; and should be such as not to destroy the moral sense of the offender or of those carrying out the punishment. See Capital Punishment; Criminology; Flogging.

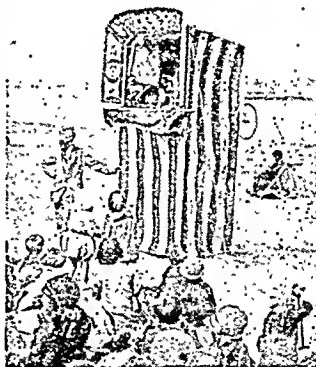
PUNJAB OR PANJAB. Prov. of India, the land of the five rivers, Jhelum, Beas, Ravi, Chenab, and Sutlej. It lies N.W. of the United Provinces, N. of Rajputana and Sind, and E. of the N.W. Frontier Province, detached from it in 1901. British Punjab comprises 99,846 sq. m., of which 11,000 sq. m. are highlands; the Punjab Indian states cover 37,059 sq. m., of which 12,000 sq. m. are highlands; the highlands being the Himalayan and Siwalik Ranges. Lahore is the capital, and Simla the hot weather capital.

The province is administered by a governor with an executive council of two members (one an Indian) for reserved subjects, and by the governor with three Indian ministers for transferred subjects. There is also a legislative council of 91 members. The Punjab University was founded in 1882 at Lahore as an examining body. It maintains an Oriental college and a law college, and, since 1920, various departments of university teaching, especially in science. Pop., Punjab proper, 20,685,024; Indian states, 4,416,036. See India; Lahore.

PUNKAH. Name for a large fan used in India. It is fixed to the ceiling and worked by a coolie. The word, a Hindustani one, originally meant a small fan, made from the leaf of the palmyra.

PUNSHON, WILLIAM MORLEY (1824-81). English preacher. Born at Doncaster, May 29, 1824, he became a local preacher, and in 1849 was ordained a minister of the Wesleyan Methodist church. Stationed at Carlisle, Sheffield, Newcastle, London, and elsewhere, he became one of the most popular preachers and lecturers in the country. From 1868 to 1873 he was in Canada, and in 1874 he was president of the Wesleyan conference. He died April 14, 1881. See portrait below.

PUNT. Flat-bottomed boat, propelled by means of a pole. In the rules and regulations governing punt races it is defined as a flat-bottomed craft without stem, keel, or sternpost, and the width at each end must be at least one-half of the width at the widest part. Subject to these conditions a punt may be any width or length. There are two styles of using the pole: the running method, and the more general one of pricking. In the former

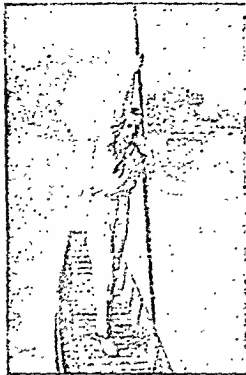


Punch and Judy show of today. Above, Punchinello of the old Italian stage



Morley Punshon, Methodist preacher

a few steps forward are taken each time the pole is pushed against the head of the river: in the latter, a stationary position is maintained. The pole should be put in the water well in front of the operator, and care is required in gathering it for the next stroke.



Punt. Position for taking a stroke in a racing punt

ostrich feathers, and gold. Of Queen Hatshepsut's expedition, about 1500 B.C., there are graphic sculptured reliefs at Deir el-Bahri.

PUPA. Resting stage in the life history of those insects which undergo a complete metamorphosis. In a true pupa the animal is quiescent; in those cases where it is more or less active it is called a nymph. See Chrysalis; Insect.

PUPIENUS MAXIMUS, MARCUS CLAUDIUS. Roman emperor, A.D. 238. When the tyrant emperor Maximinus had been declared a public enemy by the senate, Papienus was called to the throne, together with Balbinus as joint ruler. However, they could not agree; their authority was defied, and they were both murdered in a revolt of the praetorian guard. See Balbinus.

PUPIL. Opening in the centre of the iris or coloured part of the eye. The iris is provided with muscular fibres by means of which the pupil can be dilated or contracted so as to regulate the amount of light which passes into the eye. Drugs called mydriatics, e.g. atropine, when dropped into the eye cause the pupil to dilate; others called myotics, e.g. physostigmine, cause it to contract. See Eye.

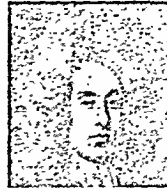
PUPPET (obsolete Fr. *poupette*, a little doll). Figure representing the character of a drama. Puppets are moved by the performer or performers, who are generally concealed and carry on the dialogue, to which the movements are timed. Marionettes (q.v.) are an elaborate form of puppet show, in which the figures are moved by strings. In other forms, as Punch and Judy (q.v.), the guignol of Lyons and the burattini of N. Italy, the figures are moved from below, generally by the hands of the operators concealed in the puppets' costumes.

PURANAS, THE. Scriptures on which Hinduism is based. The principal Puranas are 18 in number, and there are also 18 secondary ones or Upapuranas. Traditionally said to be the works of the compiler of the Vedas, they are of a later period. They include accounts of the Creation, philosophical speculations, instructions for religious ceremonies, genealogies, fragments of history, and legends about gods, heroes, and sages.

PURBECK, ISLE OF. Peninsula in the south-east of Dorset. Lying between the river Frome and Poole Harbour and the English Channel, it measures 12 m. in length and 8 m. in breadth, and is crossed from E. to W. by a range of chalk hills. In the centre is Corfe Castle, and on the S.E. coast is Swanage.

PURBECK BEDS. Name given to the rocks formed at the end of the Jurassic epoch. The rocks extend from Purbeck to Aylesbury. The series is famous for Purbeck marbles, and for building and paving stones.

PURCELL, HENRY (c. 1658-95). English composer. Born in London, he became a chorister at the Chapel Royal and a pupil of John Blow, whom he succeeded in 1680 as organist of Westminster Abbey, becoming in 1682 organist of the Chapel Royal as well. His first opera, *Dido and Aeneas*, was produced in 1675. He composed many other works for the stage, either in the form of incidental music or of complete operas. He also wrote much church music, including anthems, secular songs, and odes, as well as sonatas and lessons for strings and harpsichord. Purcell died Nov. 21, 1695.



Henry Purcell, English composer After Closterman

PURCHAS, SAMUEL (c. 1575-1626). English author. Born at Tbaxted, Essex, he became curate of Purleigh, Essex, in 1601, and vicar of Eastwood, 1604-13. From 1614-26 he was rector of St. Martin's, Ludgate Hill, London, and during this period, from many of Hakluyt's MSS., which he had inherited, he compiled



Pupa of 1. Camberwell Beauty butterfly; 2. Death's Head moth

containing a History of the World in Sea Voyages and Land Travels by Englishmen and others, 1625. Earlier he had written *Purchas his Pilgrim* and *Purchas his Pilgrimage*, works of a similar nature. Pron. *Purkas*.

PURFLEET. Village of Essex. It stands on the Thames, 16 m. E. of London on the L.M.S. Rly. There have been government powder magazines here since 1781. The harbour has wharves for landing and storing goods, and there are facilities for storing oil.

PURGATORY (Lat. *purgatorium*, that which cleanses). Theological term for a state of purification through which the souls of the redeemed who die before attaining perfection are held to pass. The doctrine was gradually developed, and is nowhere directly taught in the Bible. The Roman Catholic Church declares that those who, although saved from eternal punishment, die without having made satisfaction for their sins by the fruits of repentance, require to be purified thereafter by punishments. The pains of purgatory are graduated accordingly and can be mitigated or shortened by the prayers and alms of the faithful, and especially by the Mass. See Hell.

PURIFICATION. Festival observed by the Anglican, Roman, and other churches on Feb. 2, in full the Purification of the Blessed Virgin Mary. Alternatively called in the Prayer Book the Presentation of Christ in the Temple, it commemorates the ceremonial visit of Joseph, the Virgin, and the infant Christ to the Temple, recorded in Luke 2, 22-39.

PURIM. Jewish festival celebrating the escape of the Jews from the plot of Haman. Held on the 14 and 15 Adar, about a month before the Christian Easter, the festivities resemble those of Christmas, including presenting, feasting, and merrymaking, and the performance of religious plays. Formerly an effigy of Haman was carried in procession and finally hanged and burned.

PURITAN. Name primarily applied in the 16th century to those advanced Protestants among the clergy who wished to purify the Church of England from what they regarded as superstitious and corrupt observances retained after the severance from Rome. From the clergy it spread to their supporters among the laity, and then was applied more particularly to the sectaries who stood outside the Church altogether. Generally, though not necessarily, their doctrines were Calvinistic. Of Puritanism in its best signification Milton, Cromwell, and John Bunyan are the supreme types. The harshness and rigidity of many of the Puritan doctrines caused a severe reaction against their predominance, and after the Stuart restoration in 1660 the name of Puritan was held up to derision by such satirists as Butler. The New England states were for many years a Puritan stronghold. See Calvinism; Nonconformity.

PURLEY. Urban district of Surrey. It is 13 m. from London, of which it is a residential suburb, with stations, Purley and Purley Oaks, on the Southern Railway. Pop. 21,491.

PURPLE WORT OR MARSH CINQUEFOIL (*Comarum palustre* or *Potentilla palustris*). Perennial herb of the order Rosaceae, a native of Europe, N. Asia, and N. America. It has a long woody root-stock, and tall stems of purple-brown tint. The leaves are divided into five or seven leaflets with toothed edges. The sparse flowers have short, dark purple-brown petals and larger sepals which are purple on the inner face. The root-stock is an astringent, and yields a yellow dye.

PURSUIVANT (Fr. *poursuivant*, attendant). Title of the junior officers of arms. The pursuivants of the Herald's College, or office of arms, are bluemantle, instituted by Edward III as an extra officer to the Order of the Garter; *rouge croix*, in allusion to the cross of St. George; *rouge dragon*, and *portcullis*, both instituted by Henry VII. Pursuivants, like heralds, wear tabards. The Scottish pursuivants are named Unicorn, Falkland, and Carrick. See College of Arms; Herald.

PURVEYANCE (Lat. *providere*, to provide). Right claimed by English and other kings to requisition, when travelling through the country, whatever was needed by themselves and their retinue in the way of provisions and services. The grievance was dealt with in Magna Carta, and was the subject of much legislation from Edward I's time, but was not abolished until 1660.

PUS. Collection of dead, white blood corpuscles, resulting from inflammation. See Inflammation; Suppuration.

PUSEY, EDWARD BOUVIERIE (1800-82). British divine. Born at Pusey, Berkshire, Aug. 22, 1800, he was a son of Jacob Bouvierie, a son of the 1st Viscount



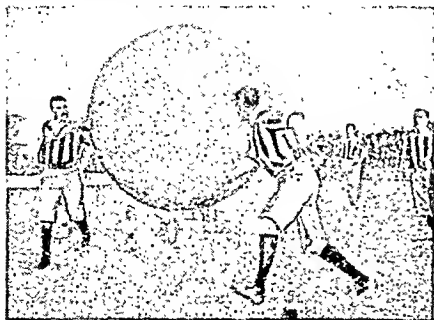
Edward Pusey, British divine

Folkestone, who took the additional name of Pusey on succeeding to estates there. Pusey became a fellow of Oriel College, Oxford, and was ordained. He made a reputation as a theologian, and in 1828 was elected professor of Hebrew at Oxford and canon of Christ Church. He died Sept. 16, 1882.

Pusey gave much time to studying the usages of the Church in the past, and in a series of sermons laid down the principles on which the High Church movement was founded. The movement was widely successful, and Pusey was its acknowledged head. He contributed to *Traacts for the Times*.

Pusey House, a theological centre in Oxford, is a memorial of his life and work. See Keble J.; Oxford Movement

PUSH BALL. Game invented by M. G. Crane, of Massachusetts, in 1894. It was introduced into Great Britain and played at



Push ball. A run by England in the England v America match at Headingley, Aug. 23, 1902

the Crystal Palace, London, in 1902, but never became popular. There are two sides of 11 players each. The goalposts are 18 ft. high and 20 ft. apart, with a crossbar at the height of 7 ft. from the ground. The ball used is 6 ft. in diameter and weighs 50 lb. Pushing the ball under the bar counts five points, and eight points if it is thrown over the crossbar.

PUSHKIN, ALEXANDER SERGEEVITCH (1799-1837). Russian poet. He was born at Pskov, May 26, 1799. His first poems were published when he was fifteen, and in 1820 Russian and Lyudmila gave him immediate fame. Visiting the Caucasus, he found inspiration for much fresh work, notably *The Prisoner of the Caucasus*, 1822. In 1824 an intercepted letter caused his banishment to his father's estate in the prov. of Pskov, and there for two years he wrote



A. S. Pushkin, Russian poet

much of his best work, including a large part of the autobiographical poem, *Eugene Onegin*, and his great tragedy *Boris Godunov*, 1825. In 1826 he was pardoned by the tsar and allowed to return to St. Petersburg. Poltava, 1828, was a fine narrative poem, including an account of Mazeppa, differing widely from that of Byron. In 1832 Pushkin published the completed *Eugene Onegin*. Wounded in a duel, Jan. 27, 1837, he died two days later.

PUTNEY. District of London. Situated on the Thames, S. of Fulham, and in the co. of Surrey, it forms part of the met. bor. of Wandsworth, is 6 m. from Waterloo, and has stations on the Southern and District Rlys. The parish church of St. Mary, by the bridge, has a 14th century tower and a fine chantry. The bridge, by Sir J. W. Bazalgette, 1886, replaced a wooden structure which superseded an ancient ferry. Putney is the headquarters of many rowing clubs and the starting-point of the Oxford and Cambridge boat race. Putney Heath adjoins Wimbledon Common.

PUTNIK, RADOMIR (1847-1917). Serbian soldier. Born in Kragujevat, and educated at the military academy, Belgrade, he took part in the Serbo-Bulgarian War of 1885, and at the same time was chief of staff of the Danube division. From 1886-92 he was professor in the Serbian military academy. Putnik's radical sympathies made him obnoxious to King Milan, and he lost his position. When Peter ascended the throne in 1903 he made him a general, and Putnik also acted as minister of war. He was commander-in-chief of the Serbs during the First and Second Balkan Wars, 1912-13, and was the real generalissimo of the Serbians during the Great War. He died May 17, 1917.

PUTTING THE WEIGHT or SHOT. Event included in the programme of most athletic meetings. According to Amateur Athletic Association rules, a competitor must stand within a 7 ft. square to cast the shot or iron ball, which should weigh exactly 16 lb. The shot must be "put" by a fair push from the shoulder, not thrown. In 1929 R. G. Hills established the British record, 49 ft. 10½ in., and in 1928 J. Kuck set up the world's record, 52 ft.

PUTUMAYO. Territory (commissary) and river of Colombia, S. America. It borders on Ecuador, and is in part claimed by that republic and Peru. It is named from the river Putumayo or Ico, which traverses it. The capital is Mocoa. The river rises near Pasto in Colombia and unites with the Amazon.

In 1909 allegations were made of gross ill-treatment of native labourers on rubber plantations owned by the Peruvian Amazon Company, a British company formed in 1907. An official inquiry was made, and joint action by Great Britain and the U.S.A. brought the punishment of some of the offenders by the Peruvian government.

PUVIS DE CHAVANNES, PIERRE (1824-98). French painter. Born at Lyons, Dec. 14, 1824, he studied under Henri Scheffer, a brother of Ary Scheffer, Delacroix, and Couture, but developed a wholly original decorative style of his own. In 1876-77 he decorated the Panthéon (Paris) with paintings of the childhood of St. Genevieve, and in 1886-88 completed his great Hemicycle of the Sorbonne. The Marseilles, Amiens, Rouen, and Lyons museums were all adorned with his flat-toned frescoes painted on canvas. He helped to found the New Salon in 1890, and became its president. He died Oct. 24, 1898.

PWLLHELI. Borough, seaport, and market town of Carnarvonshire. It stands on the N. side of Cardigan Bay, 21 m. from Carnarvon, and is served by the G.W. and L.L.S. Rlys. It has a good harbour, is a centre of the lobster and oyster fisheries, and has a coasting trade. Market day, Wed. Pop. 3,809.

PYE, HENRY JAMES (1745-1813). British poet laureate. The son of Henry Pye, M.P., of Faringdon, Berkshire, he was born in London, Feb. 20, 1745, and became M.P. for Berkshire in 1784. He retired from Parliament in 1790, and in that year succeeded Warton as poet laureate, mainly as a reward for his loyalty to Pitt, for though he had a sincere love of letters, his poetry was dull and pedestrian to a degree. He died Aug. 13, 1813.



Henry Pye, British poet laureate. After Drummond

PYELITIS (Gr. pyelos, pelvis). Inflammation of the pelvis or inner part of the kidney. Most often due to a stone in the kidney, or extension of inflammation from the bladder, the symptoms are pain in the back, irritability of the bladder, blood or pus in the urine, and intermittent fever.

PYGMALION. In Greek mythology, king of Cyprus, who made a statue in ivory of a beautiful maiden. He was so charmed with his creation that he fell in love with the statue and prayed to the goddess Aphrodite to give it life. His request was granted, and he married the maiden and had by her a son called Paphus. He is the subject of a drama by G. Bernard Shaw. See *Galatea*.

PYGMY. Name applied to diminutive peoples. The term was used by Homer and Herodotus for fabled races in Ethiopia and India, but now denotes the dwarf tribes encountered by Schweinfurth. du Chaillu,

Stanley, and others in equatorial Africa, and the negritos of S.E. Asia. See illus. p. 41.

PYLON (Gr. gateway). Massive temple portal in ancient Egypt. Developed at Thebes (XVIIIth dyn.), it usually comprised a mono-



Putting the Weight. An Oxford athlete about to cast the shot

lithic lintel, corniced, on lofty jambs, and flanked by two truncated pyramidal towers with sculptured hieroglyphs. The approach was between royal statues, often colossal, and a pair of obelisks. A notable example, Edfu, is 250 ft. wide and 115 ft. high. To-day pylons are used to carry electric cables.

PYLOS. Town in the S.W. of Messenia, ancient Greece. The modern Pylos, or Navarino (q.v.), stands at the S. end of the bay of Navarino. It has a fine harbour. Pop. 2,000.

PYM, JOHN (1584-1643). English statesman. Born at Brymore, Somerset, in 1614 he became member of parliament for Calne, and in 1625 member for Tavistock. He was one of the managers of the impeachment of Buckingham in 1626, one of the chief supporters of the Petition of Right in 1628, and in 1629 an energetic opponent of the tonnage and poundage proposals. Between 1630 and 1640 he was engaged in schemes for the settlement of Connecticut. Pym was in effect the leader of the Short Parliament of 1640, took a principal part in the impeachment of Strafford in that year, and had a share in the Grand Remonstrance of 1641. He was one of the five members whom Charles I. tried to arrest. Pym died Dec. 8, 1643.



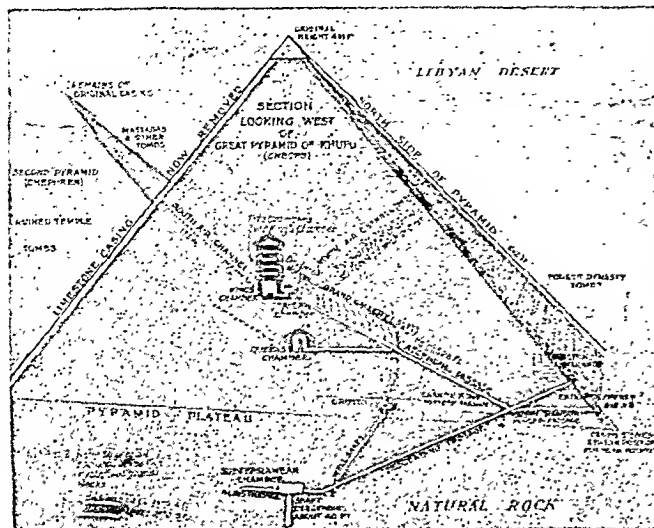
John Pym, English statesman

PYORRHOEA. Disease of the tissue surrounding the necks of the teeth. In the nature of a reaction against an external irritant, its characteristic symptom is the exudation of matter from the gums around the necks of the teeth. The gums are inflamed, the bony socket is softened, and the teeth become loose, eventually falling out.

The cause of pyorrhoea is lack of cleanliness at the necks of the teeth. As the teeth are normally coated with muco, and as this is liable to become impregnated with lime salts if it stagnates continually at the necks of the teeth, it is of special importance to eat food of an acid nature, such as vegetables and fruits. Artificial methods which help to prevent pyorrhoea consist in rubbing or brushing the gums, and the use of a slightly acid mouth-wash.

PYRAMID. Stone structure on a polygonal or square base with triangular sides sloping to an apex. Originating in early dynastic Egypt, they are gigantic tombs, each designed for a single interment. About 75 examples remain in Memphis. The design emerged from the mastaba-tomb, and a transitional form occurs in the step-pyramid at Sakkara.

At the end of the IIIrd dynasty Seneferu, when erecting at Medum a similar structure,



Pyramid. Diagram indicating the arrangement of the chambers, passages, and air channels in the Great Pyramid

added the casing blocks to the sides, and removed the funerary chapel to the outside. The step-like appearance of this pyramid results from the demolition of the casing. Seneferu's successor Khufu (Cheops) produced the great pyramid of Gizeh, one of the "seven wonders of the world." Its height was 481 ft., its base line 775 ft., and it comprised 2,300,000 blocks averaging $2\frac{1}{2}$ tons apiece, piled in 210 horizontal courses upon 12½ acres. The outermost covering has disappeared. The entrance, 48 ft. up the N. face, was sealed by a block protecting passages to three main chambers. From the entrance a passage descends to an unfinished chamber 101½ ft. below the plateau level. This was abandoned, and an ascending passage formed at 60 ft. from the entrance. Thence a horizontal gallery diverges to the so-called queen's chamber. The upward ascent leads to the king's chamber, with a granite sarcophagus.

The second Gizeh pyramid, erected by Khafra, was 454 ft. high, with a base of 708 ft. The third, Menkaura's, was 219 ft. high, with a base of 356½ ft. Menkaura also set up a brick pyramid at Dahshur. At Abusir and Sakkara stand the pyramids of Vth and VIth dynasty kings.

The battle of the Pyramids was fought near Embabah, July 21, 1789. In it Napoleon defeated the Mamelukes.

PYRAMIDS. Game played on a billiard table. Fifteen coloured balls are arranged in the form of a compact pyramid, or triangle, the ball forming the apex of the triangle resting on a spot, called the pyramid spot, midway between the centre spot and the billiard spot, and the base of the triangle towards the top cushion. The game is usually played by two persons, and consists of winning hazards, the object being to pocket more of the coloured balls than one's opponent.

PYRAMUS. In Babylonian legend, a youth who loved a maiden named Thisbe. The two agreed to meet by the tomb of Ninus and flee together. Thisbe, arriving first, was frightened away by a lion. Pyramus, thinking she had fallen a victim to the lion, killed himself. Thisbe, returning to find Pyramus dead, killed herself. The story is told in Ovid's *Metamorphoses*, and is made use of by Shakespeare in *A Midsummer Night's Dream*.

Pyargyrite. In mineralogy, one of the valuable silver ores. See Silver.

PYRENEES (Fr. Pyrénées; Sp. Pirineos). Mt. range of S.W. Europe, dividing France from Spain. Extending from Caho de Créens on the Mediterranean to Fuenterrabia on the

Bidasosa, just beneath the Pyrenees.

PYRETHRUM. Garden name for several species of Chrysanthemum, especially the gold feather (*C. praecox*). A native of the Caucasus, it was introduced to Britain in 1804. It is a perennial herb, about 2 ft. high, with aromatic yellow leaves and daisy-like white flowers with yellow centres.



Pyramids of Gizeh. Behind the small pyramid stands the Third Pyramid, on its right the Second, and beyond that the Great Pyramid

PYROXENE. In mineralogy, the name given to a group of silicates. The chief pyroxenes are augite, an aluminium pyroxene; diopside, a calcium manganese; and hedenbergite, a calcium-iron pyroxene. Some of them are cut and polished as gem stones.

PYRRHUS (318-272 B.C.). King of Epirus. Succeeding his father in 306, he was driven into exile in 301, but soon regained the throne. In 281 the inhabitants of Tarentum in S. Italy, then at war with Rome, appealed to Pyrrhus for help. The Romans were defeated at Heraclea, 280, and at Asculum, 279, but at such cost that the term "Pyrrhic victory" has passed into a proverb. An invitation from the Sicilian Greeks for assistance against the Carthaginians took Pyrrhus over to Sicily in 278. The Sicilian campaign was at first successful, but in 276 he returned to Tarentum. His last battle with the Romans took place at Beneventum in 275, and resulted in a defeat. Later, having failed to take Sparta, he attacked Argos, but in the street fighting in that city Pyrrhus was killed by a tile thrown from one of the houses by an old woman.

PYTCHLEY. English hunt. Founded about 1750, with Earl Spencer as its first master, it hunts in Leicestershire and Northamptonshire, from Market Harborough to Northampton.

Bay of Biscay, its length is 270 m. and breadth between 25 m. and 90 m. The highest point is Pic de Nethou (11,200 ft.). Apart from the high-roads and rlys. from Bayonne to San Sebastian, and from Perpignan to Figueras, there are only two carriage-ways across the Pyrenees, though there are some fifty footways. The last link of the railway over the Pyrenees from Pau to Saragossa was opened in July, 1928, and the line from Toulouse to Barcelona in Feb., 1929.

PEACE OF THE PYRENEES. This was a treaty signed in Nov., 1659, between France and Spain, on the Isle of Pheasants in the

The kennels are at Brixworth. The Woodland Pythley, an offshoot, was established in 1874 to hunt the part of the country N. and E. of that now bunted by the older pack. The kennels are at Brigstock. Pron. Pitcheley.

PYTHAGORAS (b. c. 582 B.C.). Greek philosopher. Born at Samos, he settled at Crotona, in Italy, about 529 B.C., and there founded a school or society, half-religious, half-philosophical. His disciples underwent a comprehensive training in gymnastics, mathematics, and music, practised vegetarianism, and believed in immortality and the transmigration of souls. Pythagoras found the first principle of the universe in number. He is regarded as the real founder of the science of geometry, and also as the discoverer of the musical octave. The proof of the famous 47th proposition of Euclid is attributed to him.

PYTHON. In Greek mythology, the serpent born of the mud left by the flood which overwhelmed the world in the time of Deucalion (q.v.) It was killed by Apollo.

PYTHON. Genus of large serpents found in the tropical parts of the E. hemisphere. They belong to the boa family. None of them has poison fangs, but the jaws carry sharp teeth. Usually pythons range from 15 to 20 ft. in length, and have been known to attain 30 ft., with a thickness of body in proportion. They kill their prey by constriction, and live among trees near water, capturing their prey—small deer, goats, and other animals—by night.

Pyx (Gr. pyxis, box). In the Roman Catholic church, vessel in which the sacrament is reserved for administration to the sick.

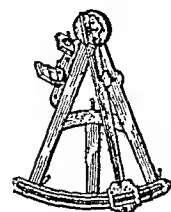
PYX, TRIAL OF THE. Periodical testing of gold and silver coins issued by the English mint. One gold coin out of every 2,000 minted and one silver coin out of every 60 lb. Troy are tested. The trial takes place in the hall of the Goldsmiths' Company, London.

Q. Seventeenth letter of the English and Latin alphabets. It has the sound of hard c (k), and in English is always accompanied by u: pron. kw. In the termination -que, as in grotesque, opaque, e is mute. Quay is pron. kee. See Alphabet.

Q-BOAT. Name given in the Great War to a ship used to trap submarines. Q-boats masqueraded as merchantmen, and all kinds of camouflaging devices were employed to conceal guns, wireless aërials, etc.

Quadragesima (Lat. quadragesimus, fortieth). Latin name for the first Sunday in Lent, or for the 40 days' fast before Easter.

QUADRANT. Instrument formerly used for fixing the position of a vessel at sea by taking angles. It has been superseded by the sextant (q.v.). The quadrant electrometer, invented by Lord Kelvin, is an instrument for measuring electricity.



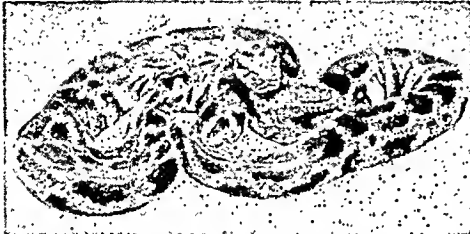
Quadrant formerly used in navigation
By courtesy of
Negretti & Zambra

QUADRILATERAL (Lat. quatuor, four; latus, side). Name used for four fortresses grouped for strategic purposes. That composed of the fortified towns of Peschiera, Mantua, Legnago, and Verona enabled the Austrians to maintain their hold on the north of Italy.

Other quadrilaterals were those of N.E. Germany, whose fortresses were Königsberg, Danzig, Posen, and Thorn, and of Poland, consisting of Brest-Litovsk, Ivangorod, Novo-Georgievsk, and Warsaw.

QUADRILLE (It. squadra, a square). Square dance of five figures. It originated in the French ballets of the 18th century, and was later transferred to the ballroom. It is danced by four couples.

QUAESTOR (from Lat. quaerere, to ask, inquiri). Magistrate of ancient Rome. Their number was originally two, but by the last period of the Republic it had increased to 40. Under the empire the number was reduced to 20. A quaestorship was the first step in a public career.



Python. Coiled specimen of the Indian python
W. S. Berridge, F.R.S.

QUAGGA. Name applied to a dark variety of South African zebra. It became extinct about 1870. The name was onomatopoeic, being the natives' reproduction (quā-hā) of the animal's barklike neigh, quā-hā-hā, and was applied by them to zebras in general.

The name is also given to Burchell's zebra. **QUAIL** (*Coturnix communis*). Small game bird about the size of a thrush. Closely related to the pheasant and partridge, it is a native of Europe, Asia, and N. Africa. It is much like a diminutive partridge in shape and general coloration. Vast numbers of the birds are netted in Mediterranean countries during the spring and exported alive for food.

QUAIN, SIR RICHARD (1816-98). British physician. Born at Mallow, co. Cork, Ireland, Oct. 30, 1816, he became house surgeon at University College Hospital, London, 1840. In 1863 he became a member of the general medical council, and its president 1891, in which year he was made a baronet. He was the editor of the Dictionary of Medicine, 1882, and died March 13, 1898.



Quake Grass. Stem and flower spikes

Richard Quain (1800-87), his cousin, was president of the Royal College of Surgeons, 1868, and Jones Quain (1796-1865), another cousin, was famous as the author of Elements of Descriptive and Practical Anatomy, published in 1828.

QUAKE GRASS (*Briza media*) or **TOTTERORASS**. Perennial grass of the order Gramineae. A native of Europe, Asia, and Africa, it has creeping, underground stems and flat leaves. The flowering stems are much branched, and each of the flattened, oval, more or less purple and shining spikes is borne on a long, hair-like stalk.

Quakers. Name originally given in derision to members of the Society of Friends (q.v.).

Quantock Hills. Range in Somerset. The culminating summit is Wills Neck, 1,262 ft.

QUANTUM THEORY. Hypothesis put forward in 1900 by the German physicist Max Planck (q.v.). His law of radiation asserts that the energy of radiation is given out by a radiating body discontinuously, in definite fixed amounts or "quanta," these quanta being proportional to the frequency of the vibrations. Planck's constant, represented by *h*, is the quantity which, divided by the oscillation period, gives the unit of energy.

The amount of energy in the quantum is $h\nu$ where ν is the frequency of vibration.

QU'APPELLE. Town of Saskatchewan, Canada. It is 320 m. W. of Winnipeg, on the C.P.R., and is the centre of a prosperous farming district. It is named after an old post of the Hudson's Bay Co. Pop. 688.

QUARANTINE (Fr. quarantaine, period of 40 days). Period during which ships, goods or persons coming from countries where infectious disease prevails are interdicted from communication with the shore. The term is derived from the fact that usually the period was made to cover 40 days. In Great Britain, the Quarantine Act of 1825 has been replaced by the Public Health Act, 1904. There are regulations under which dogs from abroad are kept in quarantine for a definite period.

QUARITCH, BERNARD (1819-99). British bookseller and publisher. Born at Worbis, in Saxony, of Slavonic origin, April 23, 1819, he settled in London in 1842 and was naturalised in 1847. After working with the publishing house of Bohn, and in Paris, he started as a second-hand bookseller in London, at Castle Street, Leicester Square, removing in 1860 to Piccadilly, where he made his business one of the chief book buying centres of the world.



Quail, a game bird which breeds in the British Isles

His son, Bernard Alfred (1871-1913), also an able collector, joined the business in 1889, and in 1907 transferred its headquarters from Piccadilly to Grafton Street, London, W.

QUARLES, FRANCIS (1592-1644). English poet. Born at Romford, Essex, May 8, 1592, he was secretary to Archbishop Usher in 1629, and chronologer to the city of London from 1639 until his death, Sept. 8, 1644. He is best remembered by his Emblems (moral and religious verse), 1635, and by his prose Enchiridion, 1641, a collection of notable essays and aphorisms. He left a pleasant memory in the minds of all who knew him, and while one of the metaphysical poets, full of strained conceits, and something of a Puritan, he possessed a lively fancy and much felicity of expression. Some of Quarles's religious verses were for long included in English hymnals.



Francis Quarles.
English poet

Quarry Bank. Urban dist. of Staffordshire. Coal mining and iron working are carried on. Pop. 7,400.

QUARRYING. Removal of portions of rock from open pits or caverns cut in the earth for that purpose. The word is connected with the Lat. quadratus, squared, a place from which squared stones are cut.

Methods of quarrying depend mainly on the position of the rock, its bardness, its structure, and the purpose for which it is required. A hill slope is the best site, and in many large quarries the stone is cut out so that the cut surface of the rock is stepped or terraced. The blocks of stone are generally lifted out of the quarry with cranes, and carried to a railway or harbour by trucks run on rails, though in some cases the material is carted away or is let down a hill slope with rope gear. The marble quarries of Carrara (q.v.) are famous.

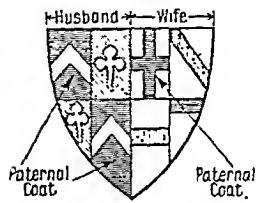
QUART. British measure of liquid capacity, the fourth part of a gallon. It contains 69.3185 cub. ins., or $2\frac{1}{2}$ lb. of distilled water. The old English quart for wine contained 57.75 cub. ins. and for beer 70.5 cub. ins. The American quart contains 67.2 cub. ins.

QUARTER. As a measure of weight or capacity, the fourth part of a larger measure. e.g. 28 lb. the quarter of a hundredweight. Used for corn measure, it equals eight bushels. The four principal points of the compass are known as the four quarters.

In the plural the term is used for the place where soldiers are accommodated; hence probably the phrase to give quarter, implying that the vanquished will be sent to the soldiers' quarters instead of being killed. Nautically, the quarter is that part of the ship's side situated between the mainmast and the stern.

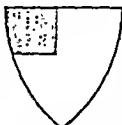
QUARTER DAY. The days which mark the four quarters of the year. In England and Ireland they are Lady day, Mar. 25; Midsummer day, June 24; Michaelmas day, Sept. 29; and Christmas day, Dec. 25. In Scotland quarter days are Feb. 2, May 15, Aug. 1, and Nov. 11.

QUARTERING. In heraldry (q.v.) the division of the shield into four or more parts, each containing a coat of arms, to indicate direct descent, by intermarriage, from heiresses or co-heiresses of armigerous families. Anciently, quartering was somewhat loosely employed, but in modern grants of family arms the "heirss" principle is strictly adhered to.



Quartering. Heraldic method of showing alliances

Given correct conditions, a husband's quarterly coat may be impaled with the quarterly coat of his wife, their respective quarterings commencing from the top dexter corner of each half of the divided shield. When impalement is unused, quarterings are read by rows across the whole shield. The foreign significance of "seize quarters" is almost unknown in England. The canton, or quarter, is often a mark of difference.



Quarter (canton), heraldic ordinary

QUARTERMASTER. Regimental officer, generally with the rank of lieutenant. He receives, issues, and accounts for rations, stores, and ammunition and is assisted in this by quartermaster-serjeants (Q.M.S.). A quartermaster-general (Q.M.G.), is a general officer in charge of the supply departments of the army, having under him assistant quartermasters-general (A.Q.M.G.).

QUARTERN. Old English term for a measure of capacity, as the fourth part of a pint, the fourth of a peck or stone. A 4-lb. loaf is known as a quartern loaf. See Gill.

QUARTER SESSIONS. English court of law, so called because it usually meets four times a year. In the counties it consists of the justices of the peace for the shire, riding, or other division thereof, and they appoint two of their number as chairman and vice-chairman respectively. Certain cities and boroughs have also a court of quarter sessions, presided over by the recorder.

These courts hear appeals from the ordinary magistrates' courts and appeals about rating and licensing matters. They try indictable offences except treason, homicide, and criminal libel. From their decision a person can appeal to the court of criminal appeal, except when quarter sessions sits solely as a court of appeal from a court of summary jurisdiction.

QUARTERSTAFF. Weapon formerly much used by the English. It was a staff about $1\frac{1}{2}$ ins. in diameter, from 6 ft. to 8 ft. in length and tipped with iron at each end. It was grasped in the middle by one hand and by the other a quarter way along, now at one end and now at the other, as policy dictated, the shifting of the hand giving it a circular play.

QUARTET. Musical composition written for four solo voices or instruments. The former may be for male or female voices alone, or for any combination of the two, the most usual being for soprano, alto, tenor, and bass: the latter, in most instances, is for strings alone, consisting of 1st and 2nd violins, viola, and violoncello. When the pianoforte is used and the 2nd violin omitted, the combination is known as a pianoforte quartet. The term is also used of the performers collectively.

QUARTZ. In geology, name of a mineral formed of silica, SiO_2 , crystallising in the hexagonal system. When pure, quartz is colourless and known as rock crystal. One of the most widely distributed of all minerals, quartz is the principal ingredient of sandstones and a constituent of many clays, granites, and porphyries.

By heating in the oxyhydrogen blowpipe quartz can be fused and drawn out into long threads which are used in the making of torsion balances, galvanometers, etc. Its hardness and transparency when pure make it an excellent material for spectacles, lenses, etc., and it is used in the making of sandpaper, glass, refractory bricks, and cements.

The name quartzite is given to a metamorphic rock composed chiefly of quartz.

QUASSIA (*Quassia amara*). Tree of the order Simarubaceae. A native of tropical America, the alternate leaves are broken up into a double row of leaflets, not unlike those of the ash. The large, tubular, scarlet flowers are clustered. The wood is intensely bitter, and was formerly used as a tonic and in dysentery, but the quassia of modern medicine is furnished by an allied tree (*Picraena excelsa*), a native of Jamaica.

QUATERNARY. In geology, name given to the period of time following the Tertiary. The term is in some respects vague, and various alternative terms have been suggested for the period. Sir A. Geikie divided it into a human period and a Glacial period or the Pleistocene. See Ice Age; Pleistocene; Pliocene.

QUATRAIN (Fr. *quatrain*, four). Complete expression of a single thought in four rhymed lines, as in these, written by the earl of Rochester on Charles II's bedchamber door:

Here lies our sovereign lord the King,
Whose word no man relies on;
He never says a foolish thing,
Nor ever does a wise one.

QUATRE BRAS. Village of Belgium, in the prov. of Brabant. Its name comes from its position at the meeting of the Brussels-Charleroi and Namur-Nivelles main roads, $2\frac{1}{2}$ m. S. of Genappe, and it is famous as the scene of the battle of June 16, 1815, preceding the battle of Waterloo (q.v.). Napoleon ordered Ney to attack the allies at Quatre Bras while he engaged Blücher at Ligny. Wellington prevented the French from scoring a success. The British and their allies lost 4,500 men.

QUATREFOIL (Fr. *quatre*, four; *fenille*, leaf). In architecture, an opening in tracery. It consists of four lobes tangent to the inner side of a circle and meeting each other at

cusps within the circle. Square panels inscribed with a quatrefoil are a common ornament in Gothic architecture. See Gothic Architecture.



Quarterstaff, as used in medieval England. From a print illustrating the fight between Robin Hood and the Tanner

QUAVER. Musical note represented thus: f ; its value being one-eighth of a semibreve. Two or more quavers may be grouped thus: f . Its corresponding rest is r . So far as can be learned, the quaver was invented during the 15th century, being known at first as Chroma, Fusa, or Unca, and later as the Lesser Semiminim. In America and Germany it is called an eighth note, in France it is called a crook or hook (*croche*).

QUAY. Embarkation and landing place, formed alongside a river or seashore, or in a dock or harbour, against which ships may berth. Quays are usually equipped with appliances for the loading and unloading of ships. (See Dock.) Pron. Kee.

Queanbeyan. Town of New South Wales, Australia, in Murray co. It is the rly. junction for Canberra. Pop. 4,020.

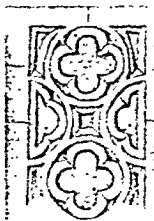
QUEBEC. Prov. of Canada. Its area is 594,434 sq. m., of which 583,895 sq. m. are land. The population in 1921 was 2,361,199 (more than three-quarters of French descent). Quebec is the capital. In 1927 an area of some 110,000 sq. m. in the Labrador peninsula was transferred to Newfoundland. Its rivers, excluding the St. Lawrence, are not long. There are numerous lakes.

Quebec produces wheat, barley, oats, and cereals, but is more famous for its horses, cattle, and sheep. From the prov. the world obtains nearly all its asbestos. Much land is covered with forests, and lumbering is an important industry, as is the production of pulpwood. For the industries water power is abundant. The St. Lawrence is the great highway, except in winter. The more populous parts are well served with rlys.

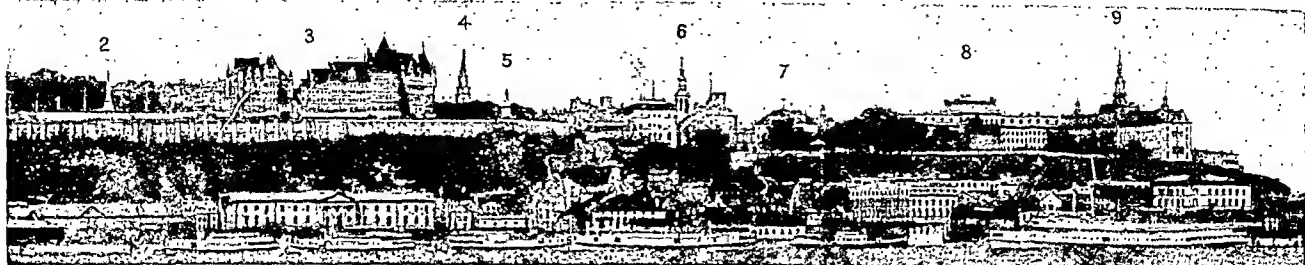
In the Dominion Parliament Quebec is represented by 65 members. Its local affairs are under a lieutenant-governor, a premier and cabinet. The legislature consists of a council of 24 nominated members and an assembly of 85 elected members. There are separate systems of public education for the Protestants and Roman Catholics. The early history of Quebec is really that of Canada (q.v.).

QUEBEC. City of Canada and capital of Quebec prov. It stands on the N. bank of the St. Lawrence on the top of bold cliffs with the river, over a mile wide, at their base. A cantilever bridge crosses the St. Lawrence. Opened in Dec., 1917, it has a main river span of 1,800 ft., and a total length of 3,240 ft. It carries two railway tracks and a footwalk. Outside the walls, overlooking the St. Lawrence, are the Plains of Abraham.

The most important churches are the R.C. cathedral, Notre Dame des Victoires, the Anglican cathedral, and St. Matthew's. Laval University has a library and a picture gallery. The city's finest promenade is Dufferin Terrace, overlooking the St. Lawrence: here is a statue of Champ-lain. The buildings of the legislature form a fine block standing in large grounds. Quebec has a fine harbour and there are extensive docks. Timber is an important industry.



Quatrefoil, architectural example



Quebec. Panoramic view of part of the city as seen from across the St. Lawrence River. 1. Colonnades of Dufferin Terrace, a promenade 1,400 ft. long. 2. Obelisk to Wolfe and Montcalm. 3. at the extreme end of Dufferin Terrace. 4. Chateau Frontenac, the great C.P.R. Hotel. 5. Champlain Statue. 6. Roman Catholic cathedral. 7. Archbishop's Palace. 8. The Seminary. 9. Laval University.

The manufactures include machinery, boots and shoes, leather goods, etc.

Quebec was founded in 1608 by Champlain, the name, an Indian one, referring to the narrowing of the river here. Earlier it was an Indian settlement. Pop. 131,000.

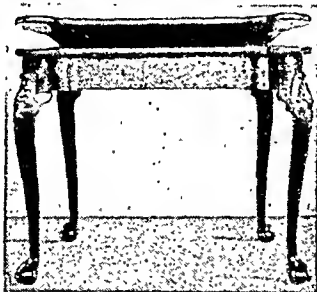
Quebec was captured by the British after a victory over the French on the Plains of Abraham, Sept. 13, 1759. Both the leaders, Wolfe and Montcalm, were killed. The Plains, on which stands a monument to Wolfe and Montcalm, became a public park, 1908.

QUEBRACHO (*Aspidospermum quebracho*). Tree of the natural order Apocynaceae, a native of S. America. Its bark yields the drug known as white quebracho.

QUEEN (Anglo-Saxon *ewen*). Term applied to a woman ruler. A queen regnant rules in her own right; a queen consort is the wife of a ruling king; a queen dowager is the widow of a deceased king. While some countries bar a female from succession to sovereignty, e.g. by the Salic Law, others take a queen only in default of heirs male. In the British Empire a princess succeeds when she has no brothers. See King; Mary; Royal Family.

QUEEN ANNE. Style of architecture, furniture, and silverware that came into vogue in England during the reign of Anne. In architecture, Blenheim Palace, designed by Sir John Vanbrugh (q.v.), is an example of importance.

In furniture, the tendency was towards comfort and homeliness. Walnut was the principal wood, but larger pieces such as the settee were fashioned in oak, as they had been in Jacobean times. Chairs generally show the open type of back, with a fiddle or urn shaped splat. Claw-and-ball feet were common. The seat was generally loose and stuffed. Cabinets, chests of drawers, grandfather clocks, were ornamented with marquetry. Veneering also came into practice. Black and gold lac decoration was introduced from the East, through Holland.



Queen Anne card table, in oak veneered with walnut

By courtesy of the Director, Victoria & Albert Museum, S. Kensington

QUEEN ANNE'S BOUNTY. Fund derived from the first-fruits and tenths of certain clerical incomes. Formerly part of the crown revenue, it was transferred in 1704 by Anne to the Church of England. The money has been used to improve the value of poor livings. The payments, with few exceptions, had been extinguished in 1926. The amount available from capital for the relief of dilapidated assessments on benefices not exceeding £250 in net annual value was £17,061 in 1928.

QUEENBOROUGH. Mun. bor. and commercial port of Kent. On the Isle of Sheppey, it stands at the junction of the Swale and the Medway, 2 m. from Shoerness, and is

served by the S.R. Glass and cement are manufactured. Queenborough is named after Philippa, wife of Edward III. Pop. 3,073.

QUEEN CHARLOTTE ISLANDS. Insular group off British Columbia. They are 130 m. N.W. of Vancouver. Forests abound, anthracite coal is mined, and gold, copper, and iron ores are found. The whites, few in number, fish for halibut in Hecate Strait; the Haida Indians number less than 700. Jedway, Kedda Bay. Queen Charlotte City, and Skidegate are the chief settlements.

Queen Charlotte Sound is a channel of the Pacific coast of Canada. It separates the N.E. of Vancouver Island from the mainland of Canada.

QUEEN ELIZABETH. British battleship, the nameship of a class and the flagship of the Grand Fleet in 1917-18. She was built at Portsmouth Dockyard, and joined the active list Dec. 22, 1914. The first British warship to carry 15-in. guns and to be driven entirely by oil fuel, she is 650 ft. long, 92 ft. in beam, displaces 27,500 tons, and has a speed of 25 knots. In her fuel bunkers 4,000 tons of oil can be carried. She served at the Dardanelles, 1915. It was aboard the Queen Elizabeth that the surrender of the German Fleet was arranged.

QUEENHITHE (Mid. E. *hithe*, haven). London street and dock. In the reign of Elizabeth the dock was the chief water gate of the city, and the tolls levied on corn, etc., landed here formed part of the revenue of queens consort.

QUEEN MARY. British battle cruiser. Of the Lion type, she was sunk by gunfire at Jutland, 1916. Completed in 1913, her details were: length 720 ft., beam 88 ft., displacement 27,000 tons, designed engine power 75,000 h.p., and speed 27 knots. She carried eight 13-in. and sixteen 4-in. guns. She was present at the battle of Heligoland Bight, Aug., 1914. See Lion.

QUEEN MARY LAND. Coastal tract of Antarctica. It lies E. of Kaiser Wilhelm II Land, and was explored by the Mawson Australasian expedition of 1911-14.

QUEEN'S, AND QUEEN'S OWNS. The Queen's is the popular designation of the Royal West Surrey and Royal West Kent regiments and the 16th Lancers. Queen's Own is a designation of the 4th and 7th Hussars

and Cameron Highlanders. The 9th Lancers is officially the 9th (Queen's Royal) Lancers.

QUEENSBERRY, MARQUESS OF. Scottish title held by the family of Douglas since 1682. In 1633 Sir William Douglas, lord of Drumlanrig, was created earl of Queensberry. His grandson, William, the 3rd earl, was made a marquess in 1682 and a duke in 1683. In 1778, when the English titles became extinct, the Scottish titles and the estates passed to William Douglas, earl of March, a descendant of the 1st duke. In 1810 the dukedom, and with it the estates, passed to the 3rd duke of Buccleuch and the marquessate to Sir Charles Douglas.

The 8th marquess was the sportsman who drew up in 1867 the boxing rules called by his name. The peer's eldest son is known by the courtesy title of Viscount Drumlanrig.

QUEENSBERRY, DUKE OF. Scottish title of the family of Douglas from 1683 to 1810. James Douglas, the 2nd duke (1602-1711), was the high commissioner who did a great deal to bring about the union of the English and Scottish parliaments in 1707. He was then made duke of Dover and became a secretary of state. He died July 6, 1711.

In 1778 William Douglas (1724-1810) became the 4th duke. Known as "Old Q," he was a prominent sportsman and was notorious for his extravagances, gallantries and eccentricities. On his death, Dec. 23, 1810, the dukedom passed to the duke of Buccleuch.



4th Duke of Queensberry

QUEENSBURY OR QUEENSHED. Urban dist. of Yorkshire (W.R.), on the L.N.E.R. Stone and coal are worked, and there are manufactures of woollens and worsteds. Pop. 5,870.

QUEEN'S COLLEGE. College of the university of Oxford. Its buildings are in High Street, and its head the provost. It was founded in 1340 by Robert de Eglesfield, chaplain to Philippa, queen of Edward III, and has always had a special connexion with the north of England. It is famed for the Christmas ceremony of bringing in the boar's head at dinner.

Queens' College, Cambridge, was founded by one queen, Margaret of Anjou, and re-founded by another, Elizabeth Woodville. Its old buildings have been restored.

Queen's College, Harley Street, London, is a college for women founded in 1848.

Queen's County. Inland co. of the Irish Free State, since 1922 known as Leix (q.v.).

QUEENSFERRY, SOUTH. Burgh and seaport of Linlithgowshire, Scotland. It stands at the S. end of the Forth Bridge, 9 m. from Edinburgh, on the L.N.E.R. Near are Dalmeay and Hopetoun House; also Barnbough and Dundas Castles. The name is due to the fact that from here Margaret, wife of Malcolm Canmore, frequently crossed the Forth when travelling between Edinburgh and Dunfermline. It was made a burgh in 1363. Pop. 2,193. Opposite South Queensferry, in Fifehire, is the bathing resort of North Queensferry.

QUEENSLAND. State of the Australian Commonwealth. It has an area of about 670,500 sq. m. and an estimated pop. (1929) of 927,000. More than two-thirds of its area is within the tropics. Brisbane is the capital.

Sheep and cattle rearing and dairy products are important. Wool is a staple industry and timber is plentiful. The chief crops are maize, sugar canes, bananas, and pineapples, while the tobacco and cotton crops are increasing. Gold and tin are mined, and copper, manganese, and iron ores obtained. Coal is mined at Ipswich and other centres. Thursday Island is a centre for the pearl and bêche-de-mer fishery. A number of important power and irrigation and rly. extension schemes are being undertaken.

The governor is assisted by a prime minister and cabinet and legislative assembly of 72 members elected for three years by adult suffrage. The upper house was abolished in 1922. Till 1859 Queensland formed part of New South Wales. See Australia, map.

QUEENSTOWN OR COBE. Urban dist. and seaport of co. Cork, Irish Free State. It is situated in Cork Harbour, with a station on the G.S. Rlys. It stands on the slope of a hill, and its finest building is the R.C. cathedral. A naval station, pleasure resort, and yachting centre, it was known as Cove of Cork until, after a visit by Queen Victoria, in 1849 it became Queenstown. Pop. 7,077.

QUEENSTOWN. Town of Tasmania, Australia. It stands on the Queen river and contains reduction works for copper mined at Mt. Lyell, saw mills, and brick works. Pop. 2,920.

QUEENSTOWN. Town of the Cape Province, S. Africa. It stands on a plateau, 3,500 ft. high, and 154 m. from East London. There is a botanic garden. The town is the centre of a district producing wheat and wool. Pop. (whites) 5,232.

QUEST. British exploration ship. Built in Norway, 1917, of oak, pine, and fir, she was first used as a sealer in the White Sea. She is 111 ft. long, 23 ft. in beam, and about 200 tons net burthen. Her sides are 2 ft. thick of solid oak, sheathed with steel. In 1921, after being altered and refitted at Thornycroft works, Southampton, she was used to convey the Shackleton-Rowett Antarctic expedition. In July, 1930, she sailed with an expedition to find an Arctic airway to Canada.

QUETTA. Capital of Baluchistan. The town is situated 5,500 ft. above sea level in British Baluchistan, and is a military outpost guarding the Bolan Pass, through which the strategic rly. from Quetta goes to the Indus valley. A residency was established here in 1876. The town is a trade centre, but the winter cold drives away about a quarter of the population. Pop. 49,000.

QUETZAL OR QUEZAL (Pharomacrus mocinno). Bird of the trogon family, inhabiting the central American uplands from Guatemala to Panama. Its name is derived from an ancient Nahuatl word meaning green feather. The cock bird, the size of a dove, is adorned with carmine breast feathers and upper tail-coverts of metallic green.

The ancient Mexican chiefs forbade the killing of the birds, whose plumes are represented on Maya pottery, sculpture, and picture writings. The bird forms part of the national arms of Guatemala.

QUETZALCOATL. One of the chief gods of ancient Mexican mythology, god of the air and of wisdom, and teacher of the arts. His name signified serpent clothed with green feathers. He was said to have ruled in Mexico in a time of peace and plenty.



Quetzalcoatl. Image of the Mexican god

There are firm, fine sands and a small bathing establishment. Pop. 3,469.

The battle of Quiberon Bay was fought, during a gale, between the British and the French, Nov. 20, 1759, during the Seven Years' War. The British fleet of 33 sail under Hawke, by its defeat of the French (33 sail) under Conflans, shattered the French plan of invading England.

QUICKLIME. Common name for calcium oxide, CaO. It is prepared by burning limestone (calcium carbonate) mixed with coal in kilns. The limestone loses its carbonic acid gas during the process. *Quicklime is employed for making mortar and cement for building purposes.* Slaked lime is made from quicklime by pouring water over it, much heat being evolved during the process. The product, known chemically as calcium hydroxide, is used for making lime-water and is employed in chemical industry. See Lime.

QUICKSAND. Name given to a loose sand in which heavy bodies easily sink. Such sands are composed of small particles and water and do not coalesce under pressure. They are most usually found near the mouths of rivers and in glacial deposits.

Quicksilver. English term, still used, for the metal mercury (q.v.).

QUETISM. Form of mysticism which has arisen at various times in the Church and in several non-Christian religions such as Buddhism. The Quietist practises entire resignation of self in thought, desire, and deed, and in this way seeks such union with God that the Will of God shall take the place of his own will, and his life be identified with the divine operation. The name first came into use through the teachings of a Spanish priest, Miguel de Molinos, author of *The Spiritual Guide*, 1675. Madame Guyon (q.v.) taught quietism in France and was imprisoned for it.

QUILIMANE, KILIMANE, OR QUELIMANE. Port in Mozambique (Portuguese East Africa). It possesses an excellent harbour, and a rly. is being constructed to the Nyasaland Protectorate. Pop. 3,097, including about 350 Europeans.

QUILLER-COUCH, SIR ARTHUR THOMAS (b. 1863). British novelist and critic. He was born at Polperro, Cornwall, Nov. 21, 1863, and educated at Clifton and Trinity College, Oxford. His many novels and stories include *Dead Man's Rock*, 1887; *Troy Town*, 1888; *The Splendid Spur*, 1889; *The Detectable Duchy*, 1893, and others dealing chiefly with Cornish life and scenes. He finished Stevenson's *St. Ives*, 1899. His fine literary taste

and judgement are strikingly manifested in his critical studies, such as *Adventures in Criticism*, 1896, and in his anthologies. Knighted 1910, in 1912 he was made King Edward professor of English Literature at Cambridge. His lectures, e.g. *On the Art of Writing*, 1916, *On the Art of Reading*, 1920, and his *Essays in Criticism*, 1924, circulated widely in volume form. In 1929 appeared *Studies in Literature*. Pron. Cooch.

QUILLWORT OR MERLIN'S GRASS (*Isoetes lacustris*). Aquatic perennial herb of the order Selaginellaceae, a native of Europe, W. Siberia, and N. America. It grows at the bottom of lakes, and has a corn-like base, from which spring stiff awl-shaped leaves composed internally of four tubes with transverse partitions. The spore capsule of the quillwort is borne on the dilated bases of the outer leaves.

QUIMPER. Town and seaport of Brittany. The capital of the department of Finistère, it stands on the river Odet, 38 m. from Brest. The church of S. Corentin, once a cathedral, is one of the finest Gothic buildings in Brittany, having a beautiful lady chapel and a fine choir. The place has a coasting trade and some manufactures. In early times Quimper was the capital of Cornouailles. Pop. 21,000. See illus. p. 307

QUIN, JAMES (1693-1766). English actor. Born in London of Irish descent, Feb. 24, 1693, and educated in Dublin, he came into notice by his rendering of Bajazet in *Tamermagne* at Drury Lane Theatre, 1715, and by killing a fellow actor in a duel. For many years he played leading parts at Lincoln's Inn Fields and Covent Garden. He died at Bath, Jan. 21, 1766.



Quince. Branch with leaves and fruit

QUINCE. Trees and shrubs of the order Rosaceae, genus *Pyrus*. Natives of Europe, Japan, and China, the common species was introduced into Britain in 1573. It is related to the pear and apple, and the fruit is employed to make jam and jellies. The quince flourishes in moist soil.

QUINCUNX (Lat.). Arrangement of five things, one in each corner and one in the centre of a square or oblong space. The term is applied to trees arranged in an orchard so that those in one row face the spaces between those in the neighbouring row. In the fighting formation of the Roman legion the maniples are said to have been in quincunx order.

QUININE. Alkaloid present in the bark of *Cinchona succirubra*. It is used in medicine to stimulate the salivary and gastric secretions in various forms of indigestion, and to ward off malaria or cause it to be much milder.

QUINOA (*Chenopodium quinoa*). Herb of the order Chenopodiaceae, a native of the Pacific slopes of the Andes. It attains a height of 5 ft., with a stout, furrowed stem and somewhat triangular oval leaves with sinuate margins. The small green clustered flowers are succeeded by small fruits, each containing a single seed. The seeds are boiled to furnish a sort of gruel called carapulcra.

QUINQUAGESIMA (Lat. quinquagesimus, fiftieth). Term applied to the Sunday before Lent. Quinquagesima Sunday falls 50 days before Easter and was formerly known as Shrove Sunday.

QUINTAIN. Post set up as a mark and used in practising the knightly art of tilting with the lance: also a target so poised as

to swing round and, unless skilfully evaded, deal a sharp blow from a sandbag hung from the other end of a crossbeam. The word is derived from Lat. quintana, the part of a Roman camp devoted to military exercises.



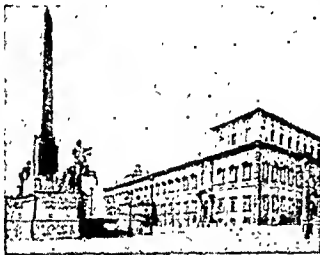
Quintal. Device set up for tilting on village greens

QUINTAL. Measure of weight used in Spain, Portugal, and S. America. In Spain it is 100 libras, or 101.4 lb., in Portugal 58.752 kilogrammes, or 129.1 lb.

QUINTILIAN (c. A.D. 35-97). Roman rhetorician. His full name was Marcus Fabius Quintilianus. Born at Calagurris in Spain he was educated at Rome, and is known as the author of *The Institutes of Oratory*. The more technical portion of this work has comparatively little interest, but the outline sketch of ancient literature is of great value. The final book, which deals with education, anticipated some modern theories.

QUIRE. Measure of paper, the twentieth part of a ream, i.e. 24 sheets. A newspaper quire contains 27 copies, a printer's quire 25 sheets. See Ream.

QUIRINAL (Lat. collis quirinalis). One of the seven hills on which Rome is built, 170 ft. in height. Situate in the N.E. quarter, it was early seized by Sabines, and the name was popularly connected with Cures, an ancient Sabine town. The palace on the summit has been a residence of the king of Italy since 1870.



Quirinal, Rome. Royal palace and, left, fountain and obelisk

QUIRITES. In Roman history, originally the Sabine inhabitants of the Quirinal. After the union of Sabines and Romans the name was applied collectively to all the citizens of Rome. Later the term was used for civilians as opposed to soldiers. The word has been derived from the Latin *quiris*, a lance, or from Cures, a Sabine town. Pron. Kwiri-teez.

QUITO. City of Ecuador, capital of the republic. Picturesquely placed amid lofty volcanic peaks, at an alt. of 9,350 ft., it lies just below the equator. It has a cathedral, presidential and archiepiscopal palaces, a mint, monasteries, university, etc. Manufactures include saddlery, ponchos, carpets, cotton and woollen goods, jewelry, and articles of Mexican onyx. Hides and rubber are exported. Pop. 82,000. Pron. Kee-to.



Quito, Ecuador. Independence Square and Government buildings

QUOICH. Loch. Lake in the S.W. part of Inverness-shire, Scotland. It is 6 m. long by 2 m. broad.

QUOITS. Pastime which probably had its origin in England and Scotland in the 15th century.

The playing area is formed of two beds of clay, each 3 ft. in diameter and generally 18 yds apart from centre to centre. Into each centre is driven an iron pin, the hob, of which an inch remains above the ground. The quoit is a ring of iron, thick at its inner and thin at its outer edge, not exceeding 8 ins. in diameter and weighing about 9 lb.



Quoits. Method of holding

Matches are played between single players or two on each side, victory going to the player or players whose quoits ring or most nearly ring the hob. All quoits which fall on their backs are foul.

QUORN. Premier English hunt. The name is taken from Quorndon in Leicestershire. The country hunted is about 20 m. by 20 m. in area, Loughborough being roughly its centre, although Melton Mowbray is more frequented. The kennels are near Barrow-on-Soar. The country is said to have been hunted before 1700 by Thomas Boothby with the first pack of foxhounds in England.

QUORNDON. Urban dist. of Leicestershire. It stands on the Soar, 9 m. from Leicester and 2 m. from Loughborough, on the L.N.E.R. Pop. 2,501.

QUORUM (Lat. of whom?) Term used for the minimum number of persons necessary to form a meeting, at which the business of a company, club, or other association is transacted. In the British House of Commons the quorum is forty, and in the House of Lords it is thirty. This proviso is necessary to prevent a mere handful of persons from binding the whole body by their action.

R. Eighteenth letter of the English and Latin alphabets, one of the two liquid consonants, *l* being the other. Its normal sound is that in rat, road, and softer in lard. It is almost inaudible at the end of words, unless a vowel follows. *R* is mute in worsted (yarn), but is audible in worsted (defeated). See Alphabet.

The name *R* is given to a type of British rigid airship. These airships are distinguished by the letter *R* followed by a number. *R34* crossed the Atlantic in July, 1919. On Aug. 1, 1930, *R100* reached Montreal from Cardington, having covered over 3,400 m., in 79 h. *R101* was wrecked near Beauvais, France, on Oct. 5, 1930, when flying to India. The death toll was 48, including Lord Thomson (q.v.), air minister, and Sir Sefton Brancker (q.v.), director of civil aviation. Only 6 persons were saved. See Airship.

RA or **RE.** Egyptian sun god. He was represented as a solar disk traversing the sky in a bark. Assimilated to Horus of Edfu, he became hawk-headed. From the Vth dynasty every king bore a Ra-name.

RABAT. Port of Morocco. It stands on the Atlantic coast at the mouth of the river Ragreb. Carpets and textiles are manufactured. Pop. 38,000. See Morocco.

RABBI (Hebrew, my master). Jewish title for a teacher (Matt. 23, 7). The term is commonly applied to the Jewish clergy, scholars, and doctors of law. Christ was addressed as Rabbi (John 1, 3, and 6).

RABBIT (*Oryctolagus cuniculus*). Animal belonging to the order Rodentia. With the hare (*Lepus*) it is distinguished from the rest of the rodents by the presence of an additional pair of incisor teeth in the upper jaw. The rabbit is distinguished from the hare by its smaller size, shorter ears, legs, and feet and grey colour. Rabbits are less fleet of foot and, unlike the hare, are gregarious, living in burrows. The rabbit is very prolific, and it has been calculated that a single pair in favourable circumstances could have a progeny of over thirteen millions in three years. In Australia the rabbit is a serious menace to agriculture.

The rabbit is largely kept in captivity, as a pet and for commercial purposes, and its domestication has brought about many changes in size, colour, and form. Its fur is made up into cheap imitations of better furs.



Rabbit. 1. Common wild rabbit. 2. White-lured breed

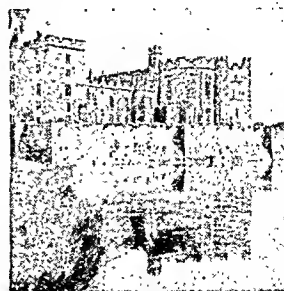
Under the Ground Game Act a tenant in England and Wales may shoot rabbits on his farm, although the sporting rights are reserved to the landlord.

RABELAIS, FRANÇOIS (c. 1490-c. 1553). French author. Born at Chinon in Touraine, where his father was an apothecary, he was educated for the Church, but studied medicine and received his doctor's degree at Montpellier in 1537. He is famous as the author of a series of chronicles narrating the adventures of two mythical giants—*La Vie très horrible du grand Gargantua*, forming Book I, and *Pantagruel*, Roy des Dipsodes, avec ses Faicts et Prouesses Espouvantables, Books II-V; though the author of Book V, which was not published until twelve years after his death, is taken to be him. In these works the author's humours run riot amidst the wildest extravagances and the grossest indecencies. But Rabelais adopted his farcical machinery as the vehicle of his opinions on many subjects which it was then dangerous to discuss in earnest. His work was first translated into English by Sir Thomas Urquhart and Pierre Motteux, 1653-94. Pron. Rahblay.



François Rabelais, French author

RABIES (Lat. rabere, to rave). Disease due to infection by a micro-organism usually conveyed by the bite of a dog. See Dog; Hydrophobia.



Raby Castle, Durham. South front from the park. See p. 1127. By courtesy of Country Life, Ltd.

RABY CASTLE. Seat of Lord Barnard. It is in Durham, 5 m. from Barnard Castle, overlooking the Tees. The original castle was built by a Neville before 1400, but most of the present building is of later date. One of the finest specimens of a feudal castle in England, it is surrounded by ramparts and a moat, and has a keep, a machicolated gateway, and some massive towers. The baron's hall is the chief interior feature. See illus. p. 1126

RACEME. Botanical term for that form of flower grouping (inflorescence) in which the separate flowers are arranged on short lateral stalks from a central axis. Familiar examples are the bluebell and barberry (q.v.).

RACHEL. In the O.T., younger daughter of Laban, sister of Leah, favourite wife of Jacob, and mother of Joseph and Benjamin. With Leah, she took Jacob's part in his quarrel with Lahan. She died in giving birth to Benjamin. The Jewish captives of Nebuchadnezzar passed her tomb on their way to exile (Gen. 29, 31, 35; 1 Sam. 10; Jer. 31; Matt. 2). Over the traditional tomb of Rachel Moses Montefiore, the Jewish philanthropist, erected a small hut in 1849.

RACHEL (1821-58). French actress, whose real name was Elizabeth Félix. Born March 24, 1821, at Mumpf, Switzerland, the daughter of poor Jewish pedlars, she made her début at the Théâtre Français, June 12, 1838, as Camille in Corneille's *Horace*. On Jan. 21, 1843, she won her greatest triumph as Phèdre, in Racine's tragedy, and in 1849 created the part of the heroine in Scrihe and Legouvé's *Adrienne Lecouvreur*. Rachel created a sensation in London in 1841 and 1842, and won fame all over Europe as a tragic actress of supreme genius. She died of consumption at Cannet, near Nice, Jan. 3, 1858. Pron. Rahshel.

RACHMANINOV, SERGEI VASSILIEVITCH (b. 1873). Russian composer and pianist. Born at Novgorod, April 2, 1873 he studied at St. Petersburg and Moscow, and appeared in London in 1899 as a pianist and conductor of his own works. He taught music in Moscow from 1903, worked also in Dresden, visited the U.S.A., 1909-10, and was appointed conductor of the Imperial Opera, St. Petersburg, 1912. His compositions include the operas *Aleko*, 1893, and *Francesca da Rimini*, 1906, orchestral symphonies and piano concertos, chamber music, songs, and piano pieces.



S. V. Rachmaninov,
Russian composer

RACINE, JEAN (1639-99). French dramatist and academician. Early left an orphan, he was brought up by his grandmother, a woman of strong Jansenist leanings, and was educated at Port Royal and the Collège d'Harcourt. Molière produced his first tragedies, *La Théaïde*, 1664, and *Alexandre*, 1665. Between 1667 and 1677 he wrote his tragedies *Andromaque*, *Britannicus*, *Bérénice*, *Bajazet*, *Mithridate*, *Iphigénie*, and *Phèdre*, together with a comedy, *Les Plaideurs* (a satire on the law). His only remaining plays were two of a religious character, *Esther* and *Athalie*. Thereafter he published only four *Cantiques Spirituels* and a history of Port Royal. He died April 21, 1699.



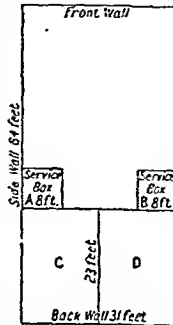
Jean Racine,
French dramatist
From an engraving
by Vertue

Racine's plays are composed of endless talk and discussion, but his skill as an analyst of passion, and especially of love, is remark-

able; while the beauty of his versification deserves the highest praise. Pron. Rasceen.

RACK. Former instrument of torture. It consisted of an oblong frame of wood on which the victim was stretched and his limbs secured by ropes which could be gradually tightened by pulleys or other devices, till the victim confessed or had his limbs dislocated. At its greatest vogue during the reigns of Henry VIII and Elizabeth, the legality of the rack was challenged by the judges in 1628, and it rapidly fell into disuse.

RACKETS. Ball game played on an asphalted court, 60 ft. by 30 ft. in area, enclosed by four walls. The front and side



Rackets. Plan of court

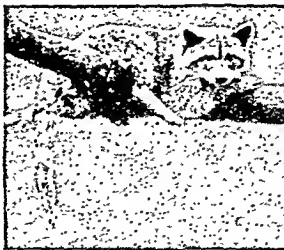
wall another line divides the space into two halves, termed the fault line. Just above the short line, in the angles formed by it and the side walls, are two spaces 8 ft. square, designated service boxes. The game is played by two or four players, one against one (singles), two against two (doubles).

The racket consists of a wooden hoop 7 ins. in diameter, strung as tightly as possible with catgut, with a handle about 30 ins. long. See *Fives*; *Pelota*; *Squash Rackets*.

RACKHAM, ARTHUR (h. 1867). British artist. Born Sept. 19, 1867, he was educated at the City of London School, and has won much success as an illustrator of books, notably *Peter Pan*, 1906; *Aliee in Wonderland*, 1907; and *Wagner's Ring librettos*, published 1910-11.

RACCOON. Small carnivorous mammal related to the bears, confined to America. The common raccoon (*Procyon lotor*) is about 24

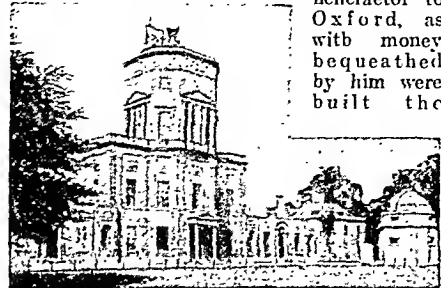
ins. long in body, with a tail about 10 ins. in length. It is a stoutly built animal, covered with thick, greyish-brown fur, the tail being ringed with black. The raccoon makes its home in holes high up in the trees, only coming down at night in search of food; it feeds upon small birds and mammals, fish and fresh-water mussels, and occasionally varies its diet with young corn and fruit. In the colder districts it hibernates during the winter. It is hunted and trapped for its fur, with the result that it is no longer numerous in many districts. In South America the crab-eating raccoon occurs.



Raccoon. Common variety of the nocturnal animal of N. America

RADCLIFFE. Urban dist. of Lancashire. It stands on the Irwell, 8 m. from Manchester, on the L.M.S. Rly. The industries include the manufacture of cotton, paper, and chemicals; dyeing and bleaching. The old church of S. Bartholomew was restored in the 19th cent. Pop. 24,759.

RADCLIFFE, JOHN (1650-1714). English physician. Born at Wakefield, he made a reputation as a physician, first in Oxford and then in London, and became medical attendant to William III, Mary, and Anne. He was a member of parliament, and died at Carshalton, Nov. 1, 1714. Radcliffe was a



Radcliffe Observatory, Oxford. Principal buildings with right, the dome for the large double telescope

benefactor to Oxford, as with money bequeathed by him were built the library, observatory, and infirmary that bear his name, also perpetuated by travelling fellowships for students of medicine. In 1929 it was proposed to transfer the observatory to S. Africa.

RADEK, KARL (h. 1885). Bolshevist leader. Born at Lemberg of Jewish parents, his name was originally Sobelsohn. He became associated with the Socialist party in Poland, and wrote a great deal for the press. Later he went to Germany, and in the Great War was in Switzerland, in both countries doing journalistic work for his cause. In 1917 he became associated with Lenin and others in organizing the Bolshevist movement. For ten years one of its leaders, in 1927 he was expelled from the party, and in 1928 was banished to Siberia.

RADIATION. Name given to energy, emitted by material bodies, which traverses space without the aid of an apparent material medium. According to the electro-magnetic theory such energy is dependent on wave motion in the ether.

This theory has been modified by the ideas which have arisen from new conceptions of the atom, so that, according to views enunciated by Planck, radiant energy is given out in minute pulses of energy, called by Planck quanta.

Radiant energy as commonly understood may be explained from the example of a hot body suspended in air or any gas. There is loss of heat due to conduction through the gas or convection currents set up in it, and this loss of heat depends on the presence of material particles in the gas. But if the hot body were suspended in a perfect vacuum, it would still shed its heat, or radiate its energy, in all directions, quite independently of the absence of material particles. See *Atom*; *Heat*; *Light*; *Matter*; *Radium*.

RADICAL OR RADICLE (Lat. *radix*, root). Term applied in chemistry to elements (simple radicals) or groups of elements (compound radicals). It usually denotes a compound radical or group of units capable of passing unaltered from compound to compound. The names of radicals generally end in the syllable -yl. Exceptions are ammonium and cyanogen.

RADICAL (Lat. *radix*, root). Term applied to those who desire large changes in the social and political order. In Great Britain the radical party has been an advanced section of the Liberal party; its equivalent in France is the left. The term was also applied to thinkers such as Bentham and James Mill, who tried to introduce a philosophic theory of government based on first principles. They were individualists and economists, but later radicals believed in a constant enlargement of the area of state control. See *Liberal*.

RADIO-ACTIVITY. The term radio-activo is applied to substances, such as uranium, radium, thorium, actinium, and their compounds, which have the property of spontaneously emitting radiations possessing the following characteristics: 1. They will penetrate substances opaque to ordinary light. 2. They will affect a photographic plate in a dark room. 3. They will produce luminescence and phosphorescence in certain substances placed near them. 4. They have the power of "ionising" any gas through which they pass. Like properties are also exhibited by other radiations, e.g. by Röntgen or X-rays, but the X-rays are not emitted spontaneously, and have to be excited by some external agency.

In 1896 Becquerel found that salts of uranium emitted photographically active rays independent of previous exposure to light. Later, other substances were found to give off similar rays. Rutherford showed that the radiations from radio-activo substances were of three distinct types, which he called the alpha, beta, and gamma rays (α , β , and γ). The α rays are positively charged atoms of helium. The β rays, negatively-charged particles of small mass, are electrons moving with high velocity. The γ rays consist of electro-magnetic impulses of very short wavelengths, analogous to X-rays. Far more penetrating than the α or β rays, their ionising power is less than that of the β rays, and about 1,000 times smaller than that of the α rays, and their photographic and phosphorescent actions are correspondingly small.

The radiations given off by a radio-element are parts of the disintegrating atom. The new atoms formed may be unstable and break up in their turn, giving off a characteristic type of rays, and this transformation process continues through a number of stages. Only about one atom of radium in about 100,000,000,000 breaks up every second, or about half the atoms in 1,800 years, and each disintegrating atom expels an α particle. The residual atom is called radium emanation or radon—a heavy gas, transforming with the expulsion of an α particle to half-value in about four days. A number of succeeding transition products are denoted by the names radium A to radium F, the transformation of each being accompanied by the emission of either α or β particles, or both. These changes go on spontaneously, and cannot be controlled by outside agencies. See Atom; Chemistry; Element; Isotopes; Matter; Radium.

RADIO COMMUNICATION. Name for telegraphy and telephony carried out by means of electro-magnetic waves. The abbreviation "radio" is used loosely to denote broadcasting, especially in America. The Radio Times is a weekly publication of the B.B.C. World Radio, another B.B.C. weekly, publishes the programmes of foreign broadcasting stations.

A radio beacon is a wireless station which sends out signals for the guidance of ships or aircraft. See Broadcasting; Thermionic Valve; Wireless.

RADISH (Lat. radix, a root) Genus of annual and biennial herbs of the order Cruciferae and genus Raphanus. The garden radish (*Raphanus sativus*) was introduced to Britain in 1548. Radishes prefer a light, rich soil, and thrive best in one which has been heavily manured for previous crops. The long-rooted radishes are the best for early or spring sowing, and the round or turnip radishes for summer treatment.

RADIUM (Lat. radius, ray). Radio-active element. Its chemical symbol is Ra, atomic weight 225.95; atomic number 88; melting point 700°C. Discovered by M. and Mme. Curie in 1898,

it is a silver-white metal, which tarnishes rapidly on contact with air. Radium belongs to the uranium family, and is a transition product of uranium (q.v.). The chief source of radium is the mineral pitchblende, in which it appears in minute quantities. Radium is remarkable for its radio-active properties, being several million times more powerful in this respect than uranium. In addition to pitchblende deposits of N. Bohemia, the Belgian Congo, and elsewhere, the element is recovered from the mineral carnotite in the U.S.A., etc.

Radium is extensively used in medicine, especially in certain types of skin diseases, e.g. tuberculous lesions, in cases of exophthalmic goitre, sarcoma, carcinoma, rodent ulcer, etc. Malignant tumours should be treated with radium only when operation is impossible. Tubes containing radium emanation are inserted in the growth. The address of the London Radium Institute is 16, Riding House Street, Portland Place, W. See Curie, Pierre: Radio-activity; X-Rays.

RADLETT. Village of Hertfordshire. It is 5 m. from St. Albans and 15 m. from London, on the L.M.S. Rly., and is a residential suburb of London. An aerodrome was opened here in 1930.

RADLEY. Village of Berkshire. It stands on the Thames, 4 m. from Oxford, on the G.W. Rly. Radley College was founded in 1847. It has over 300 boys. Pop. 1,074.

RADNOR, NEW. Village of Radnorshire. It is 7 m. S.W. of Presteigne, on the G.W. Rly. There are remains of the castle, once a stronghold of the Mortimers. About 3 m. S.E. is the village of Old Radnor.

EARL OF RADNOR. This is a British title borne in turn by the families of Robartes and Pleydell-Bouverie. The first family held it from 1679 to 1757.

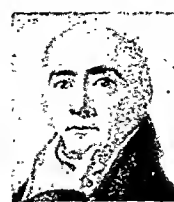
The second family of earls began with William Bouverie, Viscount Folkestone (1725-76), the descendant of a Huguenot merchant; he was made earl in 1765. The earl owns much land at Folkestone, and his chief seat is Longford Castle, Wiltshire. His eldest son is called Viscount Folkestone.

RADNORSHIRE. Inland co. of Wales. Its area is 471 sq. m. In the E. and S. it is fairly level, but the rest is hilly, and there is picturesque scenery in the valleys. The wild district in the centre is known as Radnor Forest. The principal river is the Wye; others are its tributaries, the Elan, Lugg, Arrow, and Ithon. The Elan is utilised to supply Birmingham with water. Oats and wheat are grown and sheep are reared. There are mineral springs. The L.M.S. and G.W. Rlys. serve the co. Presteigne is the co. town; others are Knighton, Rhayader, and Llandrindod Wells. Pop. 23,517.

RADON. Radio-active element, a gaseous emanation from radium, symbol Rn; atomic weight 222; atomic number 86. A heavy gas, it is short-lived, and loses half its radio-active power in 3.82 days. Enclosed in fine tubes (radium needles) radon is largely used in the treatment of certain diseases. See Radio-activity; Radium.

RADSTOCK. Urban dist. and market town of Somerset. It is 16 m. from Bristol, on the G.W. Rly. The main industry is coal-mining, the town being the centre of the Somerset coalfield. Market day, Sat. Pop. 3,661.

RAEBURN, SIR HENRY (1756-1823). Scottish painter. Born March 4, 1756, he was apprenticed to a goldsmith in Edinburgh. He soon began to paint water-colour miniatures, and, after studying with David Martin, passed to portraiture in oils. On the advice of Reynolds, he set out for Italy in 1785 and worked for two years in Rome. He painted most of the notable Scotsmen and Scotswomen of the day. His portrait of Dr. Nathaniel Spens, perhaps his masterpiece, is in the Archers' Hall, Edinburgh, and both the Scottish National Gallery and Portrait Gallery are rich in his works. He was elected A.R.A. in 1814 and R.A. in 1815. In 1822 he was knighted, and he died in Edinburgh on July 8, 1823.



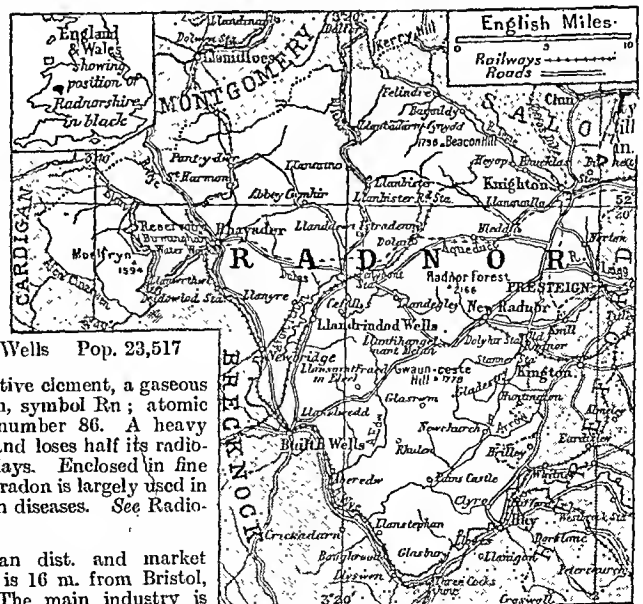
Sir Henry Raeburn, Scottish painter. Self-portrait.

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RAEMAERKERS, LOUIS (b. 1869). Dutch cartoonist. Born at Roermond, Holland, April 6, 1869, he studied at Amsterdam and Brussels. He began by painting portraits, landscapes, genre, and posters, and was master of a drawing school at Wageningen in Gelderland. In 1908 he started drawing political cartoons, and during the Great War became famous for his scathing satires on Kultur and its practical application.

RAFA OR RAFAH. Town on the Egyptian side of the Palestine-Egypt frontier. It lies 20 m. S. of Gaza, on the Mediterranean coast, and 30 m. from El Arish (q.v.). It was prominent in the British conquest of Palestine, and gave its name to a battle fought between the British and the Turks, Jan. 9, 1917, which resulted in a British victory. The real struggle took place at Magruntein, but the battle is usually known as that of Rafa. See Palestine.

RAFFIA WORK. Manufacture of a variety of articles from bast dyed in different colours. Raffia is usually obtained ready dyed. It is damped slightly and is then twisted on a beard cut in the shape of the required object, or it may be plaited and used to make various articles, just as straw plait is used, with the advantage that it is more pliable and therefore easier to handle.



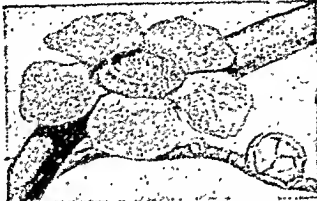
Radnorshire. Map of the inland county of Wales. Most of it is undulating or hilly, while in the centre is the mountainous tract, Radnor Forest.



Radish. Bunch of the roots.

RAFFLES, SIR THOMAS STAMFORD (1781-1826). British administrator. Born July 5, 1781, he entered the service of the E. India Co., and in 1805 was sent to Penang. He became a master of the native languages, and in 1811 was made governor of Java, a position he kept until 1816, when the island was restored to the Dutch. In 1818 he was made governor of Benecoolen, and in 1819 the E. India Co., at his instigation, acquired Singapore, whither he went to set up an administration. He returned to England in 1824, and died July 5, 1826.

RAFFLESIA. Genus of leafless and stemless parasites of the order Rafflesiaceae, natives of the East Indies. The vegetative portion of the plant consists of threads, like the mycelium of a fungus, in the tissues of species of vines and figs, the only external evidence of its presence being afforded when the huge flower-hud breaks forth. *Rafflesia arnoldi* measures 3 ft. across the opened flower. The petals, etc., vary from a quarter to three-quarters of an inch thick, are of a reddish tint, and with a smell like carrion which induces flies to fertilise the flower.



Rafflesia. Flower of *R. arnoldi*, the leafless and evil-smelling parasite

RAGLAN. Village of Monmouthshire. It is 7 m. from Monmouth, on the G.W. Rly. Above the village stand the ruins of Raglan Castle, including a gateway and remains of the hall and towers. Pop. 676.

RAGLAN, FITZ JAMES HENRY SOMERSET, 1ST BARON (1788-1855). British soldier. A younger son of the 5th duke of Beaufort, he was born Sept. 30, 1788. He entered the army in 1804, and during the Peninsular War served on Wellington's staff. At Waterloo he lost a hand. In 1854, having been made a baron in 1852, he went out in command of the force sent to the Crimea, and he remained there until his death, June 28, 1855. He married a niece of Wellington, and his son,

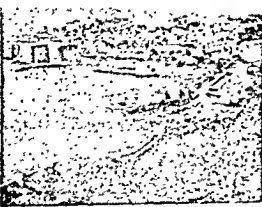


1st Baron Raglan, British soldier. After A. Morton

Richard (1817-84), became the 2nd baron. The 3rd baron, George (1857-1921), was governor of the Isle of Man, 1902-19.

RAGTIME. In music, a form of syncopation by prolongation used by American composers and their imitators in modern coon songs. Claimed as original, it has, however, been used in some form in all ages.

RAGUSA. Seaport of Yugoslavia; the Slav name is Duhrovnik. It is on the Adriatic, 105 m. S.E. of Spalato (Split), and is surrounded by a wall with numerous towers. The buildings include the former palace of the rulers and the cathedral. The harbour being partly closed by sand, large vessels use Gravnsa, about 4 m. distant. Oil, silk, leather, and liqueurs are produced. Long under Turkish rule, Ragusa became Austrian in 1814, passing to Yugoslavia after the Great War. Pop. 14,266.



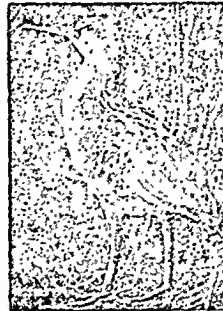
Ragusa. Ancient town and harbour on the east shore of the Adriatic

Another Ragusa is a town of Sicily. It is a manufacturing centre. Pop. 57,150.

RAGWORT (*Senecio jacobaea*). Perennial herb of the order Compositae, a native of Europe and Asia. It has leafy stems about 4 ft. high, with deeply lobed, dark green leaves, and large clusters of bright yellow, rayed flower-heads.

RAIKES, ROBERT (1735-1811). British philanthropist. Born at Gloucester, Sept. 14, 1735, his father was the proprietor of The Gloucester Journal. In 1757 he succeeded to the family business, which he carried on until 1802. Meanwhile, he had become interested in the question of prison reform, but it was his establishment of a Sunday school in Gloucester, in a building still preserved, in 1780, that made his fame. He died April 5, 1811. See Sunday Schools.

RAIL. Name given to birds of the family Rallidae, widely distributed and distinguished by having laterally flattened bodies suitable for passing through dense undergrowth. They are comparatively long in the leg and toes. The tail is short and the head small, the beak long, and curved at the tip. In Great Britain the family is represented by the corn-crake, coot, water-hen, and named occurs sparsely in



Rail. The water-rail; it nests in the sedges. W. S. Berridge, F.Z.S.

RAILWAY. The germ of the modern railway is found in the wooden tracks laid down to facilitate the haulage by animal power of wagons or trams of coal. To reduce the wear by laying sheets of iron on these wooden rails was an obvious expedient, and in the late 18th century they were made entirely of iron, and east L-shape, an upright portion being added on one side of each to keep the wheels on the track. Such rails were called plate rails. The wheels ran on the flat horizontal part of the rail. Later, running on the top or edge of the rail, and the modern type of edge rail gradually developed.

The first public line was the Surrey Iron Rly., from Wandsworth to Croydon, authorised by Parliament in 1801. Here animal traction was employed, and the first application of steam traction is credited to Richard Trevithick on a plate-way in South Wales in 1804. The Stockton and Darlington Rly., opened in 1825 and now merged in the L.N.E.R. system,

BRITISH RAILWAYS IN 1913 AND 1925

	1913	1925
CAPITAL		
Receipts	£1,106,191,858	£1,168,400,000
Expenditure	£1,141,543,561	£1,216,100,000
Net Annual Revenue	£47,242,814	£45,200,000
Appropriation	£46,172,494	£44,900,000
Average rate of interest and dividend paid on capital receipts ..	4.17%	3.8%
RAILWAY WORKING		
Passenger train receipts ..	£34,525,821	£88,000,000
Goods train receipts ..	£64,254,895	£103,300,000
Other receipts	£1,014,864	£1,800,000
Expenditure	£75,704,320	£154,100,000
Mileage of railroad, including sidings, reckoned as single track	50,604	52,567
Mileage of electrically worked track	—	549

is the oldest passenger rly. The original intention was to use animal power, but at the instance of George Stephenson the steam locomotive was adopted instead. It was, however, the Liverpool and Manchester Rly., opened in 1830, which finally established the supremacy of the steam locomotive.

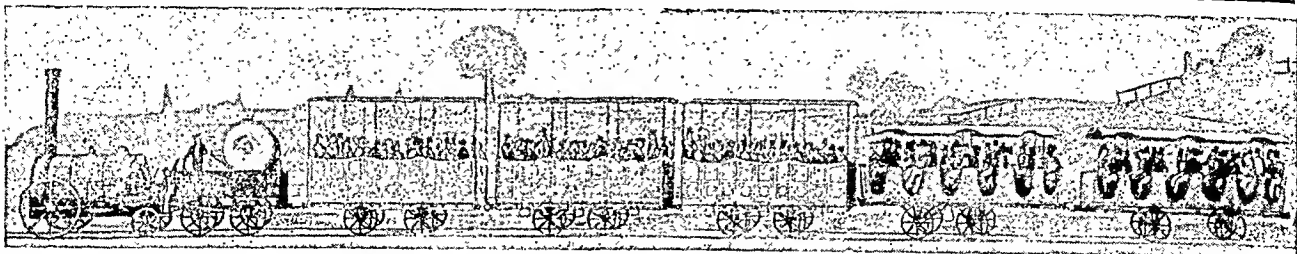
The years in which various countries first opened steam rlys are: Austria and France, 1828; United States, 1829; Belgium and Germany, 1835; Russia, 1838; Italy, 1839; Switzerland, 1844; Spain, 1848; Canada and Mexico, 1850; Sweden, 1851; Norway and India, 1853; Portugal, Brazil, and Australia, 1854; Egypt, 1856; South Africa and Turkey, 1860; Japan, 1872; and China, 1887.

RAILWAY REORGANIZATION. During the Great War, and until Aug. 15, 1921, the bulk of the British rlys. were under Government control. In 1920, while the gross revenue was barely double what it was in 1913, the expenditure had increased more than threefold, and the revenue was less than half the amount required to meet the fixed interest on the debenture and rent charge stocks.

The Railways Act, which became law in Aug., 1921, provided for the reorganization of the railways in Great Britain by amalgamating them into four large groups. (1) Southern group (London and South-Western; London, Brighton and South Coast; and South-Eastern and Chatham); (2) Western group (Great Western and the railway companies in South Wales); (3) North-Western, Midland and West Scottish group (London and North-Western; Midland; Lancashire and Yorkshire; North Staffordshire; Furness; Caledonian; Glasgow and South-Western; and Highland); and (4) North-Eastern, Eastern



Railways. 1. Grand Street, New York, with the elevated railway on each side. 2. Electric suspension rope-way from Koblern down to Bozen, Italian Tirol. 3. Cable tunicular to Reichenbach Falls, Switzerland. 4. Rack railway up Mount Pilatus



Railways. Passenger train, with second and third class carriages, on the Liverpool and Manchester Railway, opened in 1830. From a print of 1833

and East Scottish group (North-Eastern; Great Central; Great Eastern; Great Northern; Hull and Barnsley; North British; and Great North of Scotland). The scheme came into operation on July 1, 1923, and the official titles chosen were: Southern; Great Western; London, Midland and Scottish; and London and North-Eastern. The Act provided for the establishment of a Rates Tribunal, which should fix charges in such a way that the companies would secure an annual revenue equivalent to that of 1913.

After Jan. 1, 1928, made the appointed day under the Act of 1921, the companies tackled the problem of a falling revenue. All grades in the service agreed to a reduction of 2½ per cent. of their salaries and wages. Steps were taken to secure a larger share in the road traffic, and more inducements were offered to intending passengers. The lines of the Irish Free State have been amalgamated into a single system, the Great Southern Railways.

ELECTRIC RAILWAYS. The working of rlys. by electric traction, in which the trains are driven by current conveyed through fixed conductors placed beside or above the rails, to motors mounted either in the cars or in a separate locomotive, has made great strides within the last generation. London has a unique electric rly. system.

RACK RAILWAYS. On gradients exceeding 1 in 25 the ordinary kind of adhesion locomotive becomes impracticable. Gradients up to 1 in 12 can be climbed, under favourable conditions, by trains of which all the wheels are driven. On steeper grades a positive means of haulage is required, the most usual being that afforded by the engagement of driven cog-wheels with a rack laid between the running rails and fixed firmly to the sleepers.

LIGHT RAILWAYS. These are secondary rlys., to serve the needs of sparsely inhabited agricultural areas. They are often of narrow gauge, and efforts are made to render them as cheap as possible both in first cost and in operation. Steep gradients and sharp curves may be permitted, and sometimes the lines run along the public roads.

RAILWAY CLEARING HOUSE. Institution in London for dealing with the through traffic on the rlys. of Gt. Britain. There the financial relations of the various companies are adjusted. It is at Seymour St., N.W.1.

RAILWAY AND CANAL COMMISSION. This judicial body was first appointed in 1873, and reorganized in 1888. Its work is to decide questions at issue between the rly. companies and traders and the public generally. It is located at the Royal Courts of Justice, London.

RAILWAY RATES TRIBUNAL. Body set up in 1921 to fix the rates that the rlys. of Gt. Britain may charge in order to obtain a net annual revenue equal to

what they earned in 1913. Its offices are at 2, Clements Inn, London, W.C.2.

RAIN. Condensed water vapour of the atmosphere falling in drops. If a mass of air containing water vapour is cooled, some of the vapour may condense into tiny drops of moisture so light that the air can support them. In this manner fog, clouds, and mists are formed. If condensation proceeds further, the tiny drops amalgamate and form larger drops, which are too heavy to be held in suspension, and a fall of rain ensues.

The general term rainfall is used to signify the aqueous precipitation from the atmosphere, whether in the form of rain, hail, or snow. The study of rainfall is concerned with the reasons why precipitation occurs in particular areas, with the quantity which falls annually, and with the distribution from month to month, or from season to season.

Water vapour is always present in the atmosphere; warm air has a greater capacity for water vapour than cold air; it rains whenever warm wet air is sufficiently chilled. The air is warmest at its lowest levels, consequently rising air is chilled and is likely to deposit rain. Mountains and other elevated regions are rainier than the neighbouring lowland. Very cold air, below freezing point, is almost perfectly dry, and further cooling fails to produce a fall of snow. The rainless areas of the world are the deserts. See Meteorology.

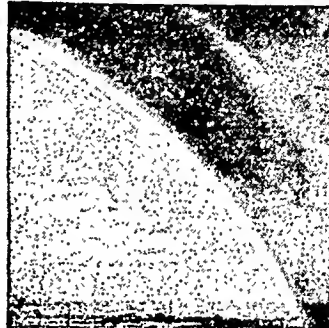
RAIN GAUGE. Instrument used for measuring the fall of water, whether in the form of

rain, hail, or snow. A funnel catches the rain and leads it into some kind of vessel. At fixed times the precipitation is poured from this vessel into a measuring glass. The graduations record inches or mm. of rain.

RAIN-MAKING. Among primitive peoples, e.g. N. Africa and N. India, many usages and rites have been practised with the object of inducing rainfall. In modern times attempts have been made to cause rainfall by bombarding clouds with gunfire, the dispersion of chemicals from aircraft, etc. To induce the deposit of moisture from the air on dusty roads the latter are sometimes sprinkled with calcium chloride.

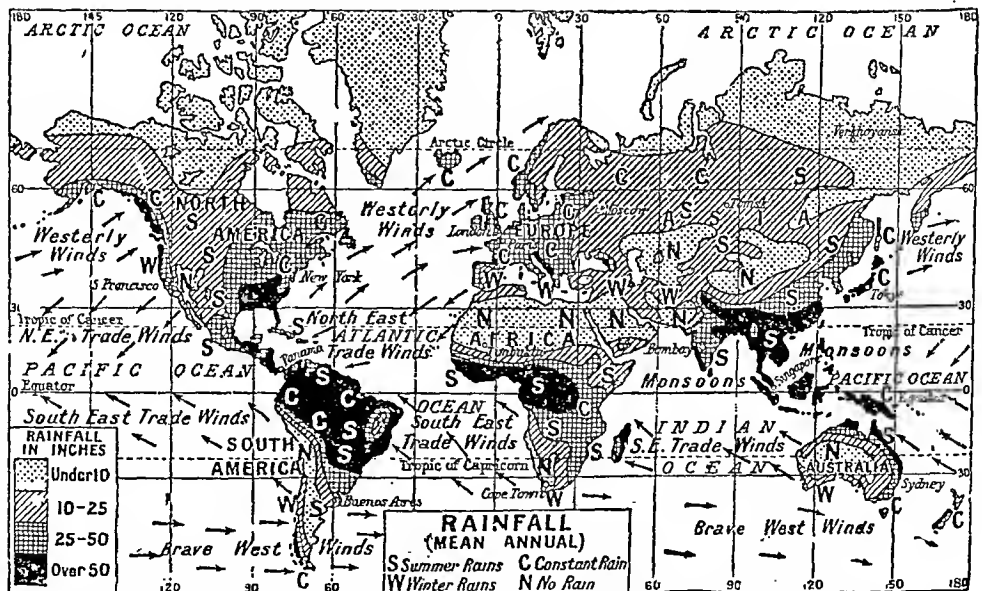
RAINBOW. Name given to the phenomenon caused by the internal reflection and refraction of rays of light in the spherical globules of raindrops. A rainbow is always seen in the part of the sky away from the sun, its height varying inversely as that of the sun. The colours of the rainbow are those of the spectrum in the same order, red being outside. Occasionally a second concentric and fainter bow is observed with the colours in the reversed order. The intensity of the colours of a rainbow depends largely on the size of the raindrops. Rainbows at night indicate fine weather the following day; in the morning, wet weather.

RAINFORD. Urban dist. of Lancashire. It is 4 m. from St. Helens and is served by the L.M.S. Rly. Coal is mined in the neighbourhood. Pop. 3,552.



Rainbow. A second and even a third are may appear if the light is strong

Dr. G. A. Clarke



Rain. Map showing the distribution of the rainiest regions and the hot deserts of the world in relation to the season of maximum precipitation and the prevalent winds as indicated by arrows

RAINY or **RÉNÉ**. Lake on the borders of Canada and U.S.A. It lies 155 m. W. of Lake Superior, and is about 50 m. long by from 3 m. to 8 m. broad.

RAINY, ROBERT (1826-1906). Scottish divine. Born in Glasgow. Jan. 1, 1826, the son of a professor of medicine at Glasgow University. he was educated there. After training at New College, Edinburgh, he became a minister of the Free Church at Huntly in 1851, and in 1854 removed to Edinburgh. In 1862 he was chosen professor of church history at New College, and in 1874 he became its principal. He resigned in 1900, and died at Melbourne. Dec. 22, 1906. Rainy had a good deal to do with the union of the U.P. and Free Churches.

RAISIN. Dried grape. They are used as a dessert fruit and in the making of puddings. Raisins are imported from France, Spain, Turkey (see Sultana), and Asia Minor. The ordinary raisin is made by drying in an oven, but the better sort are sun-dried. See Grape.

RAISULI, AHMED BEN MOHAMMED (1875-1925). Moroccan bandit. Of noble birth, he alleged certain grievances against the sultan and became chief of a robber gang. In 1907 he kidnapped Sir H. Maclean (q.v.), who was ransomed for £20,000 and a quantity of military stores, Raisuli being also made governor of the province of Fassi. His death was announced in April 1925.

RAIT, ROBERT SANGSTER (b. 1874). British historian. Born Feb. 10, 1874, and educated at Aberdeenshire and Oxford, from 1913-29 he was professor of Scottish history and literature in Glasgow university, and from 1918-30 historiographer-royal for Scotland. In Oct., 1929, he was appointed principal of Glasgow university. His published works deal mainly with Scottish history.

RAJA. Indian title of honour meaning king. It is given to rulers and others and sometimes hereditarily by the British government to Hindus, as that of nabob to Mahomedans. It is the usual title of Malay and Javanese princes. The feminine is ranee. The related word raj means rule.

RAJPUTANA. Group of Indian states of N.W. India bounded by Bombay, the Punjab, the United Provinces, and Central India. Jaipur is the largest city. Ajmer-Merwara is a British province enclosed within the state. Jodhpur, Bikaner, Jaipur, and Udaipur are the largest states. The area is 128,987 sq. m.

The Rajputs are found in the northern regions of India, and are politically predominant in Rajputana. The name means king's son. Pop. 9,844,384. See India.

Rakahanga. Pacific island, a dependency of New Zealand. It is 25 m. N. of Manihiki and 670 m. N. of Rarotonga. Pop. 327.

RALEIGH or **RALEIGH, SIR WALTER** (c. 1552-1618). English soldier, courtier, and writer. Son of Walter Raleigh, he was born at Hayes Barton, near Budleigh Salterton. After service with the Huguenots, 1569-78, he went on a voyage of discovery with his half-brother, Sir Humphrey Gilbert, reaching the West Indies. He appeared at the English court in 1581, and became a favourite with Elizabeth, who knighted him in 1584. In 1578 and 1583 Raleigh was associated with the unsuccessful attempts of Sir Humphrey Gilbert to plant a colony in N. America. Gilbert was lost at sea, 1583, and in 1584 Raleigh fitted out an expedition which planted itself in what is now known



Sir Walter Raleigh, English courtier and soldier. Portrait by unknown artist in the National Portrait Gallery.

as North Carolina, probably on the island of Roanoke. Raleigh named the colony Virginia, a name given for many years to the whole seaboard from Florida to Newfoundland. He made his famous voyage to the Orinoco in quest of El Dorado in 1595, and in 1596 he took a leading part in the Cadiz expedition, and distinguished himself at the Azores in 1597.

On the accession of James I, 1603, Raleigh was charged with plotting against the new king. After a scandalously unfair trial he was found guilty and condemned to death. Reprieved on the scaffold, he was sent to the Bloody Tower, where, with his wife and son, he lived until Jan. 30, 1616, when he was released to lead another expedition to the Orinoco. As was inevitable, he came into collision with the Spaniards. On his return he was arrested, was arraigned on the old charge of treason, and executed in Old Palace Yard, Westminster, Oct. 29, 1618.

RAM. In engineering, a plunger driven out of a cylinder by water under great pressure to exert a strong squeezing or lifting force. A ram pump is one which raises water by means of the latter's own velocity. See Hydraulics.

The term ram is used for the projecting bow of a ship, used for sinking other vessels.

RAMADI. Town of Iraq (Mesopotamia). On the Euphrates, it is 59½ m. W. by N. of Bagdad. It was the scene of a battle fought between the British and the Turks, Sept. 28-29, 1917, in which the whole Turkish force surrendered. Cavalry were employed with great effect in pursuing the Turks. See Mesopotamia.

RAMAH. Name meaning a height, used in the Bible for a number of places difficult to identify. One was the site of Rachel's tomb. The modern Er Ram (Ramah), 6 m. N. of Jerusalem, was associated with the life of the prophet Samuel, and figured in the wars between the ten tribes and the tribe of Judah. It was captured by the British, Dec. 28, 1917.

RAMBOUILLET. Village of France. It is 30 m. from Paris and is famed for its château, the summer residence of the president of the French Republic. The château has magnificent parks and gardens laid out by Lenôtre, and a dairy built by Louis XVI. It passed into the possession of the nation at the Revolution.

RAMEAU, JEAN PHILIPPE (1683-1764). French composer. Born at Dijon, Oct. 25, 1683, he became a church organist in Lille and Clermont-Ferrand before settling in Paris in 1722. He attracted attention by his treatise on harmony issued in 1722, and in 1723 one of his lighter pieces was mounted at the Opéra Comique. His opera Hippolyte et Aricie was played at the Opéra, 1733, the first of a score, notable among which was *Castor et Pollux*, 1737. His harmonic theories profoundly influenced musical development in the 18th century. Rameau died in Paris, Sept. 12, 1764.

RAMESES or **RAMESSES**. Name of two Egyptian kings of the XIXth and of nine of the XXth dynasty. **Rameses II**, styled the Great, and long reputed to be the Pharaoh of the Oppression, reigned for 67 years from about 1300 B.C. He waged tedious wars against the Hittites, which resulted in his 21st year in a treaty preserved in a hieroglyphic version at Karnak, and in cuneiform on a tablet that was found at Boghazköi in 1907. The greatest of Egyptian builders, one half of the temples still extant date from his reign, and his name or portrait occurs in nearly every great group of ruins. See Abu-Simbel; Karnak; etc.



Rameses II, Head of the mummy. Cairo Museum.

Rameses III, the Rhampsinitus of Herodotus and the virtual founder of the XXth dynasty, reigned for 32 years from about 1200 B.C. His majestic Theban temple at Medinet Habu, together with the great Harris papyrus in the British Museum—133 ft. in length, the longest known—record his military achievements and opulent temple-gifts.

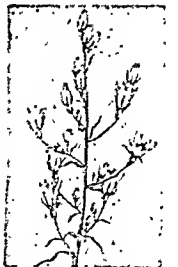


Ramie fibres, magnified about 10 times.

RAMIE. Bast fibre of a stinging nettle, the *Boehmeria tenacissima* or *B. nivea*, also known as rhea and China grass. The latter name is given to fibre band-cleaned from the bark in China, and fine native cloth hand-made from long unspun fibres thus derived is sold as grass cloth. The yarn has great tensile strength, but is brittle. The fibre is heavy and very inflammable, does not contract when wetted, and is short of elasticity. Incandescent gas mantles, are made from ramie, as the ash of the fabric does not shrink like cotton upon burning. The fibre is used in the making of cordage, nets, and in paper for banknotes.

RAMILLIES. Village of Belgium. It is 12 m. from Namur and is famous for the British and Dutch victory over the French, May 23, 1706. The former were led by Marlborough and the French by Villeroi. Nearly all the French artillery was captured, and they lost about 15,000 in killed, wounded, and prisoners. The losses of English and Dutch were under 4,000.

RAMPANT. In heraldry, a four-footed beast or monster, represented as standing on its hind legs, pawing the air, and with jaws open. It is then said to be rampant. But a horse in this position is often described as *forcené*, or *éfréné*, the nostrils being dilated, and the eyes of a different tincture from that of the body. See Heraldry.



Rampion. A flower spray.

RAMPION (*Campanula rapunculus*). Perennial herb of the order Campanulaceae, a native of Europe, W. Siberia, and N. Africa. It has a thick, fleshy root. The lower leaves are stalked and oval, the upper stalkless and slender. The blue flowers resemble those of the harebell (*C. rotundifolia*). The root of the rampion is edible.

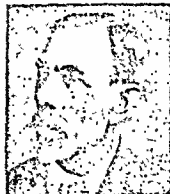
RAMPOLLA, MARIANO MARCHESE DEL TINDARO, CARDINAL (1843-1913). Italian statesman. Born at Polizzi, Sicily, Aug. 17, 1843, he entered the diplomatic service of the Holy See. Having been nuncio at Madrid, he was created archbishop of Heraclea in 1882. Five years later Leo XIII gave him the red hat and made him papal secretary of state. On the death of Leo XIII, 1903, Rampolla's election as his successor seemed certain, but Austria exercised her veto. Rampolla resigned, and died Dec. 16, 1913.

RAMSAY, ALLAN (1686-1758). Scottish poet. Born Oct. 15, 1686, at Leadhills, he collected and rewrote old Scottish songs and ballads, which were published in 1724 as *The Tea Table Miscellany* and *The Evergreen*. In 1725 he published *The Gentle Shepherd*, a pastoral marked by genuine poetic feeling. In Edinburgh, in 1726, he opened a bookseller's shop. He died Jan. 7, 1758.

Ramsay's son, Allan Ramsay (1713-84), was born in Edinburgh, and studied art in London and Rome. About 1757 he came to

London, and soon established his reputation by his sound, if somewhat undistinguished, portraiture. He died Aug. 10, 1784. Examples of Ramsay's work are in the National Portrait Galleries in London and Edinburgh.

RAMSAY, SIR WILLIAM (1852-1916). British scientist. Born in Glasgow, Oct. 2, 1852, he was educated at Glasgow and in Germany. In 1880 he was appointed professor of chemistry at University College, Bristol, and became principal in 1881. He remained at Bristol until 1887, when he became professor of chemistry at University College, London, retiring in 1912. Knighted in 1902, in 1904 he received the Nobel Prize for chemistry. He died July 23, 1916.



Sir William Ramsay,
British chemist
Lafayette

Ramsay's research resulted in the discovery that the nitrogen from the air contains a new element, argon (q.v.). Searching for other sources of argon, he discovered a new element, helium, in a mineral called cleveite. Later he discovered krypton, neon, and xenon, gases which occur in minute quantities in the air.

RAMSAY, SIR WILLIAM MITCHELL (b. 1851). British archaeologist. Born in Glasgow, March 15, 1851, in 1880 he won a travelling studentship at Oxford, and subsequently spent many years in travel in Asia Minor. In 1882 he became fellow of Exeter College, and in 1885 of Lincoln College, Oxford, in the latter year being appointed professor of classical art in the university. In 1886 he was appointed professor of humanity at Aberdeen, which position he held till 1911. In 1928 he excavated at Antioch, in Pisidia, a triumphal arch of the emperor Augustus. He reconstructed the inscription composed by the emperor himself just before his death. This was found in 280 fragments.



Sir William Ramsay,
British archaeologist
Elliott & Fry

RAMSBOTTOM. Urban dist. of Lancashire. It stands on the Irwell, 4 m. from Bury, on the L.M.S. Rly. The industries include calico printing and bleaching and the making of cotton and woollens. Pop. 15,381.

RAMSEY. Market town and urban dist. of Huntingdonshire. It is 10 m. from Huntingdon on the L.N.E. Railway. The beautiful church of S. Thomas à Becket is partly Norman. There are slight remains of a Benedictine abbey. Market day, Wed. Pop. 5,136.

RAMSEY. Market town and seaport of the Isle of Man. It stands on Ramsey Bay, on the N.E. coast, at the mouth of the river Sulby, 14 m. from Douglas, with which it is connected by rly. and electric tramway. The town has good sands, promenades, and a pier. In N. Ramsey is Mooragh Park, with a marine lake. Market day, Mon. Pop. 4,297.

RAMSGATE. Borough, seaport, and watering place of Kent. It is on the E. coast, in the Isle of Thanet, 74 m. from London, being served by the Southern Rly. Steamers go to and from London, and also to Boulogne and elsewhere. Two stone piers enclose a fine harbour. With the exception of the

church of S. Lawrence, the chief churches are modern. The Roman Catholic church of S. Augustine is a fine example of A. W. Pugin's work. The promenade known as Prince Edward Promenade and Undercliff Drive was opened in 1926. A wide arterial road from the W. end of the town to the West Cliff forms the improvement known as St. Lawrence Cliffs. Pop. 36,503 See Frith, W. P.

RAND OR WITWATERS. RAND. Gold-mining district in the Transvaal, S. Africa. The ridge extends some 40 m., and its reefs contain, it is estimated, the largest reserve of auriferous ores in the world. Johannesburg is the centre of the goldfield, which was proclaimed in 1886. In 1929 the output of gold totalled £45,000,000, making a total output since the mines were opened of just about £1,000,000,000. See Gold; Johannesburg; Transvaal.

RANELAGH. Former London place of amusement. It was named after Richard Jones, 1st earl of Ranelagh, who built a house and laid out gardens here, 1690-91. From 1742-1803 they rivalled Vauxhall (q.v.) for concerts, masquerades, etc. A notable feature was the Rotunda, resembling the British Museum reading-room. The grounds are now part of Chelsea Hospital.

The Ranelagh Club is a London social and sporting club. Established in 1894, in Barn Elms Park, S.W., it provides facilities for polo, golf, croquet, tennis, etc.

RANGE FINDER. Instrument used to ascertain the distance of the target from the firing point. Most types depend on the principle of measuring the angles of the triangle which is formed by making the target the apex and the instrument the base: and in order to simplify the measurements to be taken it is usual to arrange that one of the base angles is a right angle, leaving only one unknown angle to measure. The instrument is thus actually a goniometer (angle measure). In the Barr and Stroud instruments the angles which two beams of light from the target make with the opposite ends of a known base line are measured. The base line is formed by a rigid metal tube having at each end reflecting prisms, which divert the beams of light along the axis of the tube. At the centre other prisms divert the beams into a single eyepiece, and are so arranged that the beam of light from the right end forms the upper, and that from the left the lower, half of the field. The angles of the reflecting prisms must be varied to enable a continuous complete image to be obtained of targets at varying distances from the base.

RANGOON. Capital of Burma. On the Rangoon river, about 21 m. from its mouth, it is the main export centre of the great Burmese rice-fields, other exports including teak, raw cotton, petroleum, and hides. Native industries include wood and ivory carving and silver work. To the W. of the royal lake lies

the magnificently gilded Shwe Dagon Pagoda, one of the greatest pilgrimage shrines of Buddhism. Modern buildings include Government House, Jubilee Hall, Anglican and R.C. cathedrals, and other features are the native bazaars and the lakes to the N. of the city. In 1920 a teaching university with two art colleges was established. Pop. 345,505.



Ramsgate. The Royal Parade on the sea front of this Kentish resort

RANJITSINHJI, KUMAR SHRI (b. 1872). Indian prince and cricketer. Born at Saradar, India, Sept. 10, 1872, and educated at Cambridge, his wonderful powers as a cricketer soon attracted attention, and in 1895 he became a member of the Sussex county team. In 1896 and 1900 he was at the head of the English batting averages, and he played for Cambridge University and for England against Australia. In 1906 he succeeded his cousin as maharaja of Nawanagar.

RANKE, LEOPOLD VON (1795-1886). German historian. Born Dec. 21, 1795, at Wiehe, in Thuringia, he became a good classical scholar, and after leaving the university was for a time a teacher at Frankfurt-on-Oder. There he wrote, in 1824, his first book, and on the strength of it was made professor extraordinary at Berlin. After further study abroad, Ranke became full professor at Berlin in 1837, and there he lectured and taught almost until his death. He was made historiographer of Prussia, and died in Berlin, May 23, 1886.

Ranke's works, as collected in 1881, fill 51 volumes. The greatest are probably his History of the Popes, which has been translated into English, and his History of Germany during the Reformation.

RANNOCH. Loch or lake of N.W. Perthshire, Scotland. It lies to the E. of the bleak moorland dist. of Rannoch and has a length of 9 m. It receives the Eicht, and is drained by the Tummel into the Tay.

RANUNCULUS. Genus of annual and (mostly) perennial plants, of the order Ranunculaceae. The most popular wild member, the buttercup, is one of 28 natives of Britain. Others have been introduced into gardens from abroad at various dates since 1596. The old garden ranunculus (R. asiaticus) is tuberous-rooted, and should be planted in good loam.

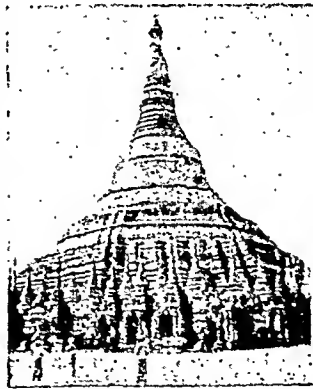
The varieties are innumerable, and the flowers of all shades and colours.

RAPALLO. Seaport and health resort of the Italian Riviera, 16 m. by rly. E.S.E. of Genoa. It has a castle and a Roman bridge and near is a popular pilgrimage church. Lace and olive oil are the principal manufactures. Tunny fishing is an industry. Pop. 7,177.

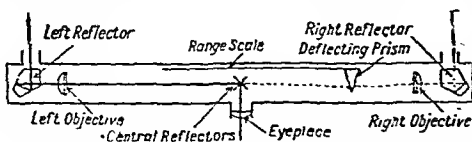
The treaty of Rapallo was signed by Italy and Yugoslavia, Nov. 12, 1920. By it the frontier between the two nations was fixed, and Italy renounced Dalmatia, but Zara, together with its commune and several adjacent communes, were placed under Italian sovereignty. Both powers recognized the



K. S. Ranjitsinhji,
Indian prince



Rangoon. Main building of the famous Shwe Dagon pagoda



Range Finder. Diagram illustrating principles on which the Barr and Stroud instruments are constructed

independence of Fiume. Finally it settled the Adriatic question, giving Yugoslavia possessions on the E. coast. Both nations ratified the treaty early in 1921. See Italy; Yugoslavia.

RAPE. Cruciferous forage crop which may either take the place of ordinary roots in a rotation or be grown as a catch crop. It is an excellent sheep feed. There are two kinds, the smooth-leaved summer rape (*Brassica campestris*) or dwarf, and the rough-leaved winter rape (*Brassica napus*) or giant. Swede and turnip are derived from these respectively, but have developed enormously thickened roots. Colza (q.v.) oil is obtained from the seeds, which are also made into oilcake, a cattle food.

RAPE. Division of the county of Sussex. It is the equivalent of the hundred in other counties. There are six rapes, Hastings, Perensy, Lewes, Bramber, Arundel, and Chichester. See Sussex.

RAPHAEL. In the O.T. Apocrypha, one of the seven angels which present the prayers of the saints and go in and out before the glory of the Holy One (Tobit 12, 15). He is represented as being sent to cure Tobit of blindness and to bind the evil spirit Asmodeus.

RAPHAEL (1483-1520). Italian painter. Born at Urbino, April 6, 1483, his father was Giovanni Santi, a poet and painter, whose name latinised into Sanctius was in the son's italianised back into Sanzio. When seventeen he went to Perugia, to work in the studio of Perugino, and later on in Florence, he made a particular study of the work in sculpture of Donatello and Michelangelo, and of the



Raphael, Italian painter
Self-portrait, Uffizi Gallery

paintings of Leonardo. To this period of his career can be attributed his long series of paintings of the Madonna and Child and his greater altarpieces. In 1508 he was entrusted by Julius II with the decoration of certain rooms in the Vatican. It was then that he painted his great group of the Greek Philosophers, generally known as the School of Athens. Raphael's designs for the tapestries of the Sistine Chapel were prepared in 1515, and seven of them can be inspected at the Victoria and Albert Museum, London. In 1514 he was appointed by Leo X to succeed Bramante as architect of S. Peter's. He died on April 6, 1520.

His most popular pictures are the Madonna de San Sisto, in Dresden; the Madonna della Sedia and the Madonna del Gran Duca in Florence; the St. George and the Dragon in Leningrad; the portraits in the Pitti Gallery, in Florence; and the Ansidei Madonna in London. See Gregory VII; Julius II.

RAPHIA PALM (Raphia). Small genus of trees of the order Palmae, natives of tropical Africa, Madagascar, and S. America. They have short trunks, but the erect leaves are frequently of enormous length. Those of *R. ruffia*, from the Mascarene Islands, are 50 or 60 ft. long, and of feather-form. The flower spikes also are large—6 ft. long. *R. tadicera*, native of the Amazons, has leaves of similar length and 7 ft. or 8 ft. wide, whose leaf-stalks, 12 to 15 ft. long, serve many of the uses of bamboos. *R. vinifera* (wine palm), native of W. Africa and the Amazons, from the similar use made of its leaf-stalks, is known as the bamboo palm.

RAPHOE. Town of co Donegal, Irish Free State. It is 15 m. from Londonderry. Raphoe grew up around a monastery, and was made a bishopric in the 8th century. In 1835 the see was united with that of Londonderry. Pop. 748.

RAPIER (Fr. *rapière*). Light, slender sword of highly tempered steel used solely for thrusting. It is about three feet in length, and was a favourite weapon with duellists in the 16th and 17th centuries. The successor to the rapier as a duelling weapon was the shorter small-sword of the 18th century. It was developed to its best in Italy and France.

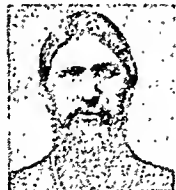
Rappahannock. River of Virginia, U.S.A. It rises in the Blue Ridge, and flows into Chesapeake Bay. Its length is 250 m.

RARE EARTH. Name given to certain metallic oxides formerly regarded as elementary bodies, as yttria, ceria, ceria, lanthana, samaria, and didymia. They are conveniently classified according to the elements they yield: I. The yttrium group, consisting of dysprosium, erbium, holmium, terbium, thulium, yttrium, ytterbium, and lutecium. II. The cerium group, consisting of cerium, europium, gadolinium, lanthanum, neodymium, praseodymium, samarium, and scandium. III. Thorium. IV. Zirconium. The oxides are known as rare earths because of the comparatively small quantities which are found in minerals. See Hafnium; Illium; Masurium, etc.

RASPBERRY (*Rubus idaeus*). Shrub of the order Rosaceae. Natives of Britain and other European countries, raspberries will thrive in any soil except clay, or one that has a clay subsoil. The canes are planted in autumn or spring, at a distance of 2 ft. apart and 4 ft. between the rows. They require some support. As fruit is borne only on one-year-old canes, the old wood is cut away ruthlessly at the end of each season.

The principal disease, raspberry spot, may be dealt with by spraying with a weak solution of sulphate of copper, or Bordeaux mixture.

RASPUTIN, GREGORY (1873-1916). Russian fanatic. Generally called Rasputin, which means the immoral, his real name was Novikh, and he was born at Pokrovsky, Siberia. He began life as a fisherman, but soon showed himself a drunkard and a thief, and was punished for stealing. He became a professional pilgrim, and eventually acquired the reputation of a saint and a faith healer.



Gregory Rasputin,
Russian fanatic



Raspberry. Fruit and leaves
of a cultivated cane



Rat. Left, brown rat and, right, black rat, two British species of the rodent. The former is larger and more ferocious than the latter. See above



W S Berridge, F.Z.S.

In 1905 he went to St. Petersburg and gained an influence at the Russian court, which was much increased by the tsarina's belief in his ability to cure and keep cured the tsarevitch, her ailing son. Gradually he acquired a com-

manding position and made and unmade ministers, while continuing his dissolute life. On Dec. 29, 1916, he was assassinated in Petrograd.

RAT. Term applied to many rodents of the family Muridae, which includes the mice, rats, hamsters, voles, lemmings, and many others. The largest group of the rodents, it is world-wide in distribution.

The rats proper are found only in the old world. Great Britain possesses two species, the black rat and the brown rat. The black rat is shorter in body than the more familiar brown species but has a longer tail. Its hair is greyish black on the upper parts and pale yellow below. The tame white and piebald rats are said to be descended from this species. The brown rat is larger than the black rat, and more ferocious in disposition. Rats prefer the neighbourhood of human dwellings and farms on account of the ease with which food may be obtained.

In England the Ministry of Agriculture has devoted much energy towards exterminating rats, and various county councils throughout the country have organized periodical campaigns. An Act of 1921 placed on householders the onus of destroying rats and mice on their premises under penalty of a fine.

RATAFIA. Generic name for cordials or liqueurs made from, and flavoured with, cherries, almonds, apricots, peaches, nectarines, or plums. The crushed kernels, as well as the flesh of the fruit, are steeped in the spirit, afterwards distilled. Pron. ratafeca.

RATEL (*Mellivora*). Genus of carnivorous mammals, related to the badger, and found in India and S. Africa. Contrary to the usual rule of coloration, their upper parts are light grey and the under ones black. They have stout bodies and short legs and tail. They live in burrows, and feed by night upon small birds and mammals and honey.

RATES. In the United Kingdom, term for the money raised by local authorities.

The oldest rate is the poor rate, first levied in 1597. Later other rates were levied for the expenses of highways, sanitation, education, etc. To-day, however, the rates are consolidated into a single general rate which is levied and collected by the town or urban council or other local authority, which distributes the proceeds among the various authorities concerned. The one exception is the water rate, which is collected separately.

Rates are levied at a certain figure in the £ on all property except agricultural. For this purpose each factory, shop or house has a rateable value which is something less than the annual rent. To ascertain this value a valuation is made every five years. In 1896 agricultural land was relieved of half its rates, and in 1929 a further measure entirely relieved this form of property from rates.

Other important changes in rating came into force in that year. These include the relief of all premises where productive industry is carried on, factories and the railways share in this benefit. See Assessment.

RATH. Irish hill-fort. An earthen embankment, usually round, often stake-fenced, it protected, in the larger examples, the



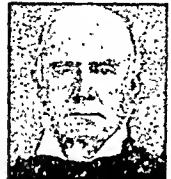
Ratel. Example of the burrowing
carnivore, allied to the badger
W S Berridge, F.Z.S.

residence of a chief and his dependents. Nearly 30,000 remain, and the term enters into 700 place-names. as Rathlin, co. Antrim

RATHLIN OR RAGHERY. Island of Ireland, off the N coast of co. Antrim. It measures 6 m. from E. to W. and has a breadth of 1½ m. S. Columba founded a church here. Pop. 350.

RATHMINES. Suburb of Dublin, Irish Free State. It has a station on the Great Southern Railways, and was included in the enlarged city of Dublin in 1930. Pop. 39,984

RATHMORE, DAVID PLUNKET, BARON (1838-1919). Irish statesman. Born Dec 3, 1838, the third son of the third Baron Plunket, he was called to the Irish bar in 1862. In 1870 he was elected M.P. for Dublin University. Plunket became solicitor-general for Ireland, 1874-77, paymaster-general, 1880, and first commissioner of works, 1885. He was again commissioner of works 1886-92, and in 1895 he was raised to the peerage as Baron Rathmore. Later he was associated with railways. He died Aug. 22, 1919.



Baron Rathmore,
Irish statesman

RATHVEN. Coast parish of Banffshire, Scotland. It is 4 m. W.S.W. of Cullen, on the L.M.S. Rly., and contains numerous cairns and tumuli. Pop. 15,400.

RATIBOR. Town of Silesia, Germany. It stands on the Oder at the point where it becomes navigable, and is an important rly. and road junction, 95 m. by rly. from Breslau. Situated on the outskirts of the Upper Silesian coalfield, it has iron foundries and manufactures machinery, especially railway rolling stock. There are also paper mills and sugar factories, and the place does a considerable trade in coal and agricultural produce. Pop. 49,072.

RATIONALISM (Lat. ratio, reason). In philosophy, the theory that reason is the chief, if not the only, source of knowledge. It is opposed to both empiricism and sensationalism. According to the rationalist, reason is an original faculty which supplies us with concepts and first principles, different from the data of sense, which make it possible to go beyond sensible knowledge and attain the reality of things. While, however, some regard these concepts as innate in the mind, others regard them as immediately discerned by the mind, as intuitive principles.

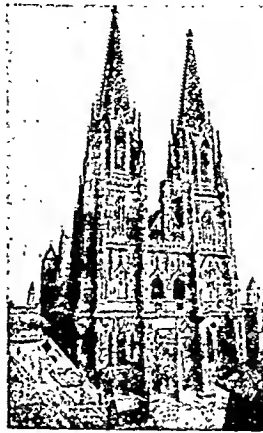
In theology, rationalism, as opposed to supernaturalism, is the system which interprets all religious belief and dogma in the light of reason, rejecting the authority of tradition.

RATIONALIZATION. Term much used in industry in 1929 and 1930 for improved methods of manufacturing. Among the results of the rationalization process are a growing control over the market, a growing standardization of process and output, and an increasing output per worker.

RATIONING. The assigning by authority of a restricted amount of food, per head of the population, in time of national shortage. In Great Britain during the Great War the first food to be rationed was sugar. This was carried out in 1917 by the issue of sugar cards from London, entitling each individual to purchase a certain quantity of sugar per week from a retailer selected by the purchaser. Later other staple foods were controlled, and under the Rationing Order, 1918, ration books were issued by the Ministry of Food. These books had to be registered for the purchase of sugar, fats, butcher's meat, and bacon, and detachable counterfoils or coupons were provided for successive weeks.

RATISBON OR REGENSBURG. City of avaria. It stands at the junction of the

Danube and the Regen, 85 m. from Munich. The chief building is the cathedral, largely 13th century: the towers were completed in



Ratisbon, Bavaria. West front
of the 13th century cathedral

the 19th century. It contains some fine works of art. Other churches are those of S. James and S. Ulrich. The church, which has a detached belfry, and the cloisters remain of the abbey of S. Emmeran. There are a town hall dating from the 14th century, a number of fine old houses, including the Golden Cross Inn, in the crooked streets, and, more modern, a palace built by the king of Bavaria. The industries include a trade along the river and the manufacture of iron and steel goods, pottery, etc. Pop. 76,948.

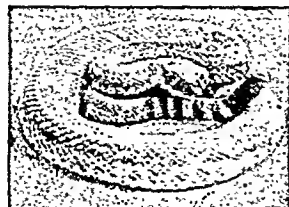
RATTAN (*Calamus rotang*). Reed-like climbing plant of the order Palmae. A native of India, it has large, arching, feather-like compound leaves, three or four ft. long. The stems of this and several other species furnish the "canes" of commerce, used for walking-sticks and basket-work, and, when cut into thin strips, for the seats of cane-bottomed chairs. The stems are only an inch or two in thickness.

RATTAN PALM. Dwarf palm of the order Palmae, a native of China and Japan. The stems are about a foot and a half high, growing in dense tufts, rough with the decayed bases of former leaf-stalks. The leaves, which have long slender stalks, are divided into five to seven spreading leaflets.



Rattan, foliage and fruit
of the climbing plant

RATTLESNAKE (*Crotalus*). Genus of venomous snakes, including about 16 species, natives of America, mostly of N. America.



Rattlesnake. Texas rattlesnake
coiled, with rattle lifted
W. S. Berridge, F.Z.S.

Like the vipers, they possess poison fangs. In most species the coloration is of a protective character, and their movements when hunting are stealthy. The characteristic "rattle," terminating at the tail, consists of a series of horny cups loosely articulated, so that vibration of the tail produces the rattling sound. Obscure in its purpose, this noise is produced by the animal when excited. See Reptile; Snake.

RATTRAY. Burgh of Perthshire, Scotland. It stands on the Erich, opposite Blairgowrie, 9 m. from Dunkeld. There are mills for flax

spinning, and near the town are traces of a castle. Pop. 1,740.

RAUCH, CHRISTIAN DANIEL (1777-1857). German sculptor. Born at Arolsen in Waldeck, he studied sculpture under Valentin and Ruhl, and later entered the household of Frederick William III at Berlin. His greatest work was the monument of Frederick the Great at Berlin, unveiled 1851. One may cite also the mausoleum of Queen Louise at Charlottenberg, the Dürer monument at Nuremberg, and statues of the Tsar Alexander, Blücher, and Maximilian of Bavaria. He died Dec. 3, 1857.

RAUNDS. Urban dist. of Northamptonshire. It is 8 m. from Wellingborough, on the L.M.S. Rly. S. Peter's church has a spire 183 ft. high. It contains some old tombs, and has other interesting features. The chief industry is the manufacture of boots and shoes. Pop. 3,763.

RAVEL, MAURICE (b. 1875). French composer. Born at Chorme, March 7, 1875, he studied at the Conservatoire in Paris. His works include a ballet, Daphnis and Chloe, many pianoforte pieces and some songs, as well as a number of orchestral works.

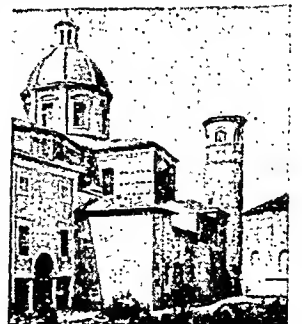
RAVEN (*Corvus corax*) Large bird of the crow family, found throughout the N portions of both hemispheres. Its plumage is black with purple reflections, and it is about 25 ins. in length. The beak is strong and massive. Formerly common throughout Great Britain, it is now found only in mountainous and secluded districts, more especially about the N. shores of Scotland and in the Western Islands. It is a powerful bird on the wing and soars high in the air, but it rises from the ground in a very slow and flapping fashion. The raven is omnivorous in diet, and all kinds of animal food, eggs, fruit, grain, insects, and grubs are readily devoured. In captivity it makes an intelligent, amusing, but very mischievous pet.



Raven, a bird of
the crow family

RAVEN-HILL, LEONARD (b. 1867). British artist. Born March 10, 1867, and educated at Bristol and Devon Co. School, he studied at Lambeth school of art, and in Paris under Bouguereau. After painting and exhibiting at the Salon and Royal Academy for some years, he founded the illustrated Butterfly, 1893, and in 1896 began to draw for Punch.

RAVENNA. City of Italy. It stands in a marshy plain, 6 m. from the Adriatic, 44 m. by rly. E.S.E. of Bologna. It is still surrounded by old walls, which were once washed by the waters of the Adriatic. Of very ancient origin, it is second only to Rome in the importance of its early Christian art. Its cathedral dates from the 4th century. Other old churches include those of S. Giovanni Evangelista, dating from 425; San Vitale, from about 530; S. Apollinare in Classe, from about 535; and the Mausoleum of Galla Placidia, from 440, notable for its mosaics. Ravenna



Ravenna. The cathedral, which
dates from the 4th century

contains a museum of Roman and Byzantine antiquities, the tomb of Dante, and a valuable library. Of its important Roman structures nothing now lies above ground. Ravenna was the seat of the exarch of the Eastern Emperor until 752. Pop. 78,997. See Dante.

Ravenscar. Seaside resort of Yorkshire (N.R.) It is 10 m. from Scarborough, with a station on the L.N.E. Rly.

RAVENSPUR. Ancient seaport of Yorkshire. It stood near Spurn Head, and in the 14th century was a prosperous seaport. Here, in 1399, Henry IV landed. Soon the sea began to encroach, and by 1500 the place had disappeared.

RAVENSTHORPE. Town of Northamptonshire. It is 8 m. from Daventry. There is another Ravensthorpe in Yorkshire (W.R.), a manufacturing centre. Pop. 6,719.

RAVENSWOOD. Town of Queensland, Australia. It is the terminus of a branch line from the Townsville-Cloncurry rly., is 78 m. from Townsville, and the centre of a goldfield. Pop. 2,000.

RAVENSWORTH. Village of Durham, 3 m. from Newcastle-upon-Tyne. Here is Ravensworth Castle, the seat of Lord Ravensworth. In 1642 Thomas Liddell (d. 1650) was made a baronet for supporting Charles I, and in 1821 Thomas Henry, the 6th baronet, was made a baron. Henry Thomas, the 2nd baron, was made an earl in 1874, but the earldom became extinct when the 3rd earl died in 1904. The barony survived, and in 1919 Gerald W. Liddell became the 6th baron.

RAWALPINDI. Division, dist., and town of the Punjab, India. The division lies in the N.W. of the province; it is sparsely populated, mainly by Mahomedans.

The dist. lies W. of Kashmir and W. and N. of the Jhelum. Most of it is a high plateau, much dissected by ravines. Forest covers a considerable area. Wheat, pulses, and millet are grown. The area of the division is 21,391 sq. m.; dist., 2,010 sq. m. Pop., div., 3,460,710; dist., 560,224.

The town is situated on a tributary of the Sohan, has strategic roads and rlys., and is an important military cantonment. It has rly. workshops, a brewery, and an arsenal. There is trade with Kashmir. Pop. 101,142.

RAWDON. Urban dist. of Yorkshire (W.R.) It is 5 m. from Bradford, on the L.M.S. Rly. The chief industry is the manufacture of cloth. The marquess of Hastings took from here the title of earl of Rawdon, his ancestors having lived at Rawdon Hall. Pop. 3,784.

RAWLINSON, SIR HENRY CRESWICK (1810-95). British Orientalist and diplomatist. Born at Chadlington, Oxfordshire, April 11, 1810, while in Persia in the service of the East India Company he devoted his leisure to the study of the cuneiform inscriptions. In 1840 he became political agent at Kandahar, and rendered valuable service throughout the Afghan War. Four years later he was made consul at Bagdad, where he collaborated with Layard in his excavations at Nineveh and elsewhere. In 1859 he was appointed minister plenipotentiary to Persia, but retired a year later. Rawlinson wrote largely on the cuneiform inscriptions, and was the author of a History of Assyria. He was made a baronet in 1891. He died in London, March 5, 1895.

RAWLINSON, HENRY SEYMOUR RAWLINSON, 1st BARON (1864-1925). British soldier. Born Feb. 20, 1864, he was the eldest son of

Sir H. C. Rawlinson, to whose baronetcy he succeeded in 1895. In 1884 he joined the 60th Rifles, transferring to the Coldstream Guards in 1892. In 1898 he joined



Lord Rawlinson,
British soldier
Russell

Kitchener's staff in Egypt, and was in the expedition that recovered Khartoum. He served in S. Africa and was commandant of the Staff College at Camberley from 1903 to 1906. When the Great War broke out Rawlinson was made director of recruiting at the war office. In Sept. he was put at the head of the 7th Division, which took part in fierce fighting in 1914-15. At the end of 1915 he was given command of the Fourth Army, and was responsible for the main attack on the Somme in July, 1916. Early in 1918 he was appointed to the Versailles council. In March, however, after the disaster of St. Quentin, Rawlinson was recalled to the front, and his Fourth Army took a brilliant part in the final offensive. In 1919 he was created a baron, and awarded £30,000 for his war services. Commander-in-chief in India, 1920-25, he died Mar. 28, 1925, when the peerage became extinct. Consult Life, Sir F. Maurice, 1928.

RAWMARSH. Urban dist. of Yorkshire (W.R.) It stands on the Don, 2 m. from Rotherham, with a station on the L.M.S. Rly. The chief industries are the making of iron and steel, bricks, and pottery. Pop. 17,911.

RAWTENSTALL. Borough of Lancashire. It is 19 m. from Manchester, on the L.M.S. Rly. Cottons and woollens, felts, and slippers are manufactured, and there are coal mines in the neighbourhood. Pop. 28,376.

RAY. In geometrical optics, a line of light. It was defined by Newton as the least portion of light that can be propagated or stopped alone. More recently it has been described as the motion of a particle of light; and is more precisely defined as the straight line in which the radiant energy that produces the sensation of light is propagated to any given point. See Light; Refraction.

RAY. Name given to many fishes of the Elasmobranch order, including the sharks and skates. In the rays the skeleton is cartilaginous, the body is flattened, and the pectoral fins greatly expanded. See Skate.

RAYLEIGH. Village of Essex. It is 7 m. W. by N. of Southend-on-Sea, with a station on the L.N.E.R. It is mentioned in Domesday Book, and has a moated mound which marks the site of Sweyn's Castle. Pop. 3,125.

RAYLEIGH, JOHN WILLIAM STRUTT, 3RD BARON (1842-1919). British physicist. Born at Langford Green, Essex, Nov. 12, 1842, he succeeded to the title in 1873. Appointed to the chair of experimental physics at Cambridge and director of the Cambridge laboratory in 1879, he was professor of natural philosophy at the Royal Institution, 1887, a post he held till 1905, when he became president of the Royal Society. In 1908 he was appointed chancellor of Cambridge University. He was appointed to the Order of Merit, 1902, and in 1904 was given the Nobel prize for physics. He died June 30, 1919.

Rayleigh's researches resulted in the remarkable discovery that the atmosphere contained several, till then, unknown gases. In other branches of science Rayleigh left the enduring mark of his genius. See Argon.



Lord Rayleigh,
British physicist
Russell

His son, Robert John Strutt, 4th Baron Rayleigh (b. 1875), early showed much of the brilliance of his father, to whose title he succeeded in 1919. He made a study of radium.

RAYNAUD'S DISEASE. Localised contraction of the blood vessels in the extremities, causing the fingers or toes to become cold and white, or "dead." Attacks may be brought on by exposure to cold or emotional disturbance. The condition passes off quickly.

Rayon. Alternative name for artificial silk prepared from forms of cellulose. See Artificial Silk; Viscose.

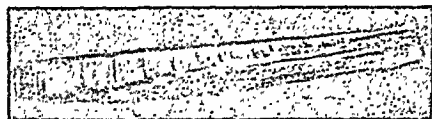
RAZORBILL (*Alca torda*).

British sea bird of the auk family. It is 17 ins. long in body, and the plumage is greenish black on the upper parts, brown on the throat, and white below. The beak is very massive, and is flattened laterally. The bird generally much resembles the extinct great auk, of which it is the nearest living relation. The razorbill occurs sparsely around the British coasts.



Razorbill. British sea bird allied to the extinct Great Auk

RAZOR SHELL OR **RAZOR FISH.** Popular name for the solen. This is a common bivalve mollusc of which several species occur off British coasts. The shell is long and narrow.



Razor Shell. The common bivalve *Solen siliqua*

REACTION OR REGENERATION. In wireless reception, the use of regenerative amplification, by causing the currents in the plate circuit of a triode valve to react on the grid circuit. A coil connected in the plate circuit is coupled magnetically to the grid coil, in which it induces current variations in step with those of the plate current. Thus the oscillations set up in the valve by incoming waves are strengthened. The degree of reaction is controlled by a variable condenser, hence called the reaction condenser.

READE, CHARLES (1814-84). British novelist and dramatist. Born at Ipsden House, Oxfordshire, June 8, 1814, he became a barrister, but soon turned to literature. He began with plays, of which the best known are *Masks and Faces*, 1852, written in collaboration with Tom Taylor, *The Lyons Mail*, and *Drink*, 1879, adapted from Zola's *L'Assommoir*. His reputation was made, however, with his novels, especially with *The Cloister and The Hearth*, 1861. Of the others may be mentioned *Peg Woffington*, 1852; *It is Never too Late to Mend*, 1856; *Hard Cash*, 1863; *Griffith Gaunt*, 1866; *Foul Play*, 1869; and *The Wandering Heir*, 1875. He died April 11, 1884.

READING. County borough of Berkshire, also the county town. It stands on the Thames, where it is joined by the Kennet, 36 m. from London, and is served by the G.W., Southern, and L.N.E. Rlys. The churches of S. Lawrence and S. Mary and the restored chapel of the Grey Friars are interesting. The museum contains relics from Silchester (q.v.). A university college was opened here in 1892, and in 1926



Charles Reade,
British novelist



Sir H. Rawlinson,
British Orientalist

this was made into a university. The gaol, in which Oscar Wilde wrote *De Profundis*, was closed in 1919. Some ruins of the Benedictine abbey remain, and the grounds are public property. Reading is an important agricultural centre, being especially noted for seeds. It has large engineering works and biscuit factories. In 1929 an aerodrome was opened at Woodley. Pop. 93,799.

READING. City of Pennsylvania, U.S.A. It stands on the Schuylkill river, 59 m. N.W. of Philadelphia, and is served by the Philadelphia and Reading and the Pennsylvania rlys. Reading lies in an important coal and iron mining region, and trades in agricultural produce. It has rly workshops, iron and steel works, machine shops, woollen and worsted mills, and hosiery, hardware, and boot and shoe factories. Pop. 112,707.

READING, RUFUS DANIEL ISAACS, 1ST MARQUESS OF (b. 1860). British lawyer and administrator. Born in London, Oct. 10, 1860,



Lord Reading,
British lawyer.
Russell

he became a barrister in 1887, and in 1898 a Q.C. In 1904 he entered Parliament as Liberal M.P. for Reading, and in 1910 was appointed solicitor-general and knighted. Soon promoted attorney-general, he was the first occupant of that office to be a regular member of the cabinet. In 1913 Isaac was made lord chief justice, the first Jew to hold that position, and in 1914 a baron. In 1921 he became governor-general of India, retiring in 1926. Made a viscount in 1916, he was created earl in 1917, and was raised to the rank of marquis in 1926. His eldest son is known as Viscount Erleigh.

REAL. Coin formerly used in Spain, Portugal, and Mexico. In Spain it was the tenth part of an escudo and was nominally worth 2½d. The Mexican real was one-eighth of the American dollar.

REALISM. In literature, term applied to the school of writers of fiction who describe life with strict fidelity to actual fact and detail, as opposed to the schools of romanticism or classicism. The realist tendency, often called also naturalism, became crystallised into a definite school, mainly under French influence, in the second part of the 19th century. Realism in painting and sculpture aims at the direct representation of any object as it is. See Romanticism.

As a philosophical term, realism has two distinct meanings. As opposed to nominalism (q.v.), it is the theory, held by certain of the schoolmen, that general ideas, the universals, had an existence independent of individuals and the individual mind. As opposed to idealism, it is the theory that external objects have an existence independent of any thought about them, and that our knowledge of them is immediate or intuitive.

REALPOLITIK (Ger. policy of reality). Term used during the last thirty years of the German empire to denote the political attitude inaugurated by Bismarck and pushed to extreme lengths by his successors. The adherents of Realpolitik maintained that the politician should look primarily to the material interests of his nation, disregarding abstract theories and humanitarian ideals. See Bismarck; Germany.

REAL PROPERTY. One of the two sections into which property is divided under English law. In early times actions at law



Reading. Municipal offices and parish church of St. Lawrence

were of two kinds, real and personal. A real action was where the plaintiff asked the court to award him the thing (*Lat. res*) sued for. A personal action was when the plaintiff simply asked for damages against the person he sued. The only "res" that could be specifically recovered was freehold land, which was accordingly called "real" property. If a man was deprived of a leasehold interest or of a chattel he could not get it back again, but had to be content with a personal action for damages. The Law of Property Act, 1925 modified the effects of the distinction between real and personal interests in land.

REAM. Measure of paper. It consists of 480 sheets, or 20 quires. The perfect, lung, or printer's ream contains 516 sheets, a news ream, 500 sheets.

REAR ADMIRAL. Officer of the British navy, the lowest of flag rank. He is distinguished by the broad gold band with one narrow gold band and our above it upon the cuff. Rear admirals are the next in rank above commodores, and equivalent to major-general in the army and to air vice-marshal in the R.A.F.



Rear Admiral's cap badge

RÉAUMUR. Name given to a thermometer scale invented by R. A. F. de Réaumur (1683-1757). The difference between the freezing and boiling points of water is divided into 80 degrees. See Thermometer.

REBEC. Medieval string instrument of Oriental origin. It seems to have died out about the middle of the 17th century. Its shape was that of a pear cut in half longitudinally. A modification in the 12th century was called the Rubebe or Rybybe, which eventually became the parent of the viol and the fiddle.

REBEKAH. In the O.T., sister of Laban and wife of Isaac. The mother of Jacob and Esau, she invented the plan by which her favourite son Jacob deprived Esau of his father's blessing.

REBUS (Lat. by things). Allusive representation of a name or thing by means of pictorial devices. In heraldry, such devices were common during the Middle Ages. See Allusive Arms.

RÉCAMIER, JEANNE FRANÇOISE JULIE ADELAÏDE BERNARD (1777-1849). French society leader. Born at Lyons, Dec. 4, 1777, she came to Paris, 1784, married Jacques Récamier, a wealthy banker, 1793, and about 1798 became an intimate friend of Madame de Staël. In 1811 she was forbidden by Napoleon, who feared her enmity, to live in or near Paris. She returned in 1815, was the intimate friend of Benjamin Constant, and her later years were passed with

Châteaubriand. Her salon at L'Abbaye-aux-Bois was a famous social centre. She died in Paris, May 11, 1849.

RECEIPT. Acknowledgment of payment. It is not necessary in English law. A debtor cannot refuse to pay what he owes unless the creditor gives him a receipt. At the same time, if the creditor should so refuse, and the debtor declines to pay, and the creditor sues for his money, the judge will probably make the creditor pay the costs because of his unreasonable conduct. A receipt is *prima facie* evidence of payment; but the person who gave it is always at liberty to show, if he can, that although he gave a receipt he did not receive payment; or that there is a mistake. A receipt for money of £2 or over must bear a twopenny stamp, or otherwise cannot be used as evidence. It is an offence to omit to stamp such a receipt.

RECEIVER. In English law, (1) a person appointed by the court to hold property of any kind and preserve it for the benefit of those persons who are ultimately held to be entitled to it; (2) a person appointed by a mortgagee or debenture holder under a power in the deed to receive the rents and profits of the mortgaged property, and, after paying expenses, to pay what is due to the mortgagee.

When a person presents his own petition in bankruptcy, or a successful petition is presented against him by a creditor, a receiving order is made. (See Bankruptcy: Official Receiver.)

To receive property knowing it to have been stolen (including property acquired by false pretences, or extorted) is a criminal offence.

RECHABITES. Religious order of the Hebrews. Founded by Jehonadab, son of Rechab (2 Kings 10, 15-28), who assisted Jehu to destroy the worshippers of Baal, the sect or clan calling themselves "sons of Rechab" maintained the religion of Jehovah in purity, abstaining from wine, having no possessions, but living in the land as "strangers" (Jer. 35, 6-7). The term was revived in the 19th century by total abstainers known as the Independent Order of Rechabites.

RECONSTRUCTION (Lat. re-, again, construere, to put together). Term used in commercial law. When a limited liability company has suffered heavy capital losses, and it is not desired that the concern shall cease business altogether, it is not unusual to reconstruct the company. This is generally done by formally winding-up the company and transferring its business and assets to a new company, paying for the assets by shares in the new company which are only partly paid up, distributed amongst the old shareholders.

The term reconstruction is specially applied in American history to the process of restoring normal relations after the Civil War between the seceded southern states and the Union. It was again employed in 1917 and subsequent years to describe the plans evolved for the rebuilding of Europe after the Great War. There was a Ministry of Reconstruction in Great Britain from 1917 to 1920.

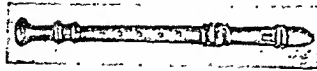
RECORDER. In England, a legal official of a city or borough. He is always a barrister of some standing. The appointment and duties of a recorder are now regulated by the Municipal Corporations Act, 1882. Under this statute, when a borough or city has a separate court of quarter sessions the crown may appoint a barrister of five years' standing to be recorder. He has precedence next after the mayor; but cannot be M.P. for the borough. Under the Act he cannot sit on the



Madame Récamier. From the painting by David, in the Louvre, Paris

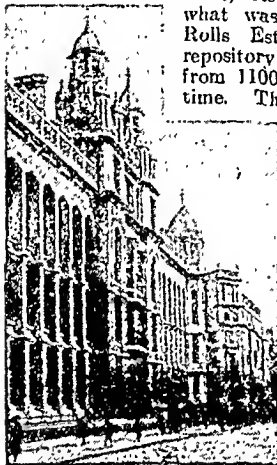
town council. He must hold his sessions at least once a quarter, and is the sole judge there. He hears certain appeals, and can try almost any crime except murder and treason. A recorder holds office during good behaviour, and is a J.P. for the borough. He must take, before the mayor and two town councillors, the oath of a justice of the peace and sign a declaration to discharge the duties of his office well and faithfully.

RECORDER. Instrument of the fipple flute family, having a very soft and sweet tone akin to the song of birds. It was a very favourite instrument in Tudor times, and is referred to in Elizabethan literature, e.g. in Hamlet; 3, 2. The instrument had eight finger-holes, and had a compass of about two octaves. It became known as the flûte-à-bee or English flute, and was eventually ousted by the stronger-toned transverse or German flute. At Chester there is a set of four.



Recorder. Sweet-toned instrument akin to the flute

RECORD OFFICE, PUBLIC. British national institution. It is situated N. of Fleet Street, between Chancery Lane and Fetter Lane, London, E.C., on what was known as the Rolls Estate, and is the repository of state papers from 1100 to the present time. The keeper of the records is the master of the rolls. The muniment rooms are arranged along narrow brick-paved passages, the entrances to which are guarded by iron doors, and the shelves on which the documents are preserved are of slate. Domesday Book is preserved here. Facilities are



Record Office, London. Main front in Chancery Lane

offered for private research work. There is also a record office in Dublin Castle for the Irish Free State

RECTIFIER. In electricity, a device which converts alternating current into uni-directional current. It is employed in connexion with electric arc lamps and motors taking current from an A.C. main. The rectifier has come into use also for converting A.C. current into D.C. for wireless receivers, thus doing away with the need for batteries. The electrolytic rectifier makes use of the fact that, in a cell containing electrodes of lead and aluminium, current will pass freely from the lead to the aluminium, but not in the reverse direction. The mercury vapour rectifier converts in a somewhat similar manner, as the vapour offers high resistance to current in one direction, but very little resistance in the other. In a common type of apparatus a thermionic valve is used as the rectifier.

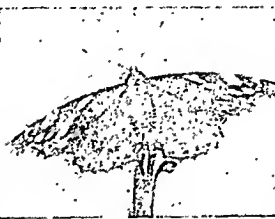
RECTOR (Lat. ruler). In ecclesiastical law, an incumbent of a benefice who enjoys all the tithes, whereas a vicar draws only a part. The word is also widely used in the United States for the incumbents of parishes in the Protestant Episcopal Church. The Roman Catholics use it mainly for the head of a religious house or college. At Oxford the heads of Lincoln and Exeter Colleges are known as rectors. In Scotland each of the four universities has a lord rector. See Benefice.

RECTUM. Terminal part of the large intestine, ending in the anus. It is about 8 inches long. Dilatation of the veins in the mucous membrane in the lower part of the rectum gives rise to haemorrhoids or piles. Inflammation of the rectum is known as proctitis, and may be due to chronic constipation, new growths, or threadworms. Prolapse of the rectum is a condition in which a part of the tube protrudes through the anal orifice. It occurs in children and weakly persons, or may be the result of chronic constipation, piles, and other disorders of the rectum.

RECULVER. Place in Kent, the site of the Roman Regium. It is on the S. shore of the Thames estuary, 3 m. E. of Herne Bay. There are remains of a fortress. Two towers, known as The Sisters, form a landmark; they are remains of an Early English church. British and Roman coins have been found.

RECUSANT (Lat. recusare, to refuse). Name formerly applied to those who refused to conform to the Church of England. The word was mostly used in the 16th and 17th centuries with reference to Roman Catholics who evaded the penal laws which obliged them to attend services in the English churches.

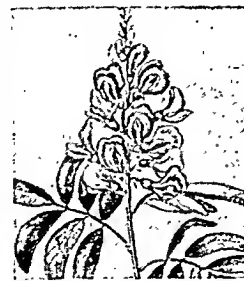
RED ADMIRAL (Vanessa atalanta). Common British butterfly. The expanse of the wings measures nearly 3 ins. The ground



Red Admiral butterfly poised in readiness for flight
John J. Ward, F.Z.S.

colour of the fore wings is velvety black at the tips with white spots; then comes a scarlet band, and the base of the wings is brownish. The hind wings are brown with a scarlet border. The insect is common in gardens and hedgerows towards autumn. The caterpillar is green with yellow spines, and feeds on nettles. See Butterfly.

RED BEAN (Sophora secundiflora) Small evergreen tree of the order Leguminosae, a native of Texas. The glossy leaves are broken



Red Bean. Foliage and flower spike

up into oval leaflets, and the violet flowers are in long sprays. The seed pods contain five or six hard, glossy, scarlet beans which contain a poisonous alkaloid having physiological effects similar to tobacco. They were much used by the Indian tribes as an intoxicant.

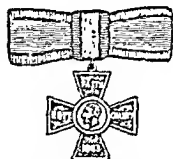
REDCAR. Borough and seaside resort of Yorkshire (N.R.). It is 8 m. from Middlesbrough, on the L.N.E. Rly. There is a fine beach, with good bathing and golf links, and also a racecourse. Pop. 16,401.

RED CROSS. International emblem of organizations formed for the relief of sick and wounded in war, and also, since the Great War, of the famine-stricken and for fighting epidemic disease. The founder of the movement was a Swiss, Henri Dunant (1828-1910). As a consequence of his efforts international

conferences on the subject of forming relief agencies were held in Geneva, 1863-64, resulting in the Geneva Convention of the latter year. Under this, which was accepted by 54 governments between 1864 and 1907, the International Red Cross Society was founded, with headquarters at Geneva, whose emblem was the Swiss flag with colours reversed.

In all countries the care of the sick and wounded in war is primarily the duty of the state. In Great Britain, both army and navy have their own medical and nursing services. But the strain put on these organizations in time of war makes the help of civilian societies essential. The British Red Cross Society, which was founded in 1870 and incorporated in 1908, provides additional nurses, voluntary aid detachments of persons qualified to do the less skilled work of the hospitals, and skilled physicians and surgeons. Under the conventions which govern the relations of nations in time of war, immunity from attack is accorded to Red Cross workers. See Knights Templars; Nursing; S. John.

The British decoration, the Royal Red Cross, was instituted in 1883 for nurses and others who tend the sick and wounded.



Red Cross. British decoration for nurses

RED DEER (Cervus elaphus). Largest species of the deer family found in Great Britain. It now occurs wild chiefly in the highlands of Scotland and in the western islands, on Exmoor in England, and in co. Kerry in Ireland. The stag stands about 4 ft high at the withers, the hind being about 6 ins. shorter, and the weight of a fine specimen may attain 400 lb. The pelt is reddish brown, sometimes tinged with grey on the upper parts, and much lighter beneath, with a yellowish patch on the rump. The reddish tinge is peculiar to the summer months. The stags carry fine antlers, the number of branches or tines roughly indicating the age. See Antler; Deer.

RED DEER. Town of Alberta, Canada. It is an important junction on the C.P. and C.N. Rlys. It is 100 m. from Calgary, and a farming district on the Red Deer river. Coal is mined in the vicinity, there are lumber mills and elevators, and the industries include quarrying and brickmaking. Pop. 2,006.

REDDITCH. Market town and urban dist. of Worcestershire. It stands on the Arrow, 15 m. from Birmingham, with a station on the L.M.S. Rly. There are manufactures of needles, pins, hooks, motor cars, etc. Market day, Sat. Pop. 16,810.

REDESDALE. District of Northumberland. It consists of the valley of the river Rede, or Reed, and extends for about 20 m. from the Scottish border to the N. Tyne at Reedsmouth. The dale forms one of the main routes between England and Scotland.

RED FLAG. Symbol of international socialism. Red has been traditionally recognized as the colour of social revolutionary movements in modern times. The words of the socialist song The Red Flag are by Jim Connell, and have been set to several tunes.

REDHILL. Market town of Surrey, part of the borough of Reigate. It is 21 m. from London and is an important junction of the Southern Rly. The town takes its name from the red sand which was formerly dug on the common here. Fuller's earth is obtained in the

neighbourhood. The Foundling Hospital was temporarily removed to Redhill in 1926. Market day, Mon. See Reigate.

REDISTRIBUTION. Term in politics for a change in the size and number of the constituencies returning members to parliament. It is usually made to meet the changes brought about by the movements of population. In the United Kingdom the first great redistribution of seats was effected by the Reform Act of 1832, when a large number of small boroughs were deprived of the privilege of sending two members to parliament and large places were given it. Other redistributions were effected by the Reform Acts of 1867, 1884, and of 1918, when the parliamentary representation was made to correspond more closely to the populations of the various areas. See Commons, House of; Reform Acts.

REDMOND, JOHN EDWARD (1851-1918). Irish politician. Son of William Archer Redmond, he belonged to a family of landowners long associated with co. Wexford. Educated by Jesuits at Clongowes, and at Trinity College, Dublin, John began life as a clerk in the House of Commons and became a barrister, but in 1881 he turned to a political career and was returned as Nationalist M.P. for New Ross. His abilities as a speaker and his family connexions made him prominent.

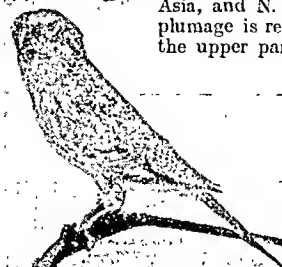


John Redmond,
Irish politician
Russell

When the split in the Nationalist party occurred in 1891, Redmond adhered to Parnell, and on his death became the leader of his followers in Parliament. In 1900, when the two sections of the Nationalist party united, he was chosen as their leader. In 1895 he was returned for N. Wexford, and from 1891 onward represented Waterford city. Redmond was leader of the party when Home Rule was granted in 1914 and the outbreak of the Great War suspended its introduction. He was a member of the Dublin convention, but before the triumph of Sinn Féin, at the general election of 1918, he died, March 6, 1918.

His brother, William Hoey Kearney Redmond (1861-1917), was returned to Parliament as M.P. for Wexford borough, later representing Fermanagh and East Clare. To the end he remained an active follower of his brother both in and out of Parliament. At the outbreak of the Great War Redmond took a commission in the Royal Irish regiment and went to the front in 1915. On June 7, 1917, he was hit while his men were attacking near Wytchachte, and died the same day.

REDPOLL (*Acanthis linaria*). British song-bird. Closely related to the linnet genus, it is found chiefly in the N. districts of Great Britain; also in Europe, Asia, and N. America. The plumage is reddish brown on the upper parts, with a deep crimson crown, pink breast, and white under parts. It feeds upon insects and seeds.



Redpoll. Crimson-headed song-bird related to the linnet
W. S. Berridge, F.Z.S.

RED RIVER. River of N. America. It rises in Minnesota, and flows S., then W., and

finally N. between Dakota and Minnesota into Manitoba, where it enters Lake Winnipeg after a course of 700 m.

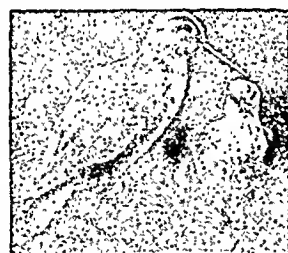
The Red River Settlement was a colony in Canada, in the valley of the Red River. It is now part of the prov. of Manitoba. It was founded in 1811-12 by the earl of Selkirk. When in 1869 the Hudson's Bay Company's rights were transferred to the Dominion of Canada, there was strong opposition among the population of this district. Under the presidency of Louis Riel (1844-85) a provisional government was set up, but the rebellion was suppressed in Aug., 1870.

RED ROT (*Fomes annosus*). Woody fungus of the order Polyporaceae. It is very destructive to coniferous trees. The spore-bearing body is evident on the trunks and exposed roots of infected trees as a thick rugged knob, of which the white portion is extensively pitted with the openings of the spore-bearing tubes.

REDRUTH. Market town and urban district of Cornwall. It is 9 m. from Truro, on the G.W.R., in the midst of a tin and copper mining district. Near is Carn Brea, a rock 749 ft. high, with British remains, and a ruined castle. Market day, Fri. Pop. 9,920.

REDS. Term popularly applied to the Bolshevik faction of the Russian revolutionaries in contradistinction to the Whites. The term originated with the Red guards set up by the Bolsheviks. See Bolshevism; Russia; Soviet.

RED SEA. Arm of the Indian Ocean between Arabia and N.E. Africa. It extends from the isthmus of Suez, 1,200 m. to the S.E., to the strait of Bab-el-Mandeb. At the N. end are two arms, the gulfs of Suez and Akabah (Aqaba). From 100 to 200 m. wide, the coasts are fringed with coral reefs and lined by sandy deserts. Since the earliest



Redshank. Seashore bird of the plover family
W. S. Berridge, F.Z.S.

REDSHANK (*Tringa totanus*). British shore bird. It belongs to the plover family. The plumage is pale brown on the upper parts, with a tail barred with black and white, and whitish under parts. The legs and feet are bright orange red, and the body is about 12 ins. long. It is moderately common on the sandy shores of the E. counties of England. Its wider range includes Europe, Asia, and Africa.



Redstart. British song-bird
W. S. Berridge, F.Z.S.

of the Continent. The cock bird has bluish-grey plumage on the upper parts, with black throat and bright bay under parts. The hen is reddish grey on the upper parts, with pale red breast and flanks and whitish throat. Its food consists of insects and grubs.

REDUCING AGENT. In chemistry, a substance which removes oxygen, chlorine, etc., from compounds. Such substances are hydrogen, carbon, aluminium, etc. The term

is used in a wider sense for any substances which bring about conversion into other substances. Some compounds themselves act as reducing agents, e.g. stannous chloride, much used in testing for salts of mercury. Sulphurous acid, ferrous sulphate, sodium thiosulphate, and alcohol have also special applications in chemistry as reducing agents.

In metallurgy reduction means the liberation of a metal from its ore.

RED-WATER TREE (*Erythrophloeum guineense*) OR **SASSY TREE.** Tall evergreen tree of the order Leguminosae, a native of W. Africa. It has small, yellow flowers in terminal clusters. When the tree is cut a red juice flows from the incision. An allied species (*E. labouchei*) is the Ah-pill of Queensland and other parts of Australia. It has close-grained, hard, red wood—the hardest produced by Australia—used for spear-heads.

REDWING (*Turdus iliacus*). British song-bird. It is related to the thrush, which it resembles. It is a winter migrant from N. Europe, and as it feeds almost exclusively on insects, it often suffers great privation in severe weather. It possesses a clear and loud voice.



Redwing. Song-bird closely related to the thrush
W. S. Berridge, F.Z.S.

REDWOOD (*Sequoia gigantea*) OR **WELLINGTONIA.** Large evergreen tree of the order Pinaceae. A native of the mountains of California, it attains a height of over 320 ft., with a trunk diameter of 35 ft. The leaves are

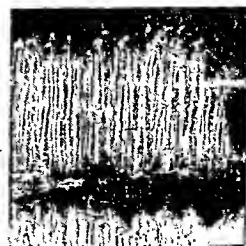


Redwood. Open cone and leaves

small and scale-like, overlapping on the branches and twigs. The male flowers are single or several together at the ends of shoots; the female flowers at the tips of other shoots may be passed over as growth buds. A specimen has been computed from its growth rings to have been over 3,000 years old.

REE. Lough or lake of the Irish Free State. Formed by the expansion of the river Shannon, it lies between the cos. of Roscommon, Longford, and Westmeath. It is 17 m. long and from 1 to 7 m. broad.

REED (*Phragmites communis*). Large perennial herb of the order Gramineae. It is a native of Europe, Asia, Africa, America, and Australia, growing on the margins of lakes, streams, and up wet sea-cliffs. It is of very erect growth, the stout, round stems attaining a height of 10 to 15 ft., with broad, flat, rigid leaves. The flowers are gathered in a large, oval, purplish plume. The reed is the predominant plant in the fens of East Anglia.



Reed. *Phragmites communis* at the margin of a pool

REED. In music, the medium by which vibrations are set up in certain organ stops (oboe, tuba, etc.), and in some orchestral instruments, oboe, clarinet, bassoon, saxophone, etc. The former are generally of metal, the latter of a kind of large grass which grows in S. Europe. A pipe enhances the tone and resonance of the organ reed. In the orchestral instruments the tube is essential, the reed being merely the excitatory medium.

In weaving the term reed is applied to a comb-like portion of the loom, consisting of vertical, parallel wires, through the dents or openings of which the warp threads are passed. The reed serves to separate the warp threads, and to beat home the weft, against which its wires are driven by the sley, or oscillator of the loom. See Loom.

REED, EDWARD TENNYSON (b. 1860). British artist. Born March 27, 1860, the son of Sir E. J. Reed, he was educated at Harrow, and became an artist in black and white. In July, 1889, he began to contribute to Punch, in 1890 joining its regular staff. His most popular drawings were the Contrasts series, 1890-91; Prehistoric Peeps, 1893; and a series of parliamentary caricatures.

REEDBUCK. Species of antelope found in Central and S. Africa. It is nearly 3 ft. high at the shoulder, and has pale brown hair on the upper parts with dingy white beneath. The horns are only about 12 ins. long, and rise nearly straight from the forehead, bending slightly forward at the tips. These antelopes were formerly very common in the Transvaal, South Africa, but have now become rather rare.



Reedbuck. Antelope formerly common in the Transvaal

REED BUNTING OR **REED SPARROW** (*Emberiza schoeniclus*). Small European bird. Common in most parts of Britain, it frequents rivers or swampy ground, where it builds its nest among the reeds or in small trees. Gregarious in habit, it feeds chiefly on water plants, insects, and small molluscs. The head and throat of the male are black; the back and wings red-brown; the under parts and a band around the neck, white.



Reed Bunting on a rush

REED MACE (*Typha-latifolia*), OR **CAT'S-TAIL**. Tall perennial herb of the order Typhaceae. A native of Europe, N. and W. Asia, N. Africa, and N. America, it grows on the margins of lakes and rivers, and has a short, creeping root-stock, from which the round erect stems rise to a height of 7 ft. The long, broad, nearly flat leaves may be 6 ft. long. The female flowers are densely packed in a purple-brown spike or "mace" around the upper part of the stem above which is the yellow "tail" of male flowers. There is a smaller and less common species (*T. angustifolia*) growing in pools and ditches. It is often, but wrongly, styled bulrush (q.v.).



Reed Mace. Leaves and flower spike

REEL. Scottish national dance. It is performed by two or more couples, and called accordingly a foursome, sixsome, or eightsome reel. The music is provided by the bagpipes or fiddle. It is a circular dance with quick, gliding movements, involving much whirling and a graceful forming of the figure eight.

REEVE (A.S. *geréfa*). Term applied to various public and private officials in England, chiefly in the Middle Ages. From Anglo-Saxon times the reeve was the steward or bailiff of an estate, who maintained order, collected dues, and supervised labour. The word and office survive in the Scottish grieve.

The term prevails in Canada, where the title reeve is given to the president of a town or village council. See Sheriff.

REEVES, JOHN SIMS (1818-1900). British tenor singer. Born at Woolwich, Sept. 26, 1818, he sang the baritone part of Rudolph in La Sonnambula at Newcastle-upon-Tyne, 1839, and joined Macready's Drury Lane company as tenor, 1841. He sang again in opera in London in 1847, and entered upon his long career as an oratorio singer in 1848, singing in such works as Judas Maccabaeus, the Messiah, and Elijah until his farewell appearance in 1891. He was also famed as a ballad singer. He died at Worthing, Oct. 25, 1900.



John Sims Reeves. British singer

REEVES, WILLIAM PEMBER (b. 1857). New Zealand politician. Born at Canterbury, New Zealand, Feb. 10, 1857, he was called to the bar of New Zealand. He turned to journalism and politics, became member of the parliament of New Zealand, 1887-96, and was minister of education, labour, and justice from 1891-96. He then became agent-general for the colony, and was its high commissioner, 1905-9. From 1908-20 he was director of the London School of Economics. He wrote *The Long White Cloud*, a History of New Zealand, 1898, and *State Experiments in Australia and New Zealand*, 1902.

REFECTORY (Lat. *refectorium*, from *reficere*, to restore). Term applied to a large hall in an abbey or kindred group of monastic buildings, where the monks or nuns took their meals. It was often a detached building, but in other cases was incorporated in the general ground-floor plan. See Abbey; Monasticism.

REFEREE. One to whom any matter or question is referred for decision. The term is applied in several connexions. In law it may mean a person known as an official referee; a medical practitioner appointed under the Workmen's Compensation Act, 1906; or a person appointed under the Coal Mines Act, 1911. In certain sports a referee is the official who controls the game or contest while it is in progress. See Arbitration; Boxing; Football.

The Referee is the title of a London Sunday newspaper devoted primarily to sport, music and the drama, which first appeared in 1877.

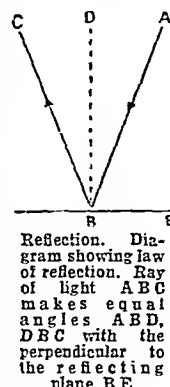
REFERENDUM (Lat. to be carried back or referred). In politics, term applied to the reference of laws passed by the legislative authority, or of original legislative proposals, to the electors for acceptance or rejection. The taking of a referendum may be either compulsory or permissive. The system is highly developed in Switzerland.

In the U.S.A. the referendum in various forms is a recognized part of the machinery of government in the states and municipalities, and is being increasingly employed for purposes of general legislation. It is also employed in Australia. The permissive form of referendum includes the origination of legislation

which, if adopted by the direct vote of the electors, must be taken up by the legislature.

REFLECTION (Lat. *reflectere*, to bend back). In physics, general phenomenon occurring in all kinds of wave motion. It is most noticeable in the case of light.

If a beam of light be reduced to a theoretical ray it is reflected in one direction, and it is said to undergo regular reflection. The point where a ray of light strikes the reflecting surface is the point of incidence. A perpendicular to the reflecting surface through this point is called the normal; the angle the incident ray makes with this normal is the angle of incidence; the angle the reflected ray makes with it is the angle of reflection. Without reflection, bodies not luminous in themselves would be invisible. See Optics; Refraction.



Reflection. Diagram showing law of reflection. Ray of light ABC makes equal angles ABD, CBD with the perpendicular to the reflecting plane BE

REFLEX ACTION. Muscular action which is the result of an afferent impulse, i.e. an impulse originating in a stimulus external to the body and conveyed by a nerve to a part of the central nervous system, which then sets in motion the muscles necessary to produce the action. If the skin be pricked an impulse is carried by the nerve which has been stimulated to a nerve centre, and from this another impulse is sent down to the appropriate muscles, causing them to withdraw the limb from the source of pain. Other instances of reflex action are the watering of the eye and the movements of the eyelids when a speck of dust enters the eye, and the watering of the mouth which occurs at the smell or sight of food. A true reflex action is independent of the will and may occur in states of unconsciousness. See Brain; Nerve.

REFORM (Lat. *re-*, again; *formare*, to form). Literally, to restore or form again. In politics, it has come to be used for the process of changing the condition of the people or the constitution by constitutional means as opposed to revolution, which uses violent and unconstitutional means.

REFORM ACTS. In British history, the name is given to the series of Acts reforming parliamentary franchise and the composition of parliament, and designed to secure an adequate expression of the popular will in government. Formally described as the Representation of the People Acts, these are the Acts of 1832, 1867, 1884-85, 1918, and 1928.

The Reform Act of 1884 made uniform the household and lodger franchise throughout the United Kingdom; the Act of 1918 gave the franchise to all men over 21 years with a six months' residence qualification, and to women over 30 years who were local government electors or the wives of such electors; the 1928 measure allowed all women over 21 years to vote on the same terms as men. See Commons, House of; Representation.

REFORMATION. Name given to the great religious revolution or reconstruction of Western Christendom in the 16th century. During the Middle Ages there had been periodic demands for reformation within the Church, but the distinctive feature of the 16th century Reformation was its insistence upon a revision of doctrine.

Martin Luther successfully led the revolt, the seeds of which had been sown in the 14th century by Wycliffe in England and later by Hus in Bohemia. The actual occasion of revolution was Luther's denunciation in 1517 of Pope Leo X's inordinate sale of

indulgences (q.v.). In theory Lutheranism or Protestantism substituted for the church authority that of the Scriptures. Its weakness consisted in the fact that the Scriptures needed interpretation. Protestantism inevitably broke up into sects, each upholding its own interpretation. Notable were the Calvinists or Huguenots and the Zwinglians.

The revolution which Luther initiated followed varying lines of development in the various countries of Europe, and in 1563 the council of Trent definitively established the limits of Roman Catholicism. By that time Spain and Italy were secured for the Papacy; England, Scotland, and Scandinavia were secured for Protestantism; in France it was still uncertain whether Catholics and Protestants would settle down to mutual toleration. The German states became Catholic or Protestant, according to the predilections of their rulers. In Poland, Bohemia, and Hungary it was still uncertain which of the creeds would conquer. The Protestants of the northern Netherlands were still under the yoke of Spain. See Huguenot; Luther, Martin; Papacy; Protestantism.

REFORMATORY SCHOOL. State-aided institution at which young offenders are lodged, and receive industrial training to equip them for useful citizenship. The Reformatory School Act of 1854 empowered criminal courts to send offenders under 16 years old to a reformatory school.

The use of these means of reclamation is regulated by the Children Act, 1908. Young persons between the ages of 12 and 16 who are convicted of any offence punishable by penal servitude or imprisonment may be committed to a certified reformatory school for not less than three nor more than five years, but in any case must not be detained beyond their 19th birthday. See Borstal.

REFRACTION. In optics, a phenomenon caused when waves of light from one medium pass into another medium. Usually when light waves traverse two media, the waves have their directions changed or refracted.

It is due to refraction that mirages exist, that the day appears longer than it is, etc. An example of the effect of refraction is seen when a walking-stick is partly submerged in water. The stick appears to be broken at the surface of the water due to the different indices of refraction of air and water. In the figure A B is a ray of light refracted at B along the line B C. B D is the plane between the two media, and E B F the perpendicular at that plane. The refracted ray makes with the normal an angle whose trigonometrical sine bears a constant ratio, for any two particular media to the sine of the angle the incident ray makes with the normal. See Iceland Spar; Light; Optics; Polarisation.

The refractometer is an instrument for determining the refractive index of solids, liquids, or gases.

REFRIGERATION. Application of cold for the preservation of food. The principle is old, and cold caverns, cellars and, where

available snow, have always been used for the purpose. The freezing mixture of ice and salt was known in the 17th century. In 1834 Jacob Perkins invented a machine which included in simple form the principles of the modern refrigerator: the evaporator, the compressor, the condenser, and the refrigerator, and since that time many types have been invented.

The principal kinds are: (1) The air machine, in which the cooling process is accomplished by the alternate compression and expansion of air. (2) The absorption machine, based on the alternate vaporisation and condensation of some substance. While the condensed vapour is re-evaporating it takes up heat from the bodies round it, thus accomplishing refrigeration. A common type is that in which ammonia dissolved in water is the medium. (3) The vapour compression machine is one which acts by the mechanical compression of a condensable vapour. Any liquid which can be alternately liquefied and vaporised serves, and the substances used are water, sulphuric ether, sulphurous acid, ammoniac, and carbonic acid the last three being the favourite media.

The introduction of refrigerating plant has developed the Australian, New Zealand, and Argentine frozen and chilled meat trade, and has facilitated the transport of butter, cheese, fruit, fish, and other perishable products. It has prevented enormous losses in ordinary stores and shops.

REGALIA (Lat. regalis, royal). Emblems belonging to the sovereign as such. The regalia of the sovereign of Great Britain and Ireland include S. Edward's crown, the imperial crown, S. Edward's staff and sceptre, the royal orb, a pair of bracelets or armillae, a ring, a mantle and other garments, a pair of spurs, the ampuila or golden eagle—a receptacle for the anointing oil—and a spoon for the oil. Others are the five swords, two of state, one of temporal justice, one of spiritual justice, and the curtana. There are also crowns and staves for the queen consort.

Regensburg. German name for the city of Bavaria also known as Ratisbon (q.v.).

REGENT (from Lat. regere, to rule). One who rules temporarily for a sovereign. A regency is necessitated by the minority, mental or physical incapacity, or absence of the sovereign, or by the infancy of the heir to the throne. Sometimes a council acts as regent. The most famous regent of Scotland was James Stuart, earl of Murray or Moray.

REGENT'S CANAL. Canal within the co. of London. It was constructed in 1812-20. The E. end is opposite the Surrey Commercial Docks; it goes through the N. of Regent's

Park to join the Grand Junction Canal in Paddington. In 1928 it became part of the canal system known as the Grand Union.

REGENT'S PARK. A London park. Mostly in the bor. of Marylebone and partly in that of St. Pancras, between St. John's Wood and Camden Town it contains the

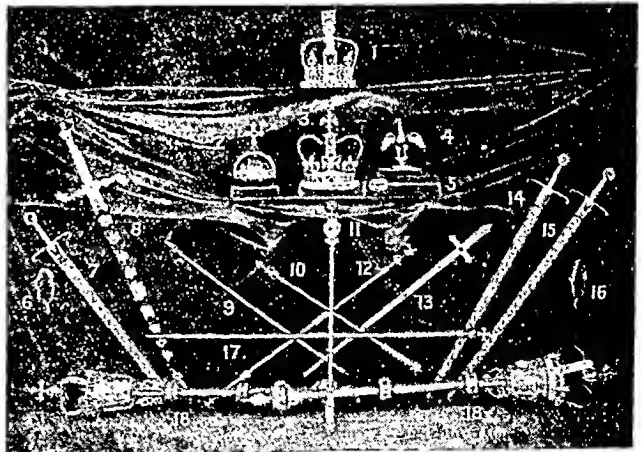


Regent Street. The newly built Quadrant, looking towards Piccadilly Circus

gardens of the Zoological, Botanic, and Topophilite societies. There is an artificial lake and the Regent's Park Canal skirts the N. side. On the W. side are Regent's Park College and S. Dunstan's Hostel for Blind Soldiers. Deriving its name from the prince regent, afterwards George IV, it was laid out in 1812, and was opened to the public in 1838. In 1930 it was announced that the Botanical Gardens were to be merged into the rest of the park.

REGENT STREET. London thoroughfare. It runs from Waterloo Place, Pall Mall, and, passing Piccadilly (formerly Regent) Circus and Oxford Circus, finishes at Langham Place. One of London's great shopping centres, it was made, in 1813-20, from designs by John Nash to connect Carlton House (q.v.) with Regent's Park. After the Great War, as the leases which were crown property fell in, much of Regent Street was rebuilt, and it was opened by King George V in June, 1927.

REGGIO EMILIA. City of Italy. The ancient Regium Lepidi, it stands on an affluent of the Po, 38 m. by rly. N.W. of Bologna. The cathedral was founded in the 12th century. The church of Madonna della Ghiara is a beautiful Renaissance domed structure dating from 1597. There are Renaissance palaces, and the house where Ariosto



Regalia of the British Sovereign. 1. Imperial crown. 2. Orb. 3. S. Edward's crown. 4. Ampulla. 5. Anointing spoon. 6. Spur. 7. Curtana. 8. Sword of state. 9. Queen's sceptre, with dove. 10. Queen consort's sceptre. 11. Imperial sceptre, with cross. 12. King's sceptre, with dove. 13. Sword of offering. 14. Sword of temporal justice. 15. Sword of spiritual justice. 16. Spur. 17. S. Edward's staff. 18. Maces

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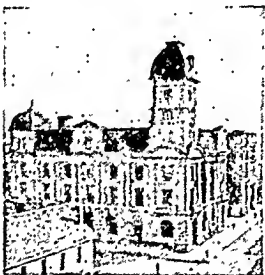
was born. The city was founded in 187 B.C. by M. Aem. Lepidus. In medieval times it was a republic, passing under the control of the Este family in 1409. Pop. 89,611.

REGICIDE (Lat. rex, king; eadere, to kill). Literally, one who kills a king. It is specially used, however, for those who were responsible for the death of Charles I in 1649. Of the 150 members of the court of justice that tried the king, 67 voted for his execution and 59 signed the death warrant, and these, with the officials and executioners, were the regicides. After the restoration of Charles II, 29 of them were sentenced to death, but the sentence was only carried out in 10 cases, the others being imprisoned for life.

REGILLUS. In ancient geography, a small lake in Latium, E. of Rome. It was famous for the defeat of the Latins by the Romans, 496 B.C. The story of the fight is told in Macaulay's *Lays of Ancient Rome*.

REGIMENT (Lat. regere, to rule). Military term for a body of soldiers. In the British army the infantry is grouped into regiments, most of which have a name and number. It consists of a number of battalions, each commanded by a lieutenant-colonel. The cavalry is also organized in regiments. The artillery and engineers each form officially a single regiment. The word was first used in the 16th century, when each unit raised was called a regiment. With the foundation of a regular army came the practice of numbering the regiments. See *Army*; *Battalion*; *Devonshire Regiment*, etc.

REGINA. Capital of Saskatchewan, Canada. It is in the S. of the province, in the centre of the wheat-growing area, 360 m. from Winnipeg, on the C.P. and C.N. Rlys. It is the western headquarters of the Royal Canadian Mounted Police. Regina's industries are distributing and manufacturing, including the making of agricultural implements, motor cars, bricks, and machinery, as well as tanning and milling. Pop. 37,329.



Regina. Dominion Government buildings, Customs and Post Office

REGISTER. Division of the human voice. It arises from the nature of the vocal cords, and evincing a difference of tone quality. As the tension of the cords cannot be carried beyond a certain point, the upward range is continued by means of a change of mechanism. Different teachers have different names for these registers, the most common being chest, head, and falsetto. The aim of the teacher is to blend the registers so that the transition from one to another is effected without an abrupt change of quality.

REGISTRATION. Act or fact of registering. The word is used in several connexions. In Scots law it means the transcribing of documents in a public register, in order that an exact copy may be preserved for use in the event of the destruction of the original.

The registration of births, marriages, and deaths was made compulsory in England and Wales in 1836, and came into force in 1837. Before this time the only official source of information on this subject was the parish register. The registration of electors is a preliminary to the exercise of the franchise.

During the Great War a registration card, or identification card, was issued in Great Britain under the National Registration Act,

1915, to all males and females between the ages of 15 and 65.

Letters containing money can be registered at any post office for a small fee, and luggage can be registered with railway companies. The carrying authorities then assume responsibility for loss up to a certain amount.

REGNAULT, HENRI VICTOR (1810-78). French physicist. Born at Aix-la-Chapelle, July 21, 1810, in 1840 he was appointed professor of chemistry at the École Polytechnique, Paris. He became professor of physics at the Collège de France, 1841, and director of the Sèvres porcelain factory, 1854. He died Jan. 19, 1878.

Regnault made a reputation for his measurements of many physical constants, particularly those concerned with specific heat. He also carried out a series of experiments on the densities, pressures, and volumes of gases which had an important effect on the kinetic theory of gases, and did valuable work by his researches on the haloid and other derivatives of unsaturated hydro-carbons.

RÉGNIER, HENRI FRANÇOIS JOSEPH DE (b. 1864). French poet and novelist. Born at Honfleur, Calvados, Dec. 28, 1864, he came to occupy a leading position among Mallarmé, Verlaine, and other so-called Symbolists. His many volumes of poetry included *Épisodes*, 1888; *Aréthuse*, 1895; and *La Cité des Eaux*, 1903. Among his works in prose fiction are *Le Trèfle Noir*, 1893; *La Canne de Jaspe*, 1897; *Le Passé Vivant*, 1905; and *La Peur de l'Amour*, 1906.

REGULUS, MARCUS ATILIVS. Roman general. He became consul for the second time in 256 B.C., and was at first successful in an expedition against the Carthaginians, but was finally defeated and taken prisoner. According to the story, Regulus was sent by the Carthaginians in 250 B.C. to Rome, under parole to return if the peace which the Carthaginians desired was not arranged. Regulus advised the Romans against that policy, and returned to Carthage, where he was brutally put to death.

REHAN, ADA (1860-1916). American actress. Born in Limerick, April 22, 1860, she made her first stage appearance at Newark, New Jersey, in 1874, and showed her versatility as a comedy actress in over 200 parts in Augustin Daly's company, 1879-99. Her fame rested chiefly on her Shakespearean renderings, notably her *Rosalind*, *Portia*, *Cordelia*, *Desdemona*, and *Mistress Ford*. She appeared first in London in 1884, returning in 1886, 1888, 1890, and 1893-95. Retiring in 1906, she died Jan. 6, 1916.

REHOBOTH. Jewish king. Son and successor of Solomon, his treatment of the tribes led to a revolt of all except Judah and Benjamin, and a division of the kingdom. During his reign Judah was conquered by Shishak, founder of the XXIInd Egyptian dynasty (1 Kings 12 and 14; 2 Chron. 12).

REHOBOTH. Town and dist. of S.W. Africa. The town is 60 m. S. of Windhoek, at the head of the Great Fish River Valley.

The dist. has a coloured pop. of 9,300, about 4,000 of whom belong to the Bastards, a tribe of mixed descent. In 1918 they petitioned to be taken under the protection of Great Britain.

REICHSTADT, NAPOLEON FRANCIS JOSEPH CHARLES, DUKE OF (1811-32). Son of Napoleon I by the emperor's second marriage, he was born in Paris, March 20, 1811, and was created king of Rome. On the fall of the empire in 1814, Napoleon abdicated in his favour, but the empress Marie Louise

hastened with her child to Vienna, and no effort was made to establish his right. In 1818 the emperor of Austria made him duke of Reichstadt. He died July 22, 1832. Rostand's play *L'Aiglon*, 1900 is written about him.

REICHSTAG. Literally, the day of the empire, a word often translated into English as diet. The Reichstag met whenever summoned by the emperor until 1663; from then until 1866 it met regularly at Ratisbon.

When in 1871 the German Empire was founded, the name was given to one of the two houses set up in Berlin. It was composed of 397 members elected by a popular franchise for five years. The name and constitution of the Reichstag were retained after the changes of 1918. After the election of 1930 there were 575 members. See *Diet*. Empire, Holy Roman.

REID, SIR GEORGE (1841-1913). Scottish portrait painter. Born at Aberdeen, Oct. 31, 1841, he studied under Mollinger and Israels. He painted genre in the Dutch manner, but is best known by his realistic portraiture. He was elected A.R.S.A., 1870, R.S.A. in 1878, and P.R.S.A. in 1891, when he was also knighted. He died Feb. 9, 1913.

REID, SIR GEORGE (1845-1918). Australian politician. Born in Renfrewshire, Feb. 25, 1845, he went with his parents to Sydney, and in 1864 entered the civil service there. In 1880 he was elected to the legislature of New South Wales, and in 1883 he became a minister. From 1894-99 he was prime minister, and in 1901 he became leader of the opposition in the new Parliament of the Commonwealth. In 1904 he was premier for nearly a year. In 1908 Reid left politics, and from 1909-14 was high commissioner for Australia in London. In 1916 he was chosen M.P. for St. George's, Hanover Square, and he died Feb. 12, 1918.



Sir George Reid, Australian statesman
Russell

REID, THOMAS MAYNE (1818-83). British novelist. Born at Ballyroney, co. Down, April 4, 1818, he emigrated to America in 1839, and served in the U.S. army in the Mexican War of 1847. His experiences are embodied in a series of stirring novels of adventure, among which the best known are *The Rifle Rangers*, 1850; *The Scalp Hunters*, 1851; *Adrift in the Forest*, 1865; and *The Headless Ho seman*, 1866. Mayne Reid returned to Europe in 1849. He died Oct. 22, 1883.

REID, WHITELOW (1837-1912). American journalist, author, and diplomat. Born at Xenia, Ohio, Oct. 27, 1837, in 1869 he entered the office of *The New York Tribune*, of which he afterwards became editor and chief owner. He was minister to France, 1889-92. Twice special envoy to England, at the Diamond Jubilee of Queen Victoria, 1897, and the Coronation of Edward VII, 1902, he was appointed ambassador to Great Britain in 1905. He died in London, Dec. 15, 1912.

REIGATE. Borough and market town of Surrey. It is 23 m. from London, on the Southern Rly. The church of S. Mary Magdalen is mainly Perpendicular, but has fine transitional Norman arcades in the nave. Lord Howard of Effingham is buried here. There are numerous caves beneath the town, which has an agricultural trade. The old windmill on the heath had been used as a church for 50 years. In 1928 it was renovated and reopened as such. The borough includes the adjoining town of Redhill (q.v.). Market day, Mon. Pop. 28,915.

REIGN OF TERROR. Term applied to the period in the French Revolution during which supreme power was in the hands of the



Duke of Reichstadt, Son of Napoleon I

Committee of Public Safety formed by the Jacobins, July, 1793. In addition to supporters of the old regime, hundreds of the revolutionaries themselves perished on the scaffold as a result of the general atmosphere of suspicious mistrust. See French Revolution; Jacobins; Robespierre.

REIMS. Town of France. It lies on the right bank of the Vesle, 99½ m. by rly. (via Soissons) E.N.E. of Paris. It is an important rly. centre, and is linked by canal with the Aisne and Marne. It is the seat of an archbishop and a centre of the champagne industry.

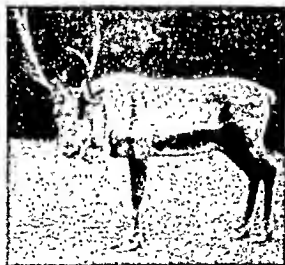
The cathedral is one of the noblest Gothic buildings of France. The choir was completed 1241, and the W façade with its three portals with over 500 statues, also in the 13th century. The whole was completed in 1428, but the spires were destroyed by fire in 1481. The rose window over the W portals, the beautifully carved N. portal, and the twin W. towers, 267 ft., are among famous features of the exterior. The bombardments of 1914-18 severely damaged the building.

The archiepiscopal palace (15th-17th century, with a 13th century chapel) was destroyed by fire, 1914. The fine 17th century town hall was gutted in 1917. The abbey church of S. Remi, 12th-15th century, and founded in the 6th century, was severely damaged, 1918. The Roman Porte de Mars, 4th century, still stands, but the Hôtel Dieu was destroyed, 1916, and the 13th century Maison des Musiciens demolished by shellfire, though its famous statues were preserved.

From 987 onwards Reims was the scene of the coronation of all the French kings save six. It was bombarded by the Germans throughout the Great War. Pop. 100,998.

REINCARNATION. Term meaning the assumption of human nature a second time or more than once. It is used to describe the process involved in the theory known as metempsychosis or the transmigration of souls, which maintains that all personalities or types of being (including animals) enter into life upon the plane of earth not once but many times, and assume different forms at every reappearance. The theory was held in India and discussed by the Greek philosophers, notably Pythagoras and Plato. See Psychological Research; Transmigration.

REINDEER (*Cervus tarandus*). Species of deer found in N. Europe, Siberia, Newfoundland and Canada, and the United States.

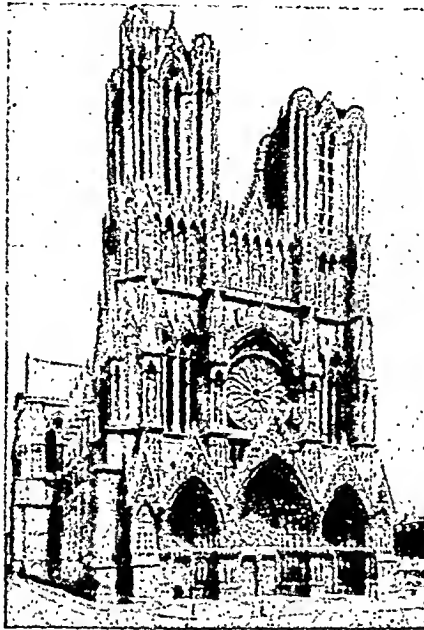


Reindeer. Male of the North European species of deer
W. S. Berridge, F.Z.S.

It is the only deer that has been successfully domesticated. Both sexes bear antlers. The feet are remarkable for their breadth and great spread, an adaptation for travelling on snow in winter and boggy land

in summer. In colour it is usually brown, with white on the neck, under side, and inner flanks. In height the reindeer ranges from 44 to 48 ins. at the shoulder in Europe but has been known to attain 5 ft. in Canada. The European reindeer occurs from Scandinavia to E. Siberia, but in many districts it is now very rare in the wild state. It is the beast of burden in Lapland and in parts of Norway and Siberia. In the wild state it spends the summer in the grassy valleys, and moves in winter to the mountains, where it lives on lichens and moss. The American reindeer is known as the caribou (q.v.).

REINDEER. Lake and river of Canada mainly in Saskatchewan. The lake is in the N.E. of the prov. Its outflow is at the S end by the Reindeer river, which flows almost due S. to join the Churchill.



Reims. West front of the cathedral before it was damaged during the Great War. It is considered the most beautiful work of the Middle Ages

REINHARDT, MAX (b. 1873). Austrian theatrical producer. Born at Baden, near Vienna, Sept. 9, 1873, he made his first stage appearance in Berlin, 1894, where he founded a cabaret theatre, the Schall und Rauch, and the Kleines Theater, 1902. As manager of these, and of the Neues Theater from 1903, and the Deutsches Theater and Kammerpiel from 1905, he earned a great reputation for his brilliantly conceived productions of serious drama. In England he was best known as producer of *Sumurun*, 1911, and of *The Miracle*, played at Olympia, London, 1911-12, and of *Oedipus Rex*, 1912. Consult *The Theatre* of Reinhardt, H. Carter, 1914.



Max Reinhardt, Theatrical producer

Reins. Controlling or guiding straps or cords attached to the bit of a ridden or driven horse. See Bridle; Driving.

REITH, SIR JOHN CHARLES WALSHAM (b. 1889). British engineer. A son of Rev. George Reith, he was educated in Glasgow and at Gresham's School, Holt. Trained as an engineer, he served with the Royal Engineers in France in 1914-15 and was afterwards employed by the Admiralty and the Ministry of Munitions. In 1919 he became general manager of W. Beardmore & Co., Ltd., and in 1920 of the British Broadcasting Co. In 1927, when he was knighted, his position was that of director of the Broadcasting Corporation.



Sir John Reith, British engineer

REJANE, GABRIELLE CHARLOTTE (1857-1920). French actress. Born in Paris, June 6, 1857, her real name being Charlotte Réju, she made her début at the Odéon, 1875. She was an actress of great versatility and disciplined technique, and made a memorable

appearance as Catherine in *Madame Sans-Gêne* at the Gaiety Theatre, London, 1894, also in the same part, her most popular, in New York, 1895. The *Théâtre Réjane*, Paris, was opened in 1905. She died June 14, 1920.

REJUVENATION. The theory that a man's life can be prolonged by replacing the worn-out interstitial glands with young, healthy glands obtained from the higher monkeys. It was first advanced in 1910 by Dr. Serge Voronoff (q.v.).

RELAPSING FEVER. Acute fever caused by infection by a spirochaete. Different forms of the parasite occur in Europe, America, Asia, and Africa, and cause differences in the symptoms, but all are characterized by recurring bouts of fever.

RELATIVITY. Mathematical principle formulated by A. Einstein in 1905. It is the principle that the velocity of light is constant for all observers, whatever the relative movements of the systems of reference (the earth, for example) to which they are attached, and that the movements of these systems are compensated for the observers by changes in what in mechanics are termed the space and time co-ordinates.

In our ordinary life we regard distances and intervals as invariable, and unaffected by the particular objects or events which occupy them. From ancient times this principle seemed to mathematicians to suffer from a serious theoretical defect, viz., it was not a direct means of comparing distance with distance and interval with interval, and there was no way of knowing, with the certainty mathematics requires, that measuring rod and clock do not alter shape when they are moved.

In 1675, Roemer, a Danish astronomer, postulated the hypothesis that light signals do not arrive at the instant of emission, but occupy a definite interval of time proportional to their distance in space. He calculated the velocity of light with an extraordinary accuracy, and the discovery led Newton to postulate absolute space and time. With the rise of electro-magnetic science in the 19th century, the velocity of light became of prime importance. Attempts were made to measure the effect on that velocity of movements of the system in which the light had its source. The Michelson-Morley experiment (1886) left no doubt that the effect which was being looked for did not exist at all. The experiment was designed to show the movement of the earth in space and its direction, by means of the change which the velocity of this movement ought to have produced in the velocity of the light projected from the instrument and reflected back to it from a fixed mirror. Michelson repeated the experiment in 1928, again with negative results.

It was suggested by Fitzgerald that when matter moves through the ether the latter, being fixed and all pervasive, may bring about a contraction of the matter in the direction of the movement, and this would account for the experiment being negative. About the same time Lorentz suggested that this contraction effect might be a character of the electrons which constitute matter.

Einstein ignored all theories and based his mathematics purely on the experiments. He accepted the results without explaining them, and formulated the principle of relativity. As all our observations of physical phenomena are actually dependent on light signals it must



Mme. Réjane as Catherine in *Madame Sans-Gêne*

follow that the velocity of light is constant for all observers. The new principle demonstrated the impossibility of assigning absolute values to the time of an event, or to the place of its occurrence, since these depended on its relations to other events, and these relations were different for all observers attached to moving systems of reference, such as the earth.

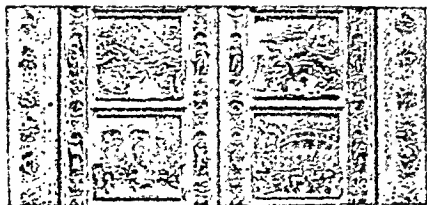
In 1908 Minkowski produced a construction of the universe conceived as a four-dimensional continuum, the fourth dimension being time. In the four-dimensional world there is no simultaneity. Any two events which for one observer occur at one instant may for every other observer be separated by an interval. Also there is no absolute place of anything. Any two events which for one observer happen in one place, for all other observers may be in different places.

In 1915 Einstein announced a new principle for the calculation of the phenomena of gravitation, and this was found to give (allowing for a practically negligible margin of error) the exact correction needed to reconcile the discrepancy in Mercury's orbit. This had hitherto defied all attempts to explain it conformably with Newton's law.

It was found that if the new general principle of relativity were adopted, Newton's law would have to be as entirely set aside and replaced as his absolute space and time had been by the special principle. Working out the gravitational field of the sun by the new principle, Einstein found that it showed that if the stars could be seen near the sun, i.e. in its gravitational field, they would be found to be displaced proportionately to their distance from the centre of the sun. The total eclipse of the sun on May 29, 1919, offered an opportunity of testing the matter, and Einstein's predictions were fulfilled.

The new principle rejects the notion of force and the idea of any action, direct or indirect, of one body on another. It declares inertia and gravitation to be one and the same phenomenon, either being the equivalent of the other, and it interprets the phenomena of gravitation, not by the properties of the masses, but by the geometrical structure of the space in which they are moving. This space in the neighbourhood of rotating masses of matter acquires the special geometrical character which constitutes a gravitational field. See Ether; Light; Matter.

RELIC (Lat. reliquiae, remains). In a religious sense, the body or part of a body of a saint or martyr, or some article associated with a saint or martyr, preserved as an object of devotion or veneration. Generally the word implies that which is left of an object after the loss or decay of its other parts, or a souvenir of one who is dead. Examples of religious relics are the remains of holy men preserved in churches or shrines; fragments supposed to have belonged to the true Cross (q.v.), and the Holy Coat (q.v.) of Treves.



Relievo in bronze. Part of the door of the Baptistery, Florence, by L. Ghiberti

RELIEVO. Italian term for the sculpture in relief used in the decoration with figure compositions of walls and other flat surfaces. The Greeks and Romans practised it in its simpler forms. Donatello's John Baptist on the font at Siena, completed in 1427, shows the treatment in a modified form; but Ghiberti's gates for the Baptistery at Florence

are the first conspicuous instance of its employment. See Florence.

RELIGION (Lat. religare, to bind). All that deals with the relations between God and man.

The following classification of religions has been suggested by a leading authority: (1) Religions of the natural life and of an animistic force, vaguely many and indefinitely one, whereby man seeks outward security through a power as personal as his own dim sense of his own personality in the communistic stage at which he lives permits.

(2) Religions of anthropomorphism and external morality. (3) Religions of ecstasy and asceticism and acosmic morality, which either do not depend on gods, or whose gods are pantheistic and identified with the order of things, because, seeking to solve the problem of the world by escaping from it, they do not depend for help on any power that rules the world, e.g. Buddhism.

(4) Religions of monotheistic tendency and ethical dualism, which, having realized the organization of good and evil in the world, seek to secure a higher life by faith that the power of light must prevail over the powers of darkness. The typical example is Zoroastrianism, but the later Greek religion also belonged to it.

(5) Religions of true monotheism and reconciliation, which secure the spiritual life by making it the one eternal purpose, and by faith in the one God who works through all things for it. To it belong especially prophetic Judaism and Christianity.

The following table gives an idea of the relative strengths of the various religions. The figures cannot be more than approximate, as there must be certain overlapping.

Heathen	..	..	..	..	..	125,500,000
Jews	..	..	..	..	..	16,000,000
Hindus	..	..	..	..	..	230,000,000
Confucianists and Taoists	..	..	..	..	..	350,500,000
Buddhists	..	..	..	..	..	150,000,000
Shintoists	..	..	..	..	..	25,000,000
						525,500,000
Christians:						
Roman Catholic	..	..	..	..	..	340,000,000
Greek Catholic	..	..	..	..	..	150,000,000
Protestants	..	..	..	..	..	210,000,000
						700,000,000
Mahomedans	..	..	..	..	..	209,000,000
Unclassified	..	..	..	..	..	51,000,000
						1,867,000,000

RELUCTANCE. Resistance offered by a substance to the magnetic flux in a magnetic circuit. The flux is equal to the magnetomotive-force divided by the reluctance. Reluctivity or specific reluctance is the reciprocal of magnetic permeability (q.v.).

REMAND (Lat. remandare, to order back). In law, the adjournment by a criminal court of the hearing of a charge against an accused person. The prisoner may be either retained in custody or admitted to bail. A remand in custody, if by verbal order, must not be for more than three days; if on a written warrant, it should not exceed eight clear days. See Trial.

REMARQUE, ERICH MARIA (b. 1898). German writer. Member of a French family long settled in the Rhineland, he served on the German side in the Great War. After the war he became a teacher, journalist, etc., and in 1929 published *All Quiet on the Western Front*, a book embodying his war experiences, which had an enormous sale throughout the world.

REMBRANDT (1606-69). Dutch painter, whose full name was Rembrandt Harmensz van Ryn. Rembrandt was born at Leiden, July 15, 1606. He studied at Amsterdam and Leiden, and finally settled in Amsterdam in 1631. His fame was firmly established by the Anatomy Lesson, now at The Hague, which he painted in 1632. During the following years his commissions and pupils increased in numbers, and among the productions of these prosperous years were *The Bride of Tobias*

(Hermitage, Leningrad), 1636; *The Angel leaving Tobias* (Louvre), 1637; *The Marriage of Samson* (Dresden), 1638; and the self-



Rembrandt. Self-portrait of the Dutch painter

portraits now in the National Gallery, London, 1640. In 1640 came *The Canal*, first of Rembrandt's landscape etchings from nature, *The Windmill* etching following in 1641. After the completion in 1642 of the great painting generally called *The Night Watch* (Amsterdam), Rembrandt's fortunes seemed to be crossed. But these last years of misfortune saw some of his finest works, among them *The Adoration of the Magi* (Buckingham Palace), 1657; a fine self-portrait (Munich), 1658; and the *Syndics of the Guild of Drapers* (Amsterdam), 1661. Rembrandt died in poverty at Amsterdam, Oct. 8, 1669.

REMINGTON, PHILIP (1816-89). American manufacturer and inventor. Born at Litchfield, New York, Oct. 31, 1816, he became one of the controlling heads of his father's small-arms factory. He was the inventor of the breech-loading rifle which bears his name, and in 1873 was one of the first to construct a practical typewriter. He died April 4, 1889.

Remus. Twin brother of Romulus, the legendary founder of Rome. See Romulus.

RENAISSANCE (Fr. from re, again; naître, to be born). In Jebb's phrase, "the whole process of transition in Europe from the medieval to the modern order." In a restricted sense the Renaissance means the revived study, in the new secular as contrasted with the old monkish spirit, of the literature of classical antiquity.

This revival of learning, as it is also called, was itself a chief agent in the emancipation of the mind of man from the trammels of effete dogmatism, and in the creation of a fresh intellectual atmosphere and of fresh ideals of life. It may be said to have begun in Italy with Petrarch and Boccaccio. But the real movement dates from the time when Manuel Chrysoloras of Constantinople lectured on Greek at Florence, 1396, and in other cities. Henceforth classical studies were pursued by the new generation of humanists with growing enthusiasm, to which a further impetus was given when, on the capture of Constantinople by the Turks, 1453, many Greek scholars sought asylum in Italy.

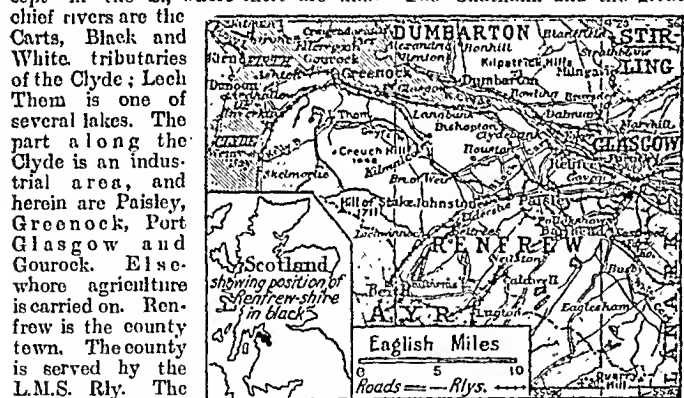
Meanwhile the movement thus initiated by Italy spread to other countries, especially to France and Germany. In England, too, the revival of learning was the product of Italian influence.

RENAISSANCE ARCHITECTURE. This describes the style of building practised in Italy and Western Europe during the age of the revival of classical learning. Sometimes the word is restricted to the earlier phases of the process. In modern England an alternative for the term Renaissance architecture was Italian style, but further study has brought a knowledge of French, German, Spanish, and other Renaissance styles. The English Renaissance style now applies sometimes to the earlier works only; sometimes to the later and more scholarly ones as well. The phases are distinguished also by separate names, as Elizabethan, Jacobean, Stuart, Georgian, etc. As examples of the Italian Renaissance style in England, St. Paul's Cathedral and Somerset House may be mentioned as known to everyone.

RENAN, JOSEPH ERNEST (1823-92). French philosopher. Born at Tréguier, Brittany, Feb. 27, 1823, and educated for the priesthood, he left the seminary of S. Sulpice in 1846. For a time he was an assistant master. In 1850 he secured an appointment at the Bibliothèque Nationale, Paris, and visited Italy. One of a commission sent by the French Government in 1860 to Phœnicia and Palestine, his appointment, 1861, to the professorship of Hebrew at the Collège de France, owing to clerical opposition, was not ratified until 1870. In the meantime he lost by death his sister, Henriette, whose devotion he commemorated in *Ma Soeur Henriette*, 1895 (Eng. trans. Brother and Sister, 1896), and published his *Vie de Jésus*, 1863. This, which formed the initial volume of his *Histoire des Origines du Christianisme*, was written mainly during his visit to Syria. He died Oct. 2, 1892.

RENFREW. Burgh and the county town of Renfrewshire, Scotland. It stands on the left bank of the Clyde, 5 m. W. of Glasgow, on the L.M.S. Rly. Castlehill marks the site of the castle of the Stewarts. Shipbuilding is the staple industry, and engineering, weaving and dyeing are engaged in. Pop. 14,129.

RENFREWSHIRE. County of Scotland. In the S.W. of the country, it is bounded N. and W. by the Clyde, only a small portion lying N. of that river. Its area is 240 sq. m. The surface is generally undulating except in the S., where there are hills. The chief rivers are the Carls, Black and White tributaries of the Clyde; Lech. There is one of several lakes. The part along the Clyde is an industrial area, and herein are Paisley, Greenock, Port Glasgow and Gourock. Elsewhere agriculture is carried on. Renfrew is the county town. The county is served by the L.M.S. Rly. The prince of Wales hears the tit of baron of Renfrew.



Renfrewshire. Map of the Scottish county south of the Clyde

Pop. 292,200.

RENI, GUINO (1575-1642). Italian painter. Born at Calvenzano, Nov. 4, 1575, he studied under Denis Calvaert and with the Carracci. Influenced by Caravaggio, for some years he followed his naturalistic style; his later work, however, is more voluptuous. Many years of his life were passed in Rome, where Pope Paul V befriended him, but his masterpiece, a *Nativity*, is in the church of S. Martino, Naples, and he ended his career at Bologna. He died Aug. 18, 1642.

Guido is amply represented in English and other European galleries.

RENMARK. River port of South Australia, on the Murray. It is 74 m. E. of Morgan. It is a prosperous centre of co-operative fruit growing by irrigation, and was one of the earliest irrigation colonies. Pop. 4,800.

RENNES. Town of France, capital of the dept. of Ille-et-Vilaine, and of the former province of Brittany. It lies at the confluence of

the rivers Ille and Vilaine, 232 m. by rly. W.S.W. of Paris, and is a rly. junction. It is the seat of an archbishop, and has a university. The industries include tanning, and there is a trade in agricultural produce and livestock. The cathedral, an old foundation, was begun in 1787 and completed in 1844. The church, Notre Dame-en-S. Mélaire, dates from the 13th century. The palais de justice, built 1618-54, was the meeting place of the old parlement of Brittany. The second Dreyfus trial took place here in 1899. Pop. 83,418.

RENNET. Extract from the lining of the fourth or rennet stomach of the calf. It is used for curdling milk in cheese-making. The salted linings used in the preparation of rennet are known as vells. The curdling action is due to the ferment rennin, which causes the casein to coagulate and entangle the fat. Rennet also contains another ferment, pepsin, that plays a part in the ripening of cheese. See Cheese.

RENNIE, JOHN (1761-1821). British engineer. Born at Phantassie, Haddingtonshire, June 7, 1761, in 1784 he obtained a position with James Watt, and the same year designed for him a steam engine. In 1791 he began as an engineer at Blackfriars, London, on his own account, carried out the construction of several canals, and was responsible for the building or improvement of many docks and harbours, including the London docks, Hull docks, and the dockyards at Sheerness and Chatham, and the great



John Rennie, British engineer

breakwater at Plymouth. Waterloo, London, Southwark, and Kelso Bridges were also all products of Rennie's genius. He died in London, Oct. 4, 1821.

His eldest son, George (1791-1866), extended the operations of the firm, while his second son, Sir John Rennie (1794-1874), constructed works at Woolwich, Sheerness, and Plymouth.

RENOIR, PIERRE AUGUSTE (1841-1919). French painter. Born at Limoges, Feb. 25, 1841, he settled in Paris in 1859, and studied under Gleyre, becoming associated with the Impressionist group. His principal subjects were from contemporary Paris life, but he also painted landscapes, flower studies, and some Algerian scenes. His art is distinguished by movement and gaiety of colour. He died Dec. 3, 1919.

RENOVN. British battle-cruiser. Launched at Govan in 1916, she displaces 26,500 tons, is 750 ft. in length, with 112,000 h.p., giving a speed of 32 knots. She carries six 15-in., fifteen 4-in., and two 3-in. guns. The Renown conveyed the prince of Wales on his Canadian tour in 1919 and other empire tours. She also conveyed the duke and duchess of York to Australia in 1927.

RENT (Lat. reddere, to pay). Money or other payment made for the use of land and also for the use of houses and other buildings.

The older economists regarded rent as the share of production that falls to the owner of the land, as opposed to interest and wages that fall to the capitalist and the worker respectively. Of these Ricardo put forward the theory of rent associated with his name. By

this, rent is the amount produced by land in excess of that produced by land on what is called the margin of cultivation.

Although quite sound in theory, Ricardo's idea is subject to certain qualifications. The intermixture of land and capital is so close, especially in the older countries, that rent tends to approximate more and more to interest on money invested. There are, however, differences between rent and other forms of income, due to those between land and other forms of capital, and on these are based proposals for the special taxation of land values.

In the popular sense rent is the payment made for the occupation of factories, houses, land, etc., and is therefore only a form of interest on capital. It is regarded as due in England and Wales on the four quarter days, but the occupiers of the bulk of the houses in the country pay weekly. Landlords of small houses usually pay the rates thereon and include this amount in the weekly rent.

RENT RESTRICTION. Method adopted during the Great War and afterwards in the United Kingdom to protect tenants from an increase of rent and to safeguard their tenure. This was done by a series of Acts of Parliament beginning in 1915, when it was provided that tenants of dwelling houses in respect of which the annual rent or the rateable value, calculated in August, 1914, did not exceed £35 in the metropolitan police district, £30 in Scotland, and £26 elsewhere, should have the following privileges: (1) the rent or mortgage interest could not be raised except to meet the cost of structural alterations, or a rise in rates when the landlord pays them; (2) no tenant could be turned out so long as he paid the rent and performed the other duties of his tenancy, and was not guilty of committing waste or of conduct which was a nuisance, unless the landlord reasonably required the house for the occupation of himself or one of his employees. In May, 1918, another Act was passed. This deprived those who had bought dwelling houses within the operation of the 1915 Act since Sept. 30, 1917, of the right of securing possession.

In 1920 a further measure raised the values of dwelling houses coming within its operation to £105, £90, and £78 respectively. The main points were:

Landlords of the houses or flats coming under the Act were able to raise the rent over the standard rent, i.e. usually that existing in Aug., 1914, by 40 p.c., if they did all the repairs, plus 8 p.c. of the cost of structural alterations, plus any increase in rates since Aug., 1914. Premiums were forbidden under pain of £100 fine, and the same penalty attached to persons convicted of making an undue profit from furnished houses. The county court was made the chief tribunal.

The Act of 1920 expired in June, 1923, so in that year a further measure was passed. This extended the life of the Act for another two years, or until June 24, 1925, and provided that as the houses became unoccupied they became automatically decontrolled. Further extensions kept the Acts in force until 1931.

The Act of 1914 debarred landlords from levying distress, or foreclosing, or re-entering into possession in respect of agreements after Aug. 4, 1914, for rentals not exceeding £50 without leave of the court.

RENTON. Town of Dumfriesshire, Scotland. It stands on the Leven, 2 m. from Dumfries, on the L.M.S. Rly. The principal industries are dyeing, bleaching, and calico printing. Pop. 4,965.

REPAIRS. By English law the liability to execute the necessary repairs to a house is entirely a matter of contract. There is no liability in law on either landlord or tenant, except in the case of houses of the working classes. As to such houses, the Housing and Town Planning Act, 1909, enacts that in any

contract made for the letting of a house (or part of a house) for habitation at a rent not exceeding £40 in the county of London. £26 in a borough or urban district with a population of 50,000 at least, and £16 elsewhere, there is an implied condition at the commencement of the tenancy that the house is in all respects reasonably fit for human habitation. Further, there is an implied contract by the landlord that the house shall during the holding be kept by him in all respects reasonably fit for human habitation.

In Scotland the landlord is, in the absence of stipulation to the contrary, liable to repair the house in a reasonable manner, having regard to its age and class.

REPARATIONS. Term applied to the agreement under the treaty of Versailles by which Germany undertook to indemnify the Allies for material destruction and damage done to property in the occupied areas and elsewhere in the Great War. The payments were gold and securities and material of many kinds. The details of all the arrangements were supervised by an inter-allied commission. By 1923 the payments, both in money and kind, had seriously fallen off. Britain put forward a scheme for a total payment of £2,250,000,000, but this France refused to accept and her troops occupied the Ruhr.

The Allies then set up two committees of investigation, one under the presidency of Gen. Charles G. Dawes, and the other of Reginald McKenna. Their conclusions were accepted by the Allies in 1924, and the Dawes Plan, as it was called, came into being. It provided Germany with a loan of £40,000,000 and fixed a scale of payments. This was £50,000,000 for the first year, rising to £125,000,000 for the fifth. Owen P. Young, an American, was appointed to receive the payments. In Sept., 1928, he reported that to the end of the fourth year Germany had fulfilled her obligations under the scheme.

On Oct. 30, 1928, Germany asked for a revision of the scheme, and a committee of experts was formed. Lord Revelstoke and Sir Josiah Stamp representing Britain at its deliberations in Paris. For a while the experts disagreed, France refusing to consider lower payments, and a deadlock ensued. Finally, Owen Young, chairman of the committee, prepared a new plan, midway between those of Germany and the Allies, which was agreed to in principle between Germany's chief creditors at the Hague Conference, Aug. 1929. Under the Young Plan, which fixed the amount of the reparations at thirty-eight milliard gold marks, Britain agreed to evacuate the Rhineland in Sept. and France in June, 1930, in return for Germany's consent to the Allies' agreed demands. See Dawes, C. G.; Germany; Rhine; Ruhr.

REPORTING. In journalism, the writing of reports of public speeches or descriptions of events of public interest. Notable examples are the reporting of parliamentary proceedings, trials in the law courts, and cases in the police courts. The term is applied also to the official reporting of Parliament. Reporters of legal trials are often barristers.

Of recent years verbatim reporting has been reduced to a minimum, and confined to the recording of speeches of primary importance or of trials of a sensational character, the formal record of which is introduced by a descriptive summary. See Hansard; Shorthand.

REPOUSSÉ. Art of ornamenting thin sheets of metal by hammering out designs from the back of the sheet. Practised by the Egyptians and Etruscans, it reached its highest perfection in the 16th century, in the time of Benvenuto Cellini (q.v.). In carrying out the art a large number of small hammers of varying sizes and weights are used. When the design has been hammered out from the

back or the inner surface of the article, the raised portions are generally finished by gravers or chasers. The metals which have chiefly been used in the practice of this art are gold, silver, copper, tin, and lead. Beautiful examples of repoussé work are in the museums at S. Kensington, London. See Casque.

REPRESENTATION (Lat. *re*, again; *præ*sentare, to present) In politics, the method by which people entrust the duties of legislation and government to men and women of their choice. The representatives, as they are called, are chosen by election in which the vote of the majority is decisive, and institutions based on this principle are the foundation of democratic government. Representation in the modern sense was unknown in the civilization of the ancients. There the citizen and freemen acted, whenever necessary, in person, but if a choice had to be made, it was usually done by lot or went by seniority. Kings and priests may be said to have represented the people, but not in the modern sense of the word. See Franchise; Reform Acts.

REPRESENTATIVES, HOUSE OF. Lower house of the Congress of the U.S.A. Its membership varies in number from time to time, being settled every ten years on a population basis. In 1910, by the census, it was fixed at 435, or one for every 212,407 inhabitants. According to the census of 1920 the number should be 460, but in 1930 no alteration had been made. An election takes place every two years. Since 1920 women have been able to elect or be elected exactly as men.

The elected chamber in the Parliament of the Australian Commonwealth is also called the House of Representatives. In 1929 the number of representatives was 76. They are elected for three years unless the House is dissolved earlier.

REPRIEVE. In law, withdrawal of the sentence on a prisoner for an interval of time whereby the execution is suspended (Blackstone). This may be done by the judge when he is not satisfied with the verdict or with the legality of the conviction. A reprieve is granted as of right to a woman who is capably convicted, and who, on pleading pregnancy, is found by a jury of matrons to be quick with child. There is another form of reprieve, by the royal grace, and in every country the head of the state has the power of reprieve by way of grace.

REPRODUCTION. Biological term expressing the act or process by means of which new organisms are produced from pre-existing individuals. It also includes the whole chain of events as the result of which life is continued from one generation to another. In all the higher animals reproduction is sexual, the individuals of each species falling into two groups having very different characteristics, male and female respectively.

In some cases, in both plants and animals, the process of reproduction is entirely parthenogenetic, no males having ever been observed. In most unicellular organisms conjugation does not seem to occur, and even when it does it is apparently an exceptional case, there being always long intervals in which

the reproduction takes place asexually. Most biologists believe that the function of sex in the process of reproduction is to mingle the characteristics of both parents. See Biology: Life; Mendelism; Parthenogenesis; Sex.

REPTILE (Lat. *reptilis*, crawling) Class of Vertebrates with cold blood, which breathe air by means of lungs and are reproduced by eggs, which are sometimes retained in the body until ready to hatch. The class consists of five existing orders, but fossil reptiles constitute as many more orders. Of existing orders one

is represented solely by the iguana-like Tuatara (*Sphenodon*) of New Zealand, the second by the tortoises and turtles, the third includes the crocodiles and alligators, the fourth the lizards, and the fifth the snakes. Formerly the amphibious animals (*Batrachia*) were classed as reptiles, but the soft glandular skin, devoid of scales or plates, and the fish-like larval stage

separate them. The skull is bony, and the jaws furnished with teeth, except in the turtles and tortoises, where they approximate more to a bird's bill. See Alligator; Chameleon; Crocodile; Gecko; Iguana; Lizard; Snake, etc.

REPTON. Village of Derbyshire. It is 5 m. from Burton-upon-Trent, on the L.M.S. Rly. The church of S. Wystan has a crypt and other remains of an earlier Saxon building. Some buildings of the monastery, founded in 1172, form part of the school, and the hall is the headmaster's residence. Repton School, founded in the 16th century, developed into a leading public school, and has now over 400 boys. Pop. 1,929.

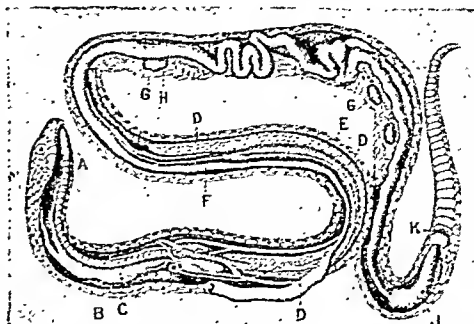
REPUBLIC (Lat. *res publica*, public affairs). Form of state opposed to a monarchy. The modern democratic republic begins with the adoption of federal republicanism by the British colonies in North America, 1776, soon followed by the centralised French republic, 1793. Latin America followed the U.S.A. with republican constitutions.

The Great War made Europe and the world predominantly republican, federal republics being established in Germany, centralised republics in Austria, Poland, Czechoslovakia, Finland, and the other Baltic states; and an entirely new type, Soviet republics, in Russia and her remaining dependencies. See Democrat; Federalism; Soviet.

REPUBLICAN. Political party in the U.S.A. The party organized by Thomas Jefferson was the first to bear this name, though it became afterwards the Democratic one. The existing Republican party dates from the anti-slavery agitation, the name being adopted in 1854.

The leading features of the Republican programme have been the strengthening of the central government as against the local spirit of the separate states; the maintenance of a gold standard; and the protection of American manufactures by a tariff system. Most of the presidents elected since the Civil War have been republicans.

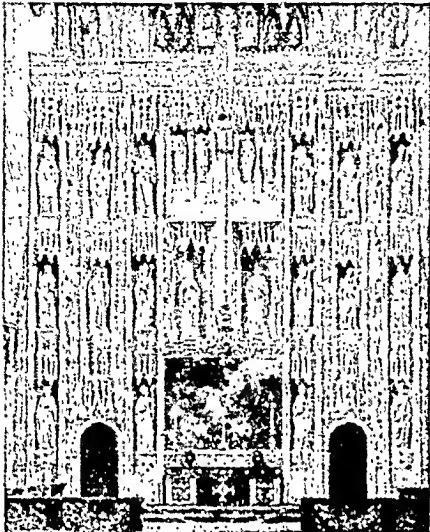
REQUIEM. Name given to the Mass for the dead, the word being the first of the introit of this office—*Requiem aeternam dona eis, Domine*—Grant to them eternal rest, O Lord. The requiem mass is sung on All Souls' Day, Nov. 2. Music for sung requiems has been



Reptile. Viscera of a serpent: A. Mouth. B. Gullet. C. Trachea. D. Lung. E. Liver. F. Stomach and Intestine. G. Egg. H. Ovary. I. Cloaca. J. Vent.

written by many great composers, among them those of Palestrina, Vittoria, Mozart, Cherubini, Berlioz, Brahms, and Verdi.

REREDOS (rear; Fr *dos*, Lat. *dorsum*, back). In ecclesiastical architecture, the screen or wall at the back of an altar. Originally it was merely a hanging of silk or tapestry; in the Middle Ages it became more substantial, but was still movable; and in the middle of the 16th century the fixed reredos came into



Reredos in Winchester Cathedral, probably begun in the 15th century, and restored 1884-91

use. In England it assumed early a more definitely architectural character, and was covered with elaborate Gothic detail. The 14th century reredos in Durham cathedral, the 15th century example in the chapel of All Souls, Oxford, and the one at Winchester may be cited. See Altar. Pron. rear-doss.

RESERVATION. Act of retaining unconsumed a portion of the consecrated elements at the Eucharist for future use. In early Christian times the object of the reservation was to provide (1) for the needs of the sick; (2) for those who lived in isolated districts; (3) for those who were prevented by persecution or other lawful cause from attending the Eucharist itself.

At the Reformation, Protestantism for the most part abandoned the practice. Article XXVIII of the Church of England declares that "The Sacrament of the Lord's Supper was not by Christ's ordinance reserved, carried about, lifted up, or worshipped." In 1899 the court of the archbishops refused to sanction reservation. The subject was again raised during the discussions on the new Prayer Book in 1927-28. It was proposed to allow reservation, with safeguards against its being used for adoration, but this was disliked by a majority of the House of Commons. See Eucharist.

RESERVOIR. Construction for the storage of water. Reservoirs are of three kinds: impounding reservoirs, formed by damming the course of a stream and creating a lake, or increasing the size of one already existing; storage reservoirs, into which water is pumped, or conveyed by an aqueduct, to deposit suspended matter; and service reservoirs, for filtered water. The last are generally of comparatively small size, covered in, and situated at a sufficient height above the area served to give a good pressure.

Impounding reservoirs, used either for irrigation or town supply purposes, are designed to collect a large part of the surface water from an extensive catchment area. Lake reservoirs formed by dams are of enormous capacity. Some storage reservoirs

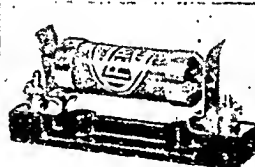
are formed by damming a valley or depression, but more commonly are wholly artificial. See Dam; Hydraulics.

RESIDENT. Diplomatic officer appointed to the capital of a state bound by certain obligations to the country to which he belongs. The sovereigns of such states, though nominally independent, are guided in their international action, and sometimes in domestic affairs, by the advice of the resident.

RESIN. Name given to certain vegetable and mineral substances consisting entirely of various combinations of carbon, hydrogen, and oxygen. Nearly all resins are translucent solids at normal temperatures, occasionally transparent, usually aromatic, and melt easily. Resins are divided into two broad classes, oleo-resins and gum resins. The former contain volatile aromatic oils which are driven off by distillation, and the latter gummy and mucilaginous substances which may be removed by dissolving in alcohols.

The resins of commerce are chiefly vegetable resins, e.g. common resin or rosin, obtained from various species of pine trees. Amber is a fossil coniferous resin. Resins are used in varnishing, lacquer work, in the manufacture of soap, waxes, printing inks, greases, and as antiseptics. See Amber; Balsam; Gum; Lacquer; Turpentine.

RESISTANCE. In an electric conductor, the measure of the extent to which it resists or opposes the passage of an electric current. The practical unit of resistance is the ohm. The resistance of a conductor varies according to the material of which it consists; of all practicable conductors copper offers the least resistance. In proportion as resistance increases, heat in the conductor is developed and the E.M.F. of the current is lowered. In a conductor of uniform section throughout, the total resistance increases directly in proportion to its length, but decreases in proportion as the cross-sectional area of the conductor is increased. In another sense, resistance is any object interposed in a circuit which develops or opposes resistance to the current flow. Such are coils of wire, connected in series, inserted in a circuit for the express purpose of increasing resistance. See Electricity; Ohm; Wireless Telegraphy.



Resistance. Type of wire-wound resistance (shown with holder) extensively employed in broadcast receiving apparatus

RESONANCE. (Lat. *resonare*, to sound back). Production of vibrations in a body by the action of a periodic force which has the same period of vibration as the natural period of the body. It occurs frequently in sound. If, for example, two tuning forks of the same pitch are held near each other, and one is sounded, the sound waves sent out by it will strike the second fork, and cause the latter to vibrate in unison.

Electric resonance occurs when an electrical circuit has a natural period equal or nearly equal to the period of the source of impulses or alternating electromotive force. See Sound; Wireless Telegraphy.

RESPIRATION. Process by which oxygen is conveyed to the blood, and carbon dioxide and water vapour, the waste products of the tissues, are removed. In marine animals this process is effected through the gills, in land animals through the lungs. In man the organs through which respiration is effected are the air passages, composed of the larynx, trachea,

the bronchi, and the lungs. The movements of the thorax are caused by the diaphragm and the intercostal muscles, which, by contracting, bring about an increase in the volume of the chest cavity. The lungs expand with this increase of volume, and air is drawn into them through the air passages. The respiratory muscles then relax, and the elastic recoil of the chest and lungs expels the air. The rate of respiration in a healthy adult is from 14 to 17 per minute. It is increased by exercise, febrile conditions, and certain diseases of the lungs. See Artificial Respiration; Lung.

REST HARROW (*Ononis spinosa*) or **WILD LIQUORICE.** Shrubby dwarf perennial of the order Leguminosae, a native of Europe, W. Asia, and N. Africa. It has a creeping root-stock, above or below ground whose rooting gives it so firm a hold that it was said to arrest the plough or barrow in its progress. The fruit is a small pod. In dry soils the stems become more erect and develop spines.



Rest Harrow. Leaves and flowers

RESTIGOUCHE.

River of New Brunswick, Canada. It rises in the W. of the province, flows N.E., and then turning E. forms the boundary between Quebec and New Brunswick. It is 225 m. long, and falls into Chaleur Bay. The name, an Indian one, means "the river in the shape of a hand," the river having five main branches. It is only partly navigable.

RESTORATION, THE. In English and Scottish history this term means almost always the restoration of Charles II in 1660. In France it refers to the restoration of the Bourbons in 1814. The so-called Restoration period in England embraces the years after 1660. The poets and wits who led the movement in literature are the poets and wits of the Restoration, and a group of playwrights, Congreve and Wycherley among them, are known as the Restoration dramatists.

RESTRAINT (Lat. *restringere*, to draw back). Literally, the act of hindering or limiting. Restraint of marriage is a restriction attached to a bequest forbidding a devisee to marry. The law of England looks on marriage with favour—no doubt as much for political as for moral reasons. Therefore gifts given upon conditions restraining marriage will generally be held to be given as if such conditions had not been made.

By the law of England an agreement in undue restraint of trade is bad, as being against public policy. By such an agreement is meant one whereby a person binds himself not to exercise his trade, profession, or calling in such a way as to fetter himself unduly. The reason why such an agreement is void is because it is to the public interest that all men should be free to work and carry on business.

RESURRECTION (Lat. *resurgere*, to rise again). Term specially used of rising from the dead. The conception is first found in the O.T. in the two records of restoration of life by a prophet (1 Kings 17, 20-24; 2 Kings 4, 32-37). It is applied figuratively to the nation's restoration from Divine judgement to Divine favour (Hosea 6, 1-3). To the hope of national restoration there attached itself the hope of individual restoration from death to life. This belief was afterwards extended to include the bad as well as the righteous

(Daniel 12, 2); the one class to be consigned to eternal torture, the other to be blessed with eternal life. In the Christian doctrine no material identity is affirmed between the body laid in the grave and the body raised. What is unequivocally asserted is that the personality of which the identity is maintained will not be disembodied, but possess an organ of activity and communication described as spiritual because adapted to spiritual uses.

The Christian doctrine of the resurrection of the dead is based on the belief that Jesus Christ rose from the dead on the third day.

Resurrection Men was the term used for the men who made a practice of disinterring lately dead bodies in order to sell them for dissecting purposes. See Bodysnatching.

RESZKE, JEAN DE (1850-1925). Polish singer. Born at Warsaw, Jan. 14, 1850, he studied singing in Italy. He appeared as a baritone in opera in Venice, 1874, London, 1875, and Paris, 1876. Turning tenor, he made a sensation by his performance in Madrid, 1879, and in Paris, 1883, in *Hérodiade*, and *Le Cid* of Massenet, and from 1888-1900 performed regularly at Covent Garden. His Wagnerian performances were specially memorable. He died April 3, 1925.

His brother Édouard (1855-1917) was born in Warsaw, Dec. 23, 1855, studied singing at Milan and Naples, and became a leading bass at the Théâtre Italien, Paris, 1876, later joining the Opéra there. With his brother he appeared regularly at Covent Garden from 1888-1900. He died May 29, 1917.

RETAINER. Fee of a nominal amount paid to a barrister in order to retain his services either generally, or for a particular case. A barrister so retained has a right to be briefed at a fee proportioned to his rank and standing at the bar.

RETFORD. East. Borough and market town of Nottinghamshire. It stands on the river Idle, 18 m. from Newark on the L.N.E. Rly. A large agricultural trade is carried on. The chief buildings are S. Swithin's church, the town hall, and the corn exchange. There is a grammar school, founded in 1552. Market day, Sat. Pop. 13,412.

RETINA. Membrane composed of ten layers of tissue. It forms the innermost covering of the interior of the eyeball, extending forwards to within a short distance of the margin of the pupil, and consists of an expansion of the optic nerve. The retina is the structure upon which fall images formed by rays of light passing through the lens. See Eye.

RETORT. Generally an apparatus in which a mixture or compound is broken up by the aid of heat or chemical action. One or more of the constituents of the contents of the retort is volatilised and expelled from the apparatus into another appliance where it may be condensed or absorbed and so collected. There are three broad classes: first, the well-known appliance of the chemical laboratory, made usually of glass, but sometimes of earthenware, clay, or metal; secondly, the fireclay or iron chamber of the ordinary gas works, in which coal is destructively distilled; and thirdly the vessels used by the metallurgist for the extraction of certain metals from their ores and for the separation of the metals of amalgams.

RETRIEVER. Sporting dog of the spaniel group, produced by a cross between the lesser black Newfoundland and the water spaniel. It is employed for retrieving game on land as the water spaniel does in water.

Three types of the retriever are recognized by sportsmen. The Labrador is, as a rule, merely a small black breed of Newfoundland; the flat or wavy-coated is the result of a cross between the Labrador and setter and collie; and the curly-coated is a cross with a considerable strain of poodle in him, and is equally good in water or on land. A retriever should have what is known as a tender mouth, and should hold the game without mangling it. See illus. below.

RETURNING OFFICER. Official who conducts an election. In parliamentary elections the duties are performed by the sheriff in counties, and in boroughs by the mayor. At parliamentary elections the returning officer receives nominations for the vacant seat, and also the cautionary deposit of £150 from each candidate. It is also his duty to see that the election is held in the manner prescribed by law. He announces the result and reports it in proper form to the Speaker. See Election.

REUNION. Name applied to the union of the various Christian churches. The movement for reunion took shape and strength during the 19th century, and in the 20th several unions took place. In England three of the Methodist bodies, in 1907, united to form the United Methodist Church, and the Free Church and the United

Presbyterian Church united in Scotland in 1920 to form the United Free Church of Scotland. In 1929 this latter body was united with the Church of Scotland. In England proposals for a reunion of all the Methodist churches were approved by the bodies concerned in 1928. In the U.S.A. and Canada reunion has made great advances.

REUNION, ÎLE DE LA. Island of the Indian Ocean, belonging to France. It lies about 420 m. E. of Madagascar, and has an area of 970 sq. m. The capital is St. Denis. The island was taken over by a French explorer in 1638, and was known as Bourbon from 1649. Pop. 186,637, of whom 180,694 are French.

REUSS. District of Germany, part of Thuringia. In the Middle Ages it came under the rule of a line of counts who were vassals of the emperor. One of them was known as der Russe, or the Russian, and this became the name of his county, which, in 1564, was divided into three parts. The branch ruling one died out, but the other states remained, their rulers being known as the princes of Reuss-Greiz and Reuss-Schleiz-Gera. In 1871 both states joined the German Empire. In April, 1919, the two, being then republics, were united into one, and in Dec., 1919, they became part of the republic of Thuringia (q.v.).

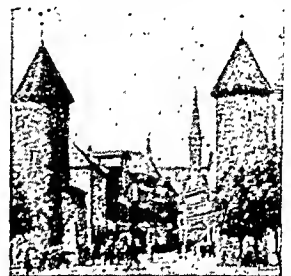
REUTER, LUDWIG VON (b 1869). German sailor. He was appointed commander-in-chief of the German naval force which, under the terms of the Armistice, had to be surrendered to the Allies. On Nov. 21, 1918, flying his flag in the battleship Friedrich der Grosse, he delivered up the German

fleet to Admiral Beatty, and later accompanied it to Scapa Flow. On June 21, 1919, Von Reuter ordered it to be scuttled. He returned to Germany in Jan. 1920, and in 1921 wrote *Scapa Flow*, 4th ed., 1928.

REUTER, PAUL JULIUS, BARON DE (1816-99). Founder of Reuters news agency. Born July 21, 1816, he became a bank clerk, and the organization that bears his name began in 1849 with a pigeon post instituted by him for the dispatch of commercial news between Brussels and Aix-la-Chapelle. Soon after the first cable was laid between Dover and Calais, Reuter became a naturalised British subject, set up his headquarters in London, 1851, and converted the business into a limited liability company in 1865. He was made a baron by the duke of Saxe-Coburg in 1872, and died at Nice, Feb. 25, 1899, being succeeded by his son Julius Clement Herbert (1852-1915). The offices are on the Thames Embankment, E.C.4.

REVAL.

Capital and chief port of Estonia. Its Estonian name is Tallinn. Standing on the bay of Reval, at the mouth of the gulf of Finland, it presents a fine appearance from the sea, but its principal streets are narrow, steep, and badly paved, and its numerous medieval houses, though picturesque, are ill



Reval. Towers of the ancient city gates

sued to modern requirements. It has an excellent harbour, and is connected with Russia by the Reval-Narva Leningrad rly., and by other lines with Port Baltic, Haapsalu, Pärnu (Pernau), Pskov, and the Latvian system. Among its industries are ship-building, distilling, and the manufacture of cotton, pulp, and paper, furniture, and other wood products. Pop. 132,000. See Estonia.

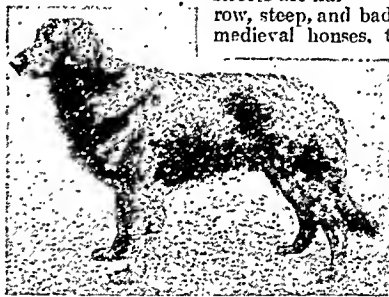
REVEL. Term for a noisy, riotous feast or merry-making. It was applied to the English and Scottish foolery carried on under a lord of misrule or abbot of unreason (q.v.). At an early date entertainments at court were known as revels, and the official whose duty it was to arrange and control these entertainments was known as the master of the revels.

REVELATION (Lit an unveiling). Name used to describe the self-manifestation of God to man or the disclosure by God of Divine truth to man. In every form of religion there are two sides: (1) the quest of man for God; (2) the impartation by God of truth to man. The second aspect is known as Revelation. The belief in Revelation assumes the possibility that God can communicate knowledge of Himself to man. This communication is made in many forms. It may come through nature. See Bible: Inspiration.

REVELATION, BOOK OF. Book of the N.T. The title is derived from the Greek word Apokalypsis (unveiling, or revelation), and hence the book is often called The



Reszke. Left, E. de Reszke as Mephistopheles; right, J. de Reszke as Lohengrin



Retriever, flat-coated type. See below



Ludwig von Reuter, German sailor

Apocalypse. It belongs to a special type of literature known as Apocalyptic, and stands in the same class as the Book of Daniel and the many Jewish Apocalypses which appeared in the intermediate period between the O.T. and N.T. Tradition ascribes the authorship of the book to John the Apostle, but this has been questioned by modern scholars.

REVERSION (Lat. *revertere*, to turn back). Term used in English law. It denotes the estate which remains in a grantor after the determination of a particular estate granted by him. Thus A, the owner in fee simple of a house, grants a lease to B for 99 years. A is said to have the reversion expectant on the determination of the lease.

BIOLOGICAL REVERSION Reversion to type is a biological phenomenon to express the reproduction of an ancestral characteristic. It may happen in two ways. The individual may revert towards an ancestor through the loss of some power of development in the germ-cell from which he sprang. Secondly he may reproduce an ancestral characteristic which has been missing in recent generations. Reversions to type occur occasionally when domestic varieties of animals are crossed experimentally, but they also arise in pure-bred individuals. See Atavism; Biology; Heredity.

REVOLVER. Pistol with a revolving cylinder comprising a group of cartridge chambers, capable of firing a number of shots without reloading. The principle of revolving barrels is of considerable antiquity, and a few specimens of flint-lock revolvers are known. The "pepper-box," one of the earliest percussion cap revolvers, had four or six barrels, generally all bored in the same block of metal, which rotated round a central axis as the hammer was worked. The development of the revolver is chiefly due to the efforts of Colonel Colt. By 1835 he had produced a very efficient weapon having one barrel and a revolving cylinder with six chambers. The latter were muzzle-loading, and the hammer had to be cocked by hand for each shot to be fired.

Breech-loading revolvers began to appear about 1850. Up to 1890 most revolvers were of the solid frame type, the empty cartridge cases being ejected one at a time through a slot in the end plate by means of a sliding pin. The self-ejecting type of weapon was invented by Smith and Wesson. Double-action revolvers, i.e. those in which a long pull on the trigger cocks the hammer and then lets it fall to fire the shot, also became general about the same time. See Pistol; Rifle.

REYKJAVIK. Town and seaport of Iceland, capital of the island. It stands on the Kollafjord, an opening on the S.W. coast.

Notable buildings include the cathedral, observatory, library, and museum. In the largest square in the town is a statue of Thorvaldson. There is steamer connexion with Copenhagen, and fish, butter, and skins are exported. Pop. 25,217. See Iceland.

REYNOLDS, SIR JOSHUA (1723-92). British painter. He was born July 16, 1723, at Plympton, Devonshire, his father, Samuel Reynolds, being master of the grammar school there. He studied art in London and then returned to Devonshire, where he painted a number of portraits. In 1744 he was again in London, and five years afterwards went out in the Centurion to the Mediterranean, and spent some time in Italy. In 1760 he settled in Leicester Square, London, where he remained for the rest of his days. Reynolds was a popular man in society. His intimate friend was Dr. Johnson. Others were Burke, Garrick, and Goldsmith, and it was Reynolds who, in 1764, suggested the formation of the Literary Club. When the Royal Academy



Sir Joshua Reynolds, British painter
Self-portrait

was founded in 1768 Reynolds became its first president, and received the honour of knighthood, and for the next 20 years exhibited in its gallery some of his most notable pictures. In 1791 he became blind, and on February 23, 1792, he died. He was buried in St. Paul's cathedral.

Reynolds was the great English master of portraiture. An unassuming draughtsman, a wonderful colourist gifted with a profound sense of decoration and a graceful humour, his portraits represent the finest of English art in its grandest form. Fine examples of his pictures are in the National Gallery, Wallace Collection, National Portrait Gallery, and Royal Academy, in private collections, and

also in many of the great private galleries of the U.S.A. See illus. pp. 7, 74, 93, 201, 218, 285, 325, 476, 613, 618, 653, 664, 673, 740, 752, 799, 815, etc.

RHADAMANTHUS. In Greek mythology, the son of Zeus and Europa, and brother of Minos, king of Crete. On account of the uprightness of his life he was made one of the judges of the dead in Hades, the others being Minos and Aeacus.

RHAETIA. Province of the Roman empire. It lay S. of the Danube and corresponded roughly to the greater part of Tirol with the adjoining Grisons. The Rhaetian Alps extend into Italy, Switzerland, and Austria, and include the Bernina, Albula, and part of the Ortler Alps. The loftiest peak is the Piz Bernina, 13,304 ft., and the chief pass the Splügen, nearly 7,000 ft. in alt. See Alps.

In geology, rhaetic beds is the name given to those rocks found at the top of the Triassic and at the base of the Jurassic. The rocks were so called from their occurrence in the Rhaetian Alps. They consist of shales, limestone, marls, and sandstones and contain

many fossils, including those of some of the earliest known mammals.

RHATANY (*Krameria triandra*). Shrub of the order Polygalaceae, a native of Peru. It has alternate, oval, leathery leaves, covered with silvery hairs. The flowers are bright scarlet and irregular in form. The dried root with its red-brown bark is well known in medicine, affording a form of tannic acid used as a tonic and as an astringent.

RHAYADER. Market town of Radnorshire, Wales. It stands on the Wye, with a station on the G.W. Rly., 14 m. from Llanidloes. The town grew up around a castle built about 1180 by the English to defend the district against the Welsh. Near are the valleys of the Elan and Claeerwen, wherein are the reservoirs that supply Birmingham with water. Market day, Wed. Pop. 910.

RHEA. In Greek mythology, daughter of Uranus, Heaven, and Ge, the Earth. She was the wife of Cronos (q.v.), by whom she was the mother of Zeus, Demeter, Hera, Poseidon, and Pluto. Rhea, originally a Cretan divinity, became early identified with the Phrygian goddess of nature and fertility, Cybele. In art, Rhea is represented as wearing a mural crown, and with lions either sitting by her throne or drawing her chariot.

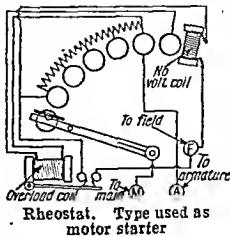
RHEA OR AMERICAN OSTRICH. Genus of running birds. They occur only in S. America and resemble small ostriches, except that the head and neck are feathered, the feet have three toes instead of two, and the tail is rudimentary. Three species are usually recognized, the common rhea, Darwin's rhea, and the long-billed rhea. Their feathers are used for making brooms.

Rheims. Anglicised name of the historic French city Reims (q.v.).

RHENUM. Chemical element, a homologue of manganese. Its symbol is Re, and its atomic number 75. It was found in the mineral columbite by the German chemists Noddack and Tacke in 1925. Associated with rhenum was another manganese homologue, with the atomic number 43, and this was named manganium by the discoverers.

RHEOSTAT. In electricity, an adjustable resistance to control the flow of electric energy through a circuit. A common form of rheostat

used for starting motors and controlling the strength of a magnetic field is as follows. An arm, moved by an insulated handle, is mounted at one end on a spindle in connexion with the circuit. The other end describes a circular path, and sweeps a number of brass studs set closely together. Each stud has connexion with its neighbour through a wire coil or bar of metal of high resistance, and that at one end of the series is joined up to the circuit. In the zero position the arm is off the studs; when it touches the first stud the current is admitted through all the resistances in series, and as it passes from stud to stud the resistances are cut out in succession until the last stud is reached and all obstruction



Rhea, South American bird allied to the ostrich
Gambler Bolton, F.Z.S.



Reykjavik. Parliament buildings and the cathedral

removed. A simpler form of rheostat is used in broadcast receiving sets. See Electricity.

RHESUS OR BENGAL MONKEY (*Macacus rhesus*). Small long-tailed monkey of the family Cynopithecidae, common throughout N. India. It is usually nearly 2 ft. long in body, with a tail varying from 6 to 8 ins. Its fur is brown, with a greyish or greenish tinge, and the bare parts of the face are red in old specimens. It is regarded as a semi-sacred animal by many of the Hindus, and



Rhesus or Bengal monkey, an animal common in N. India
W. S. Berridge, F.Z.S.

may be found in considerable numbers in the precincts of certain temples. It feeds mainly on fruit and seeds, but will also eat insects. In captivity it displays great intelligence, while its hardy constitution recommends it to the street organ-grinder.

RHEUMATIC FEVER. Acute disease due to an infective agent which has not yet been isolated. The temperature rises to 102° F. or more; then in a few days one or more of the joints become swollen, hot, painful, and reddened. The knee and ankle are the joints most frequently affected, but any joint may be involved. Involvement of the heart is a frequent and serious complication.

The essential feature in the treatment is to keep the patient absolutely at rest, so as to diminish the strain on the heart. The diet should be light. The affected joints should be wrapped in cotton-wool, and padded splints often give relief. As internal medicines, salicin or salicylates and potassium acetate and citrate are largely used.

RHEUMATISM (Gr. *rheumatismos*, flux or rheum). Term popularly used for painful affections of the muscles or joints. It embraces, from the physician's point of view, several distinct conditions, among them arthritis. Acute rheumatism is equivalent to rheumatic fever. See Arthritis; Fibrositis, etc.

RHEUMATOID ARTHRITIS OR **ARTHRITIS DEFORMANS.** Disease of the joints, the exact cause of which is unknown, but is probably infective. In the acute form the symptoms resemble those of rheumatic fever, the joints becoming swollen and painful. The chronic form is more common, the first symptoms being pain and swelling in a joint. Gradually other joints become involved. As the disease progresses, the tissues of the joints undergo various changes, with the formation of bony outgrowths.

Treatment consists in maintaining the general health and giving a nourishing diet. Salicylates or potassium iodide may be prescribed. Counter-irritation of the joints by the application of blisters is often serviceable.

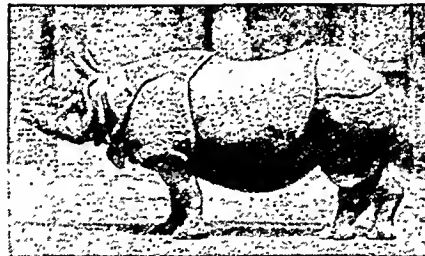
RHINE. European river. It rises in Switzerland, flows between France and Germany, then through Germany and Holland to the North Sea, after a course of over 800 m. The head-streams rise near the sources of the Rhône and Reuss, and the combined stream passes between Switzerland and Liechtenstein N. to Lake Constance. Below the lake it flows W. and plunges over the falls near Schaffhausen and at Zurzach, and receives the Aar before it reaches Basel. It flows between Alsace and Baden, and receives the Ill, Neckar, Main, and Moselle, and passes Strasbourg, Mannheim, Mainz, and Coblenz.

Below Bonn the river enters the great European plain, and bears gradually W. to the sea; Cologne and Düsseldorf are the chief German cities, and Rotterdam is the great Dutch port on the delta. The Ruhr and Lippe are the chief lower tributaries. The distributaries of the delta leave the main stream almost as soon as Holland is reached; these are the Waal, Yssel, Lek, Crooked or Old Rhine, and Vecht. Canals connect the Rhine navigation with the Danube, Meuse, Seine, Saône, and Rhône, and other canalisation schemes are projected. See Bingen; Bonn; Germany; Lorelei; Rhône; Versailles, Treaty of.

RHINELAND, RHINE PROVINCE OR RHENISH PRUSSIA. Province of Prussia. It is the most westerly and the most densely peopled province of the republic. The Ruhr coalfield is the basis of the great industries of the Düsseldorf dist.; the Saar coalfield is in the S.W. (See Saar.) Coblenz is the capital. Its area is 9,478 sq. m.

The idea of an independent Rhineland republic, begun after the Great War, resulted in its proclamation on Oct. 21, 1923, at Aix-la-Chapelle, but the movement did not come to anything. After the Great War the Rhineland was occupied by the Allies. The last British troops withdrew in Dec., 1929, and the last French troops in June, 1930. Pop. 7,256,978 See Germany; Reparations.

RHINITIS (from Gr. *rhis*, nose). Inflammation of the mucous membrane of the nose. Acute catarrhal rhinitis may be the familiar cold in the head, or may be caused by irritating gases, dust, or pollen of plants, catarrh due to the last being spoken of as hay fever. In the hypertrophic form of chronic rhinitis there is thickening of the tissues covering the bones of the inside of the nose.



Rhinoceros. Indian species, distinguished by its thick folds of skin, resembling plates of armour
Gambier Bolton, F.Z.S.

RHINOCEROS. Genus of large ungulate mammals, confined to Central and S. Africa and S. Asia. Five species are usually recognized, of which three occur in Asia.

The Indian rhinoceros has one horn, and is distinguished by the thick tuberculed skin, which is folded in places. It stands a little over five feet high at the shoulder, and is of heavy and clumsy appearance. It is found in swampy spots in the jungle, and is usually timid and inoffensive. The Javan and Sumatran rhinoceroses are smaller in size, and the skin is smooth and inclined to be hairy. The latter species has two horns, usually short. The black rhinoceros, a native of Africa, ranges from Abyssinia to Cape Colony. It has two horns, and the skin is smooth and almost hairless. The upper lip is prolonged and pointed, and somewhat prehensile. The white rhinoceros, the largest of all, sometimes attains a height of over six feet at the shoulder. It lacks the pointed upper lip of the black species, and has a tuft of hair at the tip of each ear. It is found in the S. Sudan, the Congo, and S. of the Zambesi.

RHINOPLASTY. Term applied to plastic surgery as far as it affects the nose. When the organ is deformed as a result of disease or

injury it is often possible to improve its appearance in great measure and in some cases to restore it completely. The operation may only incur skin grafting, but if the bones are flattened a piece of gristle may be transplanted from the ribs, or a piece of bone from the shin or haunch bone, in order to provide a firm basis for the skin.

RHODE ISLAND. State of the U.S.A., one of the original thirteen. Its area is 1,300 sq. m., of which 246 sq. m. are water. The surface is fairly level in the S., with plains and swamps along the coast, but hilly in the N. and E. Narragansett Bay extends inland for 30 m. and contains several islands, from one of which the state derives its name. A little farming is carried on, but the chief industrial interests are manufactures. Providence is the capital; other large towns are Pawtucket and Woonsocket. Pop. 716,000.

RHODE ISLAND RED.

American breed of fowl. There are two varieties, the rose-comb, and single-comb. The colour is a deep red, with black tail and black markings on the wing primaries. A good winter layer, with large brown eggs, it makes a good table bird also.



Rhode Island Red. Cockerel of this American breed

RHODES (Gr. *Rhodos*). Island in the Aegean Sea, sometimes included in the Dodecanese. It lies 12 m. from the coast of Asia Minor, and is 550 sq. m. in area.

The island was probably called Rhodos from its cultivation of roses (Gr. *rhodon*). Its three chief towns, together with Chnidos and Halicarnassus in Asia, and the island of Cos, formed the Doric hexapolis, or league of six cities. The island first acquired political importance when the three towns in 408 B.C. built a new city called Rhodos, which became the capital of the island. Rhodos lost its independence in the time of Alexander the Great, but regained it after his death, and soon became a thriving commercial centre. Its code of maritime laws was later adopted by the Romans and through them by modern European states.

For their support of Rome during her wars against the Seleucid emperors of the East, the Rhodians were rewarded with mercantile privileges and an increase of territory. Later included in the Byzantine empire, Rhodos was the headquarters of the Knights Hospitallers, 1309-1523, when it was captured by the Turks. The island was occupied by Italy during the Italo-Turkish War of 1912. By the treaty of Sévres, after the Great War, Italy received Rhodos and neighbouring Dodecanese islands. Pop. 45,000.

RHODIAN WARE. Class of glazed pottery, also known as Turkish ware, formerly made in Rhodos. The ground is generally pure white, with bold designs in blues, greens, etc., outlined with a dark pigment. The glaze is unusually thick.

RHODES. Capital of the island of Rhodos. Situated in the N.E. corner of the island, it is a port of call for Levant steamers. Among the remains of the Knights Hospitallers are the castle; the Street of the Knights, which contains remains of the houses of assembly of the Knights Hospitallers; and the Grand Hospital of the Knights, restored by the Italian government and converted into a museum in 1914. Pop. 25,000.

RHODES, CECIL JOHN (1853-1902) British statesman. A son of the vicar of Bishop's Stortford. He was born July 5, 1853. Educated at the local grammar school, he went out to Natal as a youth, but returned to spend some time at Oriel College, Oxford. Soon he was again in S. Africa, where he became interested in the diamond industry, then in its infamy. In this he became one of the leading figures and from it he derived much of his vast wealth.

The creation of the De Beers Co. was the work of him and his associates.

The political career of Rhodes began in 1881, when he was elected a member of the legislature of the Cape Province. He started at once to work for the extension of British power, and he continued this after he became premier in 1890. In 1889 he secured a charter for the British S. Africa Co., and later the great area under the company was named Rhodesia. He was responsible for bringing Bechuanaland under British authority, and another of his successes was the acquisition of Mashonaland. In 1896, as a result of the Jameson raid into the Transvaal, Rhodes resigned office, and also his position as managing director of the British S. Africa Co. In 1899, when war broke out with the Boers, he helped to defend Kimberley, and he was still in S. Africa when he died March 21, 1902. He was buried on the Matopos Hills. Much of his wealth was left to the university of Oxford.

RHODES TRUST. Trust established under the will of Cecil Rhodes for the purpose of granting scholarships at the university of Oxford to students from the British Oversea Dominions, the U.S.A., and Germany.

The normal yearly value of the Rhodes scholarships is £300, but in 1921 a bonus of £50 was added. Later the amount was fixed at £400. Under the will, 60 scholarships were endowed for the British Empire, two for each state of the U.S.A., and five to be nominated by the German Emperor from Germany. The last named were withdrawn by Act of Parliament during the Great War but were afterwards restored. The number of scholars at one time is about 200. The London office of the trustees is at Seymour House, Waterloo Place, S.W. Rhodes House, Oxford, erected as a centre for the scholars, was opened in 1929.

RHODES, WILFRED (b. 1877). English cricketer. Born at Kirkheaton, Yorkshire, Oct. 29, 1877, he first played for his county in 1899, securing his place as a left-handed slow bowler. For thirty years he kept his place in the Yorkshire eleven, and he played many times for England. In 1926 his bowling was the decisive factor in winning for England the final Test Match at the Oval.

RHODESIA. Territory of British South Africa, named after C. J. Rhodes, and until 1923 administered by the British South Africa Co. It consists of Southern Rhodesia, a self-governing dominion, and Northern Rhodesia, a crown colony.

SOUTHERN RHODESIA. This extends from the Transvaal province northward to the Zambezi river, and has an area of 148,575 sq. m. The pop. is 39,174 (whites) and 900,000 (natives). It is rich in gold reefs and other minerals and possesses great agricultural resources. Maize is the largest crop, and tobacco, citrus fruits and various native cereals are grown. S. Rhodesia, which was granted responsible government in 1923, is administered by a governor and an elected legislative council. The seat of government is at Salisbury. Bulawayo is another important centre.

NORTHERN RHODESIA. This extends from the Zambezi river to the border of the Congo Free State and Tanganyika. It has an area of 291,000 sq. m., and a pop. (European) of 4,624 and 1,150,000 (natives). The country is chiefly a high plateau, much of it suitable for farming and grazing. Lead and copper are mined. N. Rhodesia is under a governor and a nominated legislative council. The most important centres are Livingstone (the seat of the government), Broken Hill, Fort Jameson, Abercorn and Kasama.

The outstanding interest of prehistoric

Rhodesia lies in its mine-workings, as well as in upwards of 500 ruined stone structures between the Zambezi and Limpopo rivers. Discoveries made by an Italian scientific expedition in 1930 seem to prove that the S. Africa of ancient times was in the relatively undisturbed possession of cave-dwelling Bushmen.

RHODIUM (from Gr. rhodon, rose). A rare metallic element. It is hard, ductile, malleable at red heat, white with a bluish tinge resembling aluminium. Its chemical symbol is Rh; atomic weight 102.91; atomic number, 45; melting point, 2000° C.; specific gravity, 12.1. Discovered in 1804 by William Hyde Wollaston, in platinum sands from the Ural Mts., it is one of the platinum group of metals and is always found in native platinum and generally with that metal in the Urals and S. America.

RHODODENDRON. Genus of evergreen shrubs and trees of the order Ericaceae. They are natives of the East Indies, China, Japan, India, the mts. of Europe, and N. America, and have been introduced into Britain at various dates since 1656, when *R. hirsutum*, the hairy alpenrose, came from Switzerland. The flowers are of all shades and colours, except blue. There are over 200 species.

RHODONITE. A manganese silicate belonging to the pyroxene group of minerals, in which part of the manganese has been replaced by iron, calcium, or zinc. The mineral has a glassy appearance, is some shade of red in colour usually, and is found in Scandinavia, Germany, Russia, N. America, etc. Some varieties are cut and polished for gem stones.

RHODOPE MOUNTAINS. Outlying chain of the Balkan Peninsula (q.v.), in Mace-

donia and partly in Thrace. It extends S.E. from the Sofia district towards Adrianople and the Aegean Sea. The loftiest peak is Muss-Alla Dagb, alt. 9,613 ft. S.E. of this rises the range Dospad Dagb (Bulg. Despotog Dagb), a name sometimes applied to the parent chain.

RHONDDA or *YSTRADYFODWG*. Urban dist. of Glamorganshire, Wales. It stands in the valley of the Rhondda, 7 m. from Pontypridd on the G.W.R. A great coal-mining centre, Rhondda sends two members to Parliament. Pop. 162,500.

The river Rhondda flows 15 m. S.E. to the Taff at Pontypridd.

RHONDDA, DAVID ALFRED THOMAS, VISCOUNT (1856-1918). British merchant and politician. Born at Aberdare, March 26, 1856, his father, Samuel Thomas, was a successful grocer who became interested in collieries. David, who was educated at Clifton and at Caius College, Cambridge, became head of the Cambrian Colliery and other colliery companies in S. Wales. He was Liberal M.P. for Merthyr, 1888-1910, and for Cardiff, 1910; president of the local government board, 1916-17; and food controller in 1917. In 1916 he was created a baron. He died July 3, 1918, just after he had been promoted viscount.

Lord Rhondda's title passed to his daughter, Margaret Haig (b. 1883), who succeeded to many of his positions, and became known as an advocate of women's rights.

RHÔNE. River of Switzerland and France. It rises in a glacier in the Bernese and Pennine Alps, and flows into the Lake of Geneva. Emerging at Geneva it flows to Lyons, where it is joined by the Saône, and at Arles breaks into two main branches, the Petit Rhône and the Grand Rhône, and several lesser streams. The Rhône is connected by canal with the

Rhine, Loire, Yonne, Seine, and with Marcellines. Between the Swiss frontier and the sea power stations are being built to supply electric current. The river is 504 m. long. The Rhône dept. of France lies contiguous with the depts. of Saône-et-Loire, Loire, Isère, and Ain, and is chiefly industrial. Its area is 1,104 sq. m. Pop. 993,900.

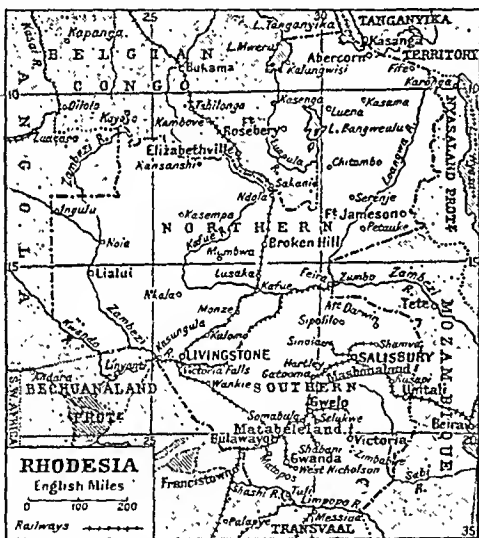
RHUBARB. Edible-stalked herbaceous plant of the order Polygonaceae, genus *Rheum*, a native of Siberia. The stalks are stewed and eaten as a sweet and used in jam making; the roots possess medicinal properties. Preparations of rhubarb are employed for disorders of the stomach and of digestion in children. From one variety, champagne rhubarb, an effervescent beverage is made. The leaves are poisonous to animals and dangerous to human beings.



Rhododendron. Flower cluster of the hardy shrub



Rhubarb. Leaves and flowers of the common edible species



Rhodesia. Map of the British possession in S. Africa

RHUDDLAN OR **RHYDDLAN**. Town of Flintshire. It stands on the Clwyd, 8 m. from Denbigh, on the L.M.S. Rly., and is famous for its 12th century castle, now in ruins. On Rhuddian Marsh, it is said, Offa of Mercia defeated the Welsh in 795. Pop. 1,701.

RHYL. Urban dist. and watering place of Flintshire. Wales. It stands at the mouth of the Clwyd, 30 m. from Chester, on the L.M.S. Rly. There are good sands, a pier, and winter gardens. Pop. 13,396.

RHYME OR **RHME** (Anglo-Saxon, rim; Gr. rhythmos, rhythm). In poetry, the repetition, at the end of one or more lines, of the sound or combination of sounds at the end of another line. In English verse the last stressed vowel and all the following sounds of each rhyming line are identical, the preceding consonants being different, whereas in French verse the latter may be identical (rich rhyme), provided that the words are not the same. Intimately associated with accentual metre, rhyme was avoided in Greek and Latin poetry.

RHYMNEY OR **RUMNEY**. River of England and Wales. Forming the boundary between Monmouthshire and Glamorganshire, it enters the Bristol Channel 2 m. E. of Cardiff.

Rhymney is also the name of an urban dist. of Monmouthshire. It stands on the Rhymney, 2 m. from Tredegar, on the G.W.R. There are coal mines and steel works. Pop. 11,691.

RHYOLITE (Gr. rhein, to flow; lithos, stone). In geology, name given to an acid lava of porphyritic texture and siliceous composition. The rock may be glassy, like pumice stone, scoriaceous or vesicular, and is found in many volcanic regions.

RHYTHM. In its general connotation rhythm is one of the three essential elements of music, the others being harmony and melody, and it is the distinguishing characteristic of dancing. Resulting from the intimate association of poetry with music, all verse having originally been composed for intoning to the harp or singing to the pipe or lyre, rhythm draws the capital distinction between poetry and prose, which is the vehicle of thought intended to be spoken. Verse, whether rhymed or unrhymed, is written in metre and strict rhythm, on its technical side thus becoming a subject for the grammarian, of whose science the laws of versification form part under the name of prosody.

RIB. In the human being, one of a series of paired, curved bones. They are twelve in number on either side of the body, and in either sex. Posteriorly, the ribs articulate with the spinal column. Their anterior ends terminate in the costal cartilages. The first seven pairs articulate with the sternum or breast-bone. The cartilages of the next three are attached to the cartilage of the rib above each. The extremities of the last two ribs are free, and these are termed "floating ribs." See Anatomy.

RIBBLE. River of England. It rises on the E. of Wharfedale and flows through Yorkshire and Lancashire to the Irish Sea. Its length is 75 m.

RIBBLESDALE, **BARON**. British title borne by the family of Lister, 1797-1925. The first baron was Thomas Lister, M.P., a Lancashire manufacturer, and in 1876 his descendant, Thomas (1854-1925), became the fourth baron. He was a lord in waiting to

Queen Victoria, a captain in the Rifle Brigade, a connoisseur and master of the royal buckhounds 1892-95. He died Oct. 21, 1925.

RIBBON (Fr. ruhan, from Old French riban, ruband). A narrow woven strip in a textile fabric, usually silk or satin; also part of the insignia of a knightly order. Power looms are used in making nearly all fabric ribbons, though a certain amount of artistic work is executed on hand looms. The chief centre of the ribbon industry in Great Britain is Coventry.

The word ribbon is used in a military sense for the specially coloured ribbons from which medals are suspended. To avoid the inconvenience of wearing the medals constantly, a piece of its proper ribbon, $\frac{3}{4}$ in. deep, is worn on the left breast, and where more than one ribbon is used, they are placed side by side, in order of precedence from the right of the wearer. See Medal.

RIBBON FISH. Popular name given to various deep-sea fishes which have the body elongated and laterally compressed so as to resemble a ribbon. Some attain a length of 20 ft., with a depth of a foot, and a thickness of little more than an inch. See Oar Fish.

RIBBON GRASS (*Phalaris arundinacea*). Stout, tall grass of the order Gramineae. A native of the N. temperate regions, the cultivated variety variegata has broad, flat, striped leaves. The wild form grows on river banks and the margins of lakes, and is known as reed-grass.

RIBCHESTER. Village of Lancashire. It stands on the Ribbles, 5 m. from Blackburn. It is notable as the site of a Roman station Bremetennacum.

RICARDO, **DAVID** (1772-1823). British political economist. Born in London of Jewish descent. April 19, 1772, he made a large fortune on the stock exchange, and took a keen interest in economic and scientific questions. His *Principles of Political Economy and Taxation*, 1817, is noted for its exposition of the theory of economic rent. In politics a Radical, he died Sept. 11, 1823. See Rent.

RICCI, **MATTEO** (1552-1610). Jesuit missionary. Born at Macerata on Oct. 6, 1552, he entered the Society of Jesus in 1571 and was a missionary in China from 1583 till his death at Peking, May 11, 1610. He published a valuable book of memoirs and information relative to Chinese history.

RICE (*Oryza sativa*). Grass of the order Gramineae, native of Asia and Australia. It is extensively cultivated wherever there are marshy lands and a temperature between 60° and 80° Fah. Fifty or more varieties are known. Each grain stands on a separate footstalk.

Besides furnishing a staple food in China, India, and Japan, rice is used in the manufacture of starch, vinegar, and other commodities. In Japan it yields an alcoholic drink called saké. It is used in Great Britain by distillers, and in the East arrack is made from it. The bulk of the rice crop is consumed in the countries where it is produced. In Burma, the husk is used as fuel in specially designed furnaces, or is converted into producer gas.

RICE, **JAMES** (1843-82). British novelist. Born at Northampton, Sept. 26, 1843, and educated at Queens' College, Cambridge, he became a barrister, 1871, and took up journalism. His fame rests on his collaboration in the writing of novels with Walter (afterwards Sir Walter) Besant, a partnership which began

with Ready Money Mortiboy in 1872, and included *The Golden Butterfly*, 1876, the most successful of all. He died April 26, 1882.

Rice Bird. Popular name for the bobolink (q.v.). The name is also applied to the Java sparrow, common in aviaries.

RICE FLOWER (*Pimelea*). Genus of trees and shrubs of the order Thymelaeaceae, natives of Australasia. They have opposite or scattered leaves and tubular flowers, mostly in clusters or dense beads, at the tips of the annual shoots. They are largely cultivated as greenhouse plants, the best known being *Pimelea spectabilis*, with white flowers in dense globular heads, surrounded by bracts.

RICE-PAPER PLANT (*Fatsia papyrifera*). Shrub of the natural order Araliaceae. A native of Formosa, it grows to a height of about 8 ft., and has large, lobed, downy leaves and drooping clusters of greenish flowers. Rice paper is made from the white pith.



Rice-paper Plant. Head of leaves

RICH. English family. It was founded by Richard, 1st Baron Rich (c. 1496-1567), of Leez or Lees, now Leighs, Essex, who founded Felsted grammar school. His grandson, Robert (d. 1619), was first earl of Warwick of the 1618 creation, and married Penelope Devereux (c. 1562-1607), daughter of the 1st earl of Essex and the Stella of Sidney's sonnet sequence, Astrophel and Stella.

RICHARD I (1157-99). King of England. The third son of Henry II and Eleanor of Aquitaine, he was born at Oxford, Sept. 8, 1157. Having taken a crusader's vows before his accession, July 11, 1189, he threw himself with ardour into the crusade then being organized, and passed only six months of his reign in England. Popularly known as Coeur de Lion, the Lion Heart, he was largely responsible for the capture of Acre in June, 1191, but in Sept., 1192, made a three years' truce with Saladin. On his way home, in disguise, through the territory of his enemy, Leopold, duke of Austria, he was captured, handed over to the emperor, Henry VI, and held to ransom. This being paid, he returned to England in March, 1194. He was mortally wounded while besieging the castle of Chalus, April 6, 1199, and was buried at Fontevault. In 1191 he married Berengaria of Navarre.

RICHARD II (1367-1400). King of England. A son of Edward the Black Prince, he was born at Bordeaux, Jan. 6, 1367, and succeeded his grandfather, Edward III, as king, June 21, 1377.

For eight years he ruled with moderation and wisdom. After 1386, however, he became despotic. When John of Gaunt died in 1399, he seized the inheritance of Lancaster, which should have passed to Henry of Hereford. Then when Richard had gone to Ireland, Henry returned to England and Richard was forced to abdicate.



Rice. Plant and ripe spikelet, of this important cereal

in his favour, Sept., 1399. Richard was imprisoned in Pontefract Castle, where he died or was murdered, Feb. 14, 1400.

RICHARD III (1452-85). King of England. The youngest brother of Edward IV, he was born at Fotheringhay Castle, Oct. 2, 1452, and usurped the throne, setting aside the lawful king, his nephew Edward V. A



Richard III,
King of England
Nat. Port. Gall.

man of great ability but of little or no principle he was crowned July 6, 1483. Edward and his brother were imprisoned in the Tower, and there murdered. On Aug. 7, 1485, the young earl of Richmond, Henry Tudor, landed at Milford Haven, and on the 22nd Richard was slain at Bosworth. He was known as Crookback because one of his

shoulders was higher than the other.

RICHARDSON, SAMUEL (1689-1761). English novelist. Born in Derbyshire, he came to London at seventeen, and became a prosperous master printer. When over fifty he turned his mind to novel writing. His first novel, *Pamela or Virtue Rewarded*, appeared in 1740; *Clarissa Harlowe*, in 1748; and *Sir Charles Grandison*, in 1754, all are in the form of letters. Excelling in his knowledge of feminine psychology, Richardson represents a notable landmark in the evolution of the novel. He died July 4, 1761.

RICHARDSON, THOMAS (1870-1912). English cricketer. Born at Byfleet, Surrey, Aug. 11, 1870, he first played for his county against Essex at Kennington Oval in 1892. He took part in four test matches in England against the Australians, one in 1893 and three in 1896, and toured with English teams in Australia. One of the most consistent fast bowlers that ever lived, he died July 3, 1912.

RICHBOROUGH. British seaport. It stands on the estuary of the Stour between Sandwich and Ramsgate. It was developed during the Great War after April, 1916, till the works covered an area of 2,200 acres. From here a cross-Channel train ferry went to France, carrying war material. It was purchased in 1925 for industrial development. There are ruins of a Roman castle.

RICHIEU. River of Canada. It issues from Lake Champlain, and falls into Lake St. Peter, an expansion of the St. Lawrence, at Sorel. Its length is 210 m. It is also known as the Chambly and the St. John.

RICHIEU, ARMAND JEAN DUPLESSIS, CARDINAL, DUC DE (1585-1642). French statesman. Born Sept. 5, 1585, he was the real director of French policy almost throughout the reign of Louis XIII. Of this policy the leading features were the aggrandisement of France, the concentration of power in the hands of the monarch and his chosen ministers, and religious toleration.



Cardinal Richelieu,
French statesman
After P. de Champaigne

Throughout he had to defend himself against the intrigues of the nobles; but when he died, Dec. 4, 1642, all France enjoyed complete liberty of conscience, the crown was supreme, and France had definitely established her position as the first military power in Europe.

RICHEPIN, JEAN (1849-1926). French poet, dramatist, and novelist. He was born at Médéa, Algiers, Feb. 4, 1849. Romantic in his verse and a realist in many of his stories, his many novels include *Les Morts Bizarres*, 1876; *Le Pavé*, 1883; *La Miseloque*, 1893; *Contes 'Espagnoles'*, 1901; *L'Aile*, 1911. Among his plays are *Nana Sahih*, 1883; *Le Filihustier*, 1888; *Par le Glaive*, 1892; *Don Quichotte*, 1905; *La Route d'émeraude*, 1909. He died Dec. 12, 1926.

RICHMOND. Mun. bor. and residential suburb of Greater London. It is on the slope of a hill in Surrey, 9 m. from Hyde Park Corner. The town is served by the Southern and District Rlys., is connected with the Piccadilly Tube at Hammersmith, and has excellent tramway and omnibus services. The

hor., which includes Kew, Petersham, and part of Mortlake, was incorporated in 1890 and is famous for its associations with royalty. The remains of the palace, in which Elizabeth died, were restored, 1913-19. The Old Deer Park is now the venue of the Richmond Horse Show and various sports. The terrace gardens, public since 1886, command a magnificent view over the river. The Star and Garter hotel, founded in 1738, was pulled down in 1919 to make room for a home for disabled soldiers and sailors. Pop. 46,639.

Richmond Park, a royal demesne of 2,250 acres, famous for its trees, its deer, and general picturesqueness, contains White Lodge.

RICHMOND. Mun. bor. and market town of Yorkshire (N.R.). It stands on the left bank of the Swale, 50 m. from York, on the L.N.E. Rly. Of the Norman castle, the magnificent keep and some other portions remain. The grammar school is modern, although the foundation dates from the 16th century. Richmond has an agricultural trade and some manufactures. Races are held here. Near are the ruins of Eashy Abbey. Richmond was the head of a large honour, and from here various princes took the title of duke. Market day, Sat. Pop. 5,000.

RICHMOND. City and port of entry of Virginia, U.S.A. The capital and largest city of the state, it stands on the James river, 115 m. by rly. S. of Washington. It carries on an extensive trade in tobacco, and has important ironworks, machine shops, and rly. plant works. It has flour mills and manufactories of wagons, carriages, lumber products, trunks, hags, and boxes. Founded in 1733, Richmond became a city in 1782. It has been the state capital since 1779. Pop. 171,667.

RICHMOND, GEORGE (1809-96). British portrait painter. Born at Brompton, London, March 28, 1809, he was greatly influenced by William Blake. He became A.R.A. in 1857 and R.A. in 1867. He died in Portman Square, London, March 19, 1896.

RICHMOND, SIR WILLIAM BLAKE (1842-1921). British painter. Born in London, Nov. 29, 1842, a son of George Richmond he became specially prominent in connexion with the decoration of the inner dome of St. Paul's with mosaics. He was Slade professor at Oxford, 1878-83; became A.R.A.

in 1888 and R.A. in 1895; and was created a knight in 1897. He died Feb. 11, 1921.

RICHMOND AND GORDON, DUKE OF. Title held by the family of Gordon-Lennox. Charles Lennox, natural son of Charles II by Louis de Kéroualle, was made duke of Richmond in the English and duke of Lennox in the Scottish peerage in 1675. Charles, 4th duke, was lord-lieutenant of Ireland, 1807-13, and governor-general of Canada, 1818-19. Charles Henry (1818-1903), 6th duke, held several government offices and was Conservative leader in the Lords, 1867-76. In 1836 he inherited the estates of the last duke of Gordon and took that name. His son, Charles Henry, the 7th duke (1845-1928), was a Conservative M.P. 1869-88. The duke's seats are Goodwood and Gordon Castle.

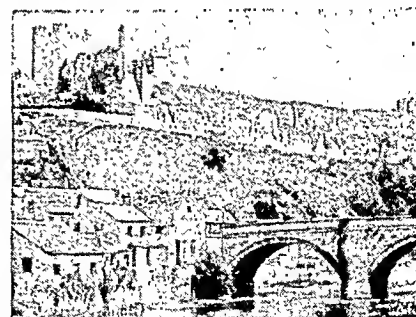
RICHMOND AND LENNOX, FRANCES TERESA STUART, DUCHESS OF (1648-1702). Mistress of Charles II. Born July 8, 1648, she was educated in France, and, coming to England as a maid of honour to Catherine of Braganza, was Charles's favourite from 1663-67, when she made a runaway match with the duke of Richmond and Lennox (d. 1672). She returned to court in 1668, and died Oct. 16, 1702. She was the model for the figure of Britannia on British copper coins.

RICHTER, HANS (1843-1916). Austrian orchestral conductor. Born at Raab, Hungary, April 4, 1843, he became chorus master at the Munich opera, 1868. He conducted the first performance of *Lohengrin* at Brussels, 1870, and of *The Ring of the Nibelungen* at Baireuth, 1876, and accompanied Wagner to London in 1877. From 1897-1911 he was conductor of the Hallé Orchestra, Manchester. He died at Baireuth, Dec. 5, 1916.

RICHTER, JOHANN PAUL FRIEDRICH (1763-1825). German author and humorist, often spoken of as Jean Paul. He was born March 21, 1763, at Wunsiedel, Bavaria. After studying theology at Leipzig, he turned to literature, and won fame in 1795 with his *Hesperus*.



Johann Paul Richter,
German author



Richmond, Yorkshire. Ruins of the Norman castle and the bridge over the river Swale
Frith

Another of his earlier works was *Blumen, Frucht und Dornenstücke* (Flower, Fruit and Thorn Pieces), 1796-97. His later works included *Titan*, 1800-3, a romance which some critics, as did the author, regard as his greatest work; *Fliegjahre* (Wild Oats), 1804-5, new ed. 1901; and *Schmelzle's Reise* (Schmelzle's Journey), 1809. He died Nov. 14, 1825.

RICHTHOFEN, MANFRED VON (1892-1918). German airman. Born May 2, 1892, he became a cavalry officer. During the Great War he commanded the 11th air chasing squadron or "circus" and claimed to have brought down the British airman, Major Hawker, V.C. He won his 80th victory in April, 1918, in which

month he received the order of the Red Eagle with crown and swords. He was shot down behind the British lines near the Somme on April 21, 1918. In his



Baron von Richthofen, German airman

Memoirs, published in August, 1917, he made interesting references to British airmen, crediting them with skill and daring.

RICKETS or **RACHITIS**. Disease of infants resulting from faulty diet and characterised by impairment of nutrition. Rickets is most prevalent among the poor children of large towns. Bad housing, over-

crowding, insufficiency of food, and prolonged lactation are conditions conducive to the development of the disease, but the essential cause is the absence or insufficiency of certain important constituents in the food called vitamins.

The symptoms begin insidiously, and are generally noticed about the sixth to ninth month. The child shows a disinclination to walk, and is listless and peevish. There is a general soreness of the body, and as the disease progresses, changes in the bones become manifest. Common complications are bronchial catarrh, pneumonia, bronchitis, and laryngismus stridulus. If the disease is not treated in the early stages death may occur from complications, or, when adult life is reached, there may be serious and permanent deformity.

RICKETTS, CHARLES (b. 1866). British artist. Born in Geneva, Oct. 2, 1866, he started the Vale Press and did much designing for the theatre. In 1922 he was made A.R.A., and in 1928 R.A. Of his works, *The Death of Don Juan* is in the Tate Gallery, London, and *Montezuma* is in Manchester. His books include one on Titian.

RICKMANSWORTH. Urban dist. of Hertfordshire. It stands at the junction of the rivers Chess and Colne, 4 m. from Watford on the L.N.E. and Metropolitan Rlys. and the Grand Union Canal. There are brewing and printing industries. Near is Moor Park (q.v.), now a residential district. Pop. 8,512.

RICKSHAW or **JINRIKSHA** (Jap. jin, a man; riki, strength; sha, a car). Japanese vehicle, seating one person and drawn by a man. It consists of a light chair mounted on two large wheels and generally provided with a movable hood. The coolie who draws it runs between the shafts. It has been introduced elsewhere. See illus. p. 791.

RIDEAU. Lake, river, and canal of Ontario, Canada. The lake is 42 m. S.W. of Ottawa, and discharges into the river, which joins the Ottawa at Ottawa. The canal, 126 m. long and built 1826-34 for military purposes, connects Ottawa with Kingston, on Lake Ontario.

RIDGE, WILLIAM PETT (1860-1930). British novelist. He was born near Canterbury. His work, which is characterised by a humorous and sympathetic understanding of the lower and lower middle class life of London, includes *Mord Emly*, 1898; *Erb*, 1903; *The Wickhamses*, 1906; *Name of Garland*, 1907; *Thanks to Sanderson*, 1911; *The Kennedy People*, 1915; *The Bustling Hours*, 1919; *Ernest Escaping*, 1926, and *Affectionate Regards*, 1929. In 1923 appeared *A Storyteller's Forty Years* in London. He died Sept. 29, 1930.

RIDING. Term applied to horsemanship. It may be broadly defined as getting the best work out of a horse for a given object, with a minimum of distress to horse and rider.

In England one will best conform to the national school of riding by carefully observing the old jingle: "Your head and your heart

keep up. Your hands and your heels keep down. Your knees keep close to your horse's sides, and your elbows close to your own." Women and girls have forsaken the side saddle in order to ride like men.

RIDING. Literally, the third part, a corruption of thridding. Of Scandinavian origin, the word was brought by the Danes into England, and just before and after the Norman Conquest a number of counties were divided into ridings with riding courts. Yorkshire is divided into three ridings, East, North, West. Each is an administrative co. with its own lord-lieutenant and council.

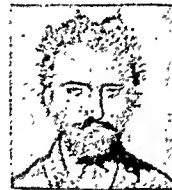
RIDLEY, MATTHEW WHITE RIDLEY, 1st Viscount (1842-1904). British politician. Born in London, July 25, 1842, son of Sir

Matthew White Ridley of Blagdon Hall, Northumberland, he was educated at Harrow and Balliol College, Oxford. Entering Parliament as a Conservative in 1868, he was under-secretary to the home office, 1878-80; financial secretary to the treasury, 1885, and home secretary, 1895-1900, when he retired and was made a viscount. He died at Blagdon, Nov. 28, 1904. He did much to develop the port of Blyth.

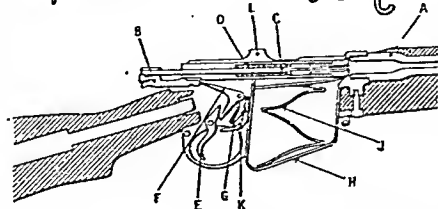
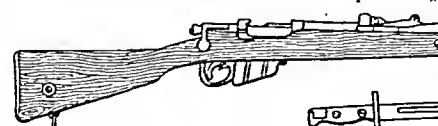
RIDLEY, NICHOLAS (c. 1500-55). English prelate and reformer. Born in Northumberland, and educated at Pembroke Hall, Cambridge, he was canon of Canterbury, 1541, canon of Westminster, 1545, bishop of Rochester, 1547, and bishop of London, 1550. He helped to prepare the first prayer book of 1548, and to found S. Thomas's Hospital and Bethlehem (Bedlam) Hospital. When Edward VI died he sided with Lady Jane Grey, and was committed to the Tower by Mary. In 1554 he was condemned for heresy, and, with Latimer, was burnt at Oxford, Oct. 16, 1555. See Latimer, H.

RIEL, LOUIS (1844-85). Canadian rebel. Born at St. Boniface, Quebec, Oct. 23, 1844, the son of another Louis Riel, he came

to the front as leader of those who opposed the transference of the Hudson Bay territories to the Dominion. The Red River Expedition,



Louis Riel, Canadian rebel



Rifle. Diagram of Lee-Enfield mechanism. Magazine, H, holds 10 cartridges. The bolt being open, a cartridge is pressed up by spring, J, and pushed into barrel, A, as bolt moves forward. Simultaneously, through cocking piece, B, and sear, F, the rifle is cocked ready for firing. When trigger, E, is pulled, striker, C, forced forward by spring, D, fires cartridge. Withdrawing bolt ejects spent cartridge. G is trigger spring; K, magazine release catch, and L, the charger guide.

Above, rifle and bayonet

under Wolseley, 1870, crushed the movement. Riel escaped, and in 1873 was elected a member of the Dominion Parliament. He was expelled, again elected, and then outlawed. In 1885 he was asked by the half-breeds to champion their cause; a rebellion ensued, and that having been crushed, Riel surrendered. He was found guilty of treason and was hanged at Regina, Nov. 16, 1885.

RIENZI, COLA DI (c. 1312-54). Roman patriot. The son of an innkeeper, he became a notary. Embittered by the death of his brother, who had been murdered by a patrician, Rienzi threw all his energies into the cause of the people. In May, 1347, he was proclaimed tribune, but after a few temporary successes he was crushed in the ensuing

December, and fled. In 1354, after many vicissitudes, Rienzi was sent as senator to Rome by Innocent VI, but he had lost his popularity, and while attempting to quell a riot he was killed, Oct. 8, 1354. Bulwer Lytton wrote a novel, and Wagner based an opera on his life-story.

RIEVAULX. Village of Yorkshire (N.R.). On the Rye, its name a corrup-

tion of Rye Vale, it is famous for the ruins of its abbey, founded in 1130 and the oldest Cistercian house in Yorkshire.

RIF or **ER-RIF**. Mountainous dist. in N. Morocco, bordering upon the Mediterranean. The mountains extend for about 180 m. from the W. frontiers of Algeria to the Jebel Hassan, S.W. of Tetuan, whence a N spur, known as the Sierra de Bullones, runs towards Ceuta and terminates in the Jebel Musa. The country is within the Spanish zone. See Morocco.

RIFLE. Firearm of the musket type, with a grooved barrel which causes the bullet to rotate during flight and so increase the accuracy of fire. The invention of rifled firearms occurred about 1500, but the military weapon of to-day is largely the product of 19th century invention, noteworthy stages in which have been in the making of new bullets and the introduction of breech-loading, smokeless powder, and the magazine.

Examples of development in the rifle are found in the Prussian needle gun, 1841, the French chassepot, 1866, the American Winchester repeating rifle of 1867, the British Enfield, converted by the Snider breechlock, the Martini-Henry, 1871, the German Mauser of 1871-84, the French Lebel, 1885, the Austrian Mannlicher, 1886, and the .303-in. British Lee-Enfield rifle of 1888. Now all military rifles are between .256 and .315 inch.

About 1900 a shorter weapon was introduced by Switzerland, Great Britain, and the U.S.A. The next development was the pointed bullet of 1905. Muzzle velocities are about 2,900 ft. per second. In 1928 a prize offered by the British Government for a self-loading rifle was won by the B.S.A. Thompson, the invention of General G. Thompson, of the U.S.A. army, and made by the British Small Arms Co. It can fire, so it is claimed, 35 shots a minute.

Sporting rifles are made in much the same form as sporting shot-guns with bores from .360 to .600 in. Most of them fire a short bullet and employ smokeless powder. There is now a wide choice of magazine sporting rifles similar to the military types.

A National Rifle Association was founded in London in 1859 to promote rifle shooting. Its meetings were held on Wimbledon Common till 1890. They are now held at Bisley (q.v.).

RIFLE BIRD OR **RIFLEMAN** (*Ptiloris paradis*). Genus of birds of paradise found in Australasia and New Guinea. It has purplish-black plumage with green and bronze reflections, the throat being covered by a shield of feathers of a metallic lustre.

RIFLE BRIGADE. Regiment of the British army. Raised in 1800, this regiment has taken part, with distinction in most of the wars engaged in by Britain since that date. The regiment had, in addition to its regular battalions, a number of service and territorial battalions in the Great War, in which it gained 10 V.C.'s, 206 D.C.M.'s, 9 M.C.'s, 914 M.M.'s. Its death roll was 11,245, and to perpetuate the memory of the fallen a memorial has been erected at Winchester, where is the regimental depot.

RIFLE CORPS, KING'S ROYAL. Regiment of the British army, known also as the 60th Rifles. Formerly the 60th Foot, this regiment was raised in 1755, and took a leading share in the campaigns in America and in all Wellington's campaigns down to 1814. In the Great War it had six regular and special reserve battalions, and about 20 service battalions. In Dec., 1920, the name of the regiment was altered to The King's Royal Rifles, but in March, 1921, it reverted to its previous title. The depot is at Winchester.

RIFT VALLEY. Type of valley produced by the sinking of a crustal block between two parallel faults. The Red Sea occupies part of a rift valley, which extends from the valley of the Jordan to Lake Nyasa, in Central Africa. Glenmore and the Central Lowlands of Scotland are also examples of this type of valley.

RIGA. Baltic seaport and capital of Latvia. Founded in 1201, it stands on the Dvina, 9 m. from its mouth.

The city lies on both banks of the river, the old town being on its right. In it are the old cathedral and newer ones for the Greek and Roman Catholic faiths. It also contains some old churches, the castle, now used by the president of the republic, and buildings for the legislature and the government departments. A university has been founded. Riga is a railway centre and has a shipping trade, as well as a number of manufacturing industries. Pop. 339,000. See Latvia.

The gulf of Riga is a large shallow opening of the Baltic Sea. It is 90 m. long and 60 broad, and its chief affluent is the Dvina.

RIGAUD, HYACINTHE (1659-1743). French painter. Born at Perpignan, he was admitted to the Academy as a portraitist in 1687, and qualified as an historical painter in 1700. Louis XIV, Philip V of Spain, Charles XII of

Sweden Augustus II and Augustus III of Poland were among his sitters, while he also portrayed many eminent artists and litterateurs of his time.

RIGHT. In political speech, the party or section of a party holding views of a conservative or moderate character as opposed to the more extreme ones of the left. Its use in this sense arose in France during the Revolution. When the National Assembly formed itself at Versailles in 1789, the moderate men, quite by accident, found seats on the right of the hall, and the extremists on the left. This arrangement persisted.

RIGHT OF WAY. In English law, a form of easement involving the right to pass over land in the possession of others. By the Prescription Act of 1832 it is enacted that uninterrupted enjoyment of a right of way for 40 years is an indefeasible right, on condition that it is proved by user down to the time of the commencement of the action, unless the consent in writing of the owner has been obtained to the enjoyment of the right. By the same Act "no claim by custom, prescription, or grant, to any way or other easement... which has been enjoyed twenty years without interruption shall be defeated by showing the commencement of the right within the time of legal memory." A private right of way across a particular piece of land may be claimed by immemorial usage, or be granted to an individual by special permission.

RIGI. Mountain mass of central Switzerland. It rises between the lakes of Lucerne, Zug, and Lowerz, and is mostly in the canton of Schwyz. It is 35 m. in circuit and has an alt. of 5,906 ft. The summit commands a magnificent panorama of the snow-clad Alps, the Jura, the Vosges, the Black Forest, and parts of Württemberg and Bavaria.

RIG-VEDA (Sanskrit, praise-song). Name of the oldest section of the Vedas (q.v.). It is a collection of 1,017 hymns addressed to Indra, Agni, Varuna, Soma, the Maruts and other nature gods. The compilation probably dates from about 1000 B.C., but the hymns themselves, to which many authors' names are traditionally appended, may be from 1,000 to 500 years older, and are the oldest literature in any Indo-European language. More than 10,000 verses in all, in a great variety of metres, they were composed in archaic Sanskrit, and handed down by word of mouth for many generations. Taken as a whole, they throw much light on the social life and ideas of the primitive Aryan communities, which were passing from the pastoral to the agricultural stage of culture.

RIMINI. City of Italy, in the prov. of Forlì. The ancient Ariminum, it stands on the Marecchia, 69 m. by rly. S.E. of Bologna. Successively Umbrian and Etruscan, the city fell to the Romans in 268 B.C. It has a triumphal arch to Augustus, a Roman bridge, and ruins of an amphitheatre. A monument indicates the spot where Caesar addressed his troops after crossing the Rubicon. The castle of the Malatestas is now used as a prison. The Palazzo Ruffo was the scene of the assassination of Francesca da Rimini in 1285. On the shore is a sea-

bathing station. There are extensive fisheries. Pop. 61,042. See Francesca.

RIMMON. Syrian deity worshipped at Damascus. His temple, the house of Rimmon (2 Kings 5, 18), probably contained the altar which Ahaz reproduced at Jerusalem (2 Kings 16). Alternatively called Hadad, he is identifiable with the Babylonian thunder god Ramman and the Assyrian Adad.

RINDERPEST (Ger. cattle plague). Highly contagious and fatal disease of cattle and other ruminating animals. It is indigenous in India, China, Russia, Tibet, and common in S. Africa, but has not been found in Great Britain since 1877. It arises from a specific contagion, and it is believed that the infection enters the body of the animal through the mouth or nostrils, and thence spreads to all the organs. It is a fever, with very high temperature, and is almost invariably fatal, death following in from four to seven days from the first attack. No cure is known.

RING (A.S. hring, circle). Circular band, usually of metal, and frequently set with precious stones, worn on the fingers. In ancient Rome a ring was given as a pledge of betrothal, and this custom may still be traced in the practice of giving a gem-ring when a marriage engagement is agreed upon. Marriage rings were adopted by the Church from the pagan custom of placing a ring on the bride's finger, as a symbol of possession.

Wedding rings have nearly always retained the plain circle form in use to-day, with the exception of Jewish marriage rings, which are heavy, elaborately carved, broad bands with inscriptions. A ring, the "marriage ring of England," is used in the coronation ceremony. The Doge of Venice wore a ring of office, and this he cast into the Adriatic Sea on Ascension Day of each year as a token of the marriage of the republic to the sea. Mourning rings sometimes have hair of the deceased plaited or formed into conventional designs, placed under crystals or white sapphires; others are enamelled black, and bear portraits, emblems, or inscriptions. Ecclesiastical rings were early worn on the first finger of the right hand, then on the third of the left, the marriage finger, because it is supposed to communicate direct to the heart by an artery.

Another kind of ring is the signet ring. On it was engraved or carved a symbol, or symbols, peculiar to its owner so that he could use it for making an impression in wax or clay, equivalent to a signature. The rings mentioned in the Bible are of this type.

RING MONEY. Primitive form of metallic currency used in ancient Egypt, Gaul, Ireland, Norway, etc., and still used in some parts of Africa. It arose from, and is often indistinguishable from, golden articles of adornment worn by barbaric peoples.

RINGBONE. Disease of horses, a cause of lameness. It results from inflammation of the periosteal covering of the bone below the fetlock. It is usually set up by a blow, a kick, or some similar accidental cause. The seat of the disease is usually the short pastern bone known as the "corona." Ringbone is commonest in heavy horses or animals with upright pastern, but is rare in bloodstock. In all cases special shoeing is essential.

Ring Dove (*Columba palumbus*). Name which is sometimes given to the common wood pigeon. See Pigeon.



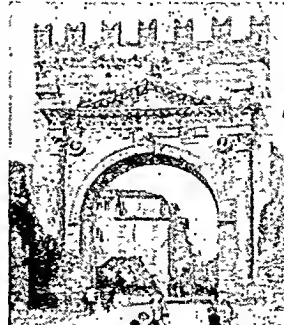
Rifle Brigade badge



King's Royal Rifle Corps badge



Riga, Latvia. Greek Orthodox cathedral, built 1877-84



Rimini, Italy. Triumphal arch of Augustus, erected B.C. 27

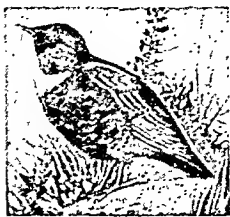


Ring. Gold signet engraved with coat of arms
Pict. & Albert Mus. S. Kensington



Ring Money. Modern piece from Africa

RING OUZEL (*Turdus torquatus*) or **MOUNTAIN BLACKBIRD** European song-bird of the thrush family. Its feathers are black with a narrow edging of greyish white, and it has a white patch on the throat. It arrives in England in April and breeds in a few districts in Devonshire, Derbyshire, and the N., nesting often in a tuft of heather.



Ring Ouzel, European bird of the thrush family

Ring Snake. Alternative name for the common non-poisonous grass snake (q.v.).

RINGWOOD. Market town of Hampshire. It stands on the Avon, 24 m. from Southampton on the S.R. At the end of the New Forest, it is a tourist centre and is noted for its ale. Woollen gloves are manufactured. Ringwood is said to have been founded by the Romans as a military post. Market day, Wed. Pop. 5,131.

RINGWORM or **TINEA.** Affection of the skin due to the growth of a fungus. Common ringworm is most often seen in children between 5 and 15. It occurs frequently on the scalp, starting as a small, scaly spot, which gradually enlarges and becomes almost denuded of hair. The disease may last for years if not treated and is contagious.

RIO DE JANEIRO (São Sebastião do Rio de Janeiro). Federal capital of the United States of Brazil. It lies on the W. shore just inside the entrance to the bay of Guanabara. The name commemorates its discovery on Jan. 1, 1502. There is, however, no river of that name, the bay being a wide lagoon fed by small streams from the surrounding mountains. The main artery of the city is the Avenida Rio Branco. It is lined with splendid modern buildings, and continued along the shore of the bay, past the residential suburbs of Botafogo and Gloria, by the Avenida Beira Mar, which is constructed with a sea-wall of granite and laid out in gardens and walks to an extent of 4 m.

Rio de Janeiro has many fine ancient buildings, e.g. the Candelaria church, while the Monroe palace, national library, and national museum are excellent specimens of modern architecture. The Carioca aqueduct, in which the water of Rio is brought, extends from the mountains of Santa Thereza to those of Santo Antonio. The hospital, Santa Casa da Misericórdia, is one of the largest institutions in the world. There are schools of medicine and law, a polytechnic school, conservatory of music, and various academies for art, science, and commerce. In the newer section of the city the streets are fairly broad and lit by electric light. There are many squares and public places. Extensive harbours have been constructed. The principal export is coffee; imports are cereals, coal, and manufactured goods. It is estimated that the population of the Federal District, which is administratively co-extensive with Rio, is 1,300,000.

Rio de Janeiro was discovered by the Portuguese and Italian navigators Gonçalves and Vespucci in 1502. It is governed by a

prefect appointed by the government and assisted by a municipal council.

RIO DE ORO (Sp. river of gold) Spanish colony along the coast of W. Africa, S. of Morocco. The country forms an E. extension of the Sahara and is administered by the governor of the Canary Islands. Villa Cisneros is the capital. Its area is 65,500 sq. m. Pop. 253.

RIO GRANDE. Name of two rivers of Brazil. One rises in the mts. on the W. border of Bahia State, and joins the São Francisco at Barra. From the N. it receives several affluents. Its length is about 300 m. The other unites with the Paranaíba to form the Paraná after a course of about 440 m.

The Rio Grande del Norte or Rio Bravo del Norte is the name of a river in the U.S.A. It rises in Colorado, and flows to the gulf of Mexico. Its length is 1,800 m.

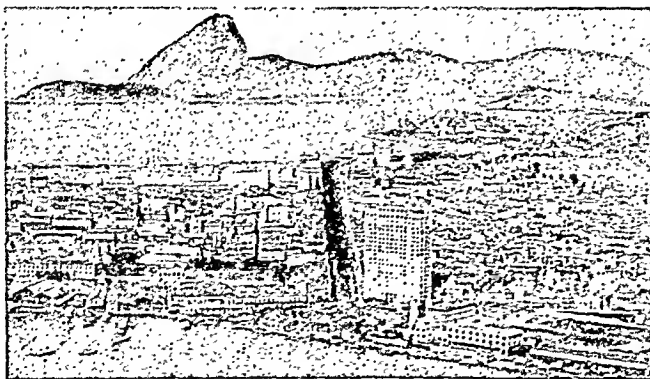
RIO TINTO, MINAS DE (Sp. coloured river mines). Town of Spain, in the prov. of Huelva. It stands near the source of the river Tinto, 52 m. by rly. N. of Huelva, and is the centre of one of the most celebrated copper-mining regions of the world. Pop. 9,669.

RIPLEY. Urban dist. and market town of Derbyshire. It is 10 m. from Derby, on the L.M.S. Rly. There are some textile manufactures, and around are coal mines and iron works. Market day, Sat. Pop. 13,298

RIPLEY. Parish of Surrey. It is 5 m. from Woking, on the main road from London to Portsmouth, several miles of which are sometimes called the Ripley Road. Pop. 2,847.

RIPLEY. Village of Yorkshire (W.R.). It stands on the Nidd, 3 m. from Harrogate, on the L.N.E.R. Ripley Castle has been modernised. Pop. 231.

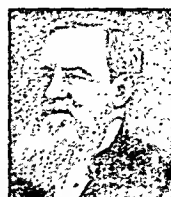
RIPON. City and mun. bor. of Yorkshire (W.R.). On the Ure, it is 24 m. from Leeds, on the L.N.E.R. The chief building is the cathedral, which replaced an earlier one, of which the crypt remains. Its erection occupied about three centuries, and consequently it displays all styles of architecture, from the Norman apse through the Transitional transcripts to the Perpendicular work in the choir and elsewhere. It was restored in 1862-72. Ripon is a spa, having baths and a pump room. It has a trade in agricultural produce and manufactures of leather goods. Near are Studley Royal and Fountains Abbey. Pop. 8,400.



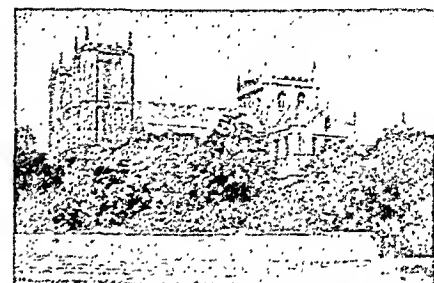
Rio de Janeiro. Air view of the city, showing the famous Avenida Rio Branco running from the docks on the north to Botafogo Bay on the south
Aircraft Operating Co., Ltd.

RIPON, FREDERICK JOHN ROBINSON, 1ST EARL OF (1782-1839). British statesman. Born in London, Oct. 30, 1782, the second son of the second Baron Grantham, he was educated at Harrow and Cambridge. He early took up a political career, entered Parliament in 1806, and filled many public offices. He was created Viscount Goderich in 1827 and earl of Ripon in 1833. He died Jan. 28, 1839.

RIPON, GEORGE FREDERICK SAMUEL ROBINSON, 1ST MARQUESS OF (1827-1909). British statesman. Born Oct. 24, 1827, he was the son of Viscount Goderich, later earl of Ripon. He sat in the Commons 1852-59, when he succeeded his father as earl of Ripon. In 1859 he became under-secretary for war, in 1863 secretary for war, in 1866 secretary for India, and in 1868 lord president of the council. He was the chairman of the commission appointed to settle the Alabama dispute, and was created a marquess in 1871. He was governor-general of India from 1880 to 1884. In 1886 he was first lord of the admiralty: from 1892-95 he was secretary for the colonies, and from 1905-8 lord privy seal and Liberal leader in the Lords. He retired in 1908, and died at Studley Royal, July 9, 1909. His son, Frederick



Marquess of Ripon, British statesman



Ripon, Yorkshire. View of the finely proportioned cathedral, showing the two west towers and one central tower
Dixon Scott

(1852-1923), succeeded him, and on his death, Sept. 22, 1923, the title became extinct.

RIPON FALLS. Falls on the river Nile. Discovered by Speke on July 23, 1862, they consist of three distinct falls near the beginning of the Nile where it issues from Victoria Nyanza.

RISCA. Urban dist. of Monmouthshire. It stands on the Ebbw, with a station on the G.W.R. There are chemical and tinplate works, and around are coal mines. Pop. 16,746.

Risdon. Town of Tasmania. Near Hobart, it has one of the largest zinc-producing plants in the world, run by water power.

RISHTON. Urban dist. of Lancashire. It is 3 m. from Blackburn, on the L.M.S. Rly. Paper and fire-bricks are made, and in the vicinity are coal mines, cotton mills, and stone quarries. Pop. 7,016.

RISTORI, ADELAIDE (1822-1906). Italian actress. Born at Cividale del Friuli, Jan. 30, 1822, she made her first success in Rome in 1849 as the heroine of Alfieri's *Myrrha*. In 1855 she was favourably received in Paris, and she made her London début as Medea at The Lyceum, June 4, 1856. She died Oct. 9, 1906.

RITCHIE, CHARLES THOMSON RITCHIE, 1ST BARON (1838-1906). British politician. Born at Dundee, Nov. 19, 1838, the son of a merchant, he was educated at the City of London School. He entered Parliament in 1874, and as president of the local government board 1886-92 was responsible for the Act creating county councils. Later, as president of the board of trade he was responsible for initiating the work of that department in settling labour disputes. In 1900 Ritchie became home secretary, and 1902 chancellor of the exchequer. In 1905 he was made a baron, and he died Jan. 9, 1906. His son Charles, 2nd baron (h. 1866), became chairman of the Port of London authority in 1925.

RITE (Lat. ritus, custom). Religious act or ceremony performed according to established custom or precept. The term is also used of the general body of services used by a church or group of churches. In the Roman Catholic Church the congregation of rites regulates the general uniformity of practice in matters of divine worship.

RITUALISM. System of conducting worship according to a ritual or certain prescribed forms or ceremonies. It has come to be used, however, usually in a derogatory sense, of the High Church or Tractarian movement in the Church of England. The Oxford movement led many clergymen to pay greater attention to ceremonial in worship, and altar lights, vestments, incense, etc., were introduced in many churches. These were authorised, it was urged, by the ornaments rubric of the Prayer Book, but many churchmen objected to them, and in several cases legal proceedings were taken. A royal commission inquired into this subject in 1867, and in 1874 the Public Worship Regulation Act was passed. In 1906 a royal commission on ecclesiastical discipline made further recommendations for checking excessive ritual. See Lincoln Judgement; Oxford Movement.

RIVER. Channel by which the rainfall on the land reaches the sea or basins of inland drainage. A river system or drainage area comprises the main river and its tributaries. The line bounding the drainage area is called the water divide or watershed.

Some rivers, especially those which flow through rainless areas and receive their water only from rains near their sources, are intermittent, and by excessive evaporation may cease to flow in their lower reaches. Most rivers have seasonal periods of flood, due either to heavy rainfall or to the melting of snows at their sources. Rivers in high latitudes freeze in winter, but an undercurrent generally remains in motion. When such rivers break up in spring there are heavy floods. In the N. hemisphere rivers flowing polewards are deflected by the rotation of the earth, and press against their E. banks; those flowing equatorwards press against their W. banks. The banks of a river are termed right and left, applied in the direction of flow. Drainage follows the natural slope of the ground.

Among the longest rivers of the world are the Nile, 4,400 m. long, the Mississippi-Missouri, 5,431 m., the Amazon, 3,550 m., the Yang-tse, 3,500 m., the Ob-Irtish, 3,500 m., and the Amur, 2,920 m. (from source of the Argun).

RIVER HOG (Potamochoerus). Species of ungulate mammal found in W. Africa. It has bright red bristles, and is often known as the red river hog. It occurs in herds in swampy parts of forests, usually near rivers, and feeds upon plants and roots, often doing great damage in the native plantations.

RIVERINA. Dist. of Australia, in New South Wales. It includes all the counties situated between the Lachlan and Murray rivers W. of the meridian of Wagga-Wagga. Entirely a lowland with an average rainfall of 20 ins., and possibilities of irrigation from the Murrumbidgee and the boundary rivers, and comprising a small artesian basin which yields subterranean water through bores, the Riverina is an excellent wheat-growing area and very suitable for sheep rearing. The Murray red gum is localised here.

River Plate. Combined estuary of the Uruguay and Paraná rivers in S. America.

RIVIERA. Health resort on the Ligurian Sea, extending from Fréjus to Leghorn. Backed by the S. slopes of the Maritime and Ligurian Alps and the Ligurian Apennines, it stretches for 140 m. E. and W. of Genoa as the Riviera di Levante and Riviera di Ponente respectively.

In the W. the French littoral surrounds the principality of Monaco; here are Nice, Antibes, Hyères, Villefranche, and Monte Carlo. In the Italian section to the E. are Savona, Genoa and Spezia. The indigenous flora has been so enriched with imported plants that there are specimens of all the most notable plants of the world. The season extends from November to May. Cannes, Mentone, Grasse, San Remo, Rapallo, Bordighera are other fashionable centres, but there are many others off the main roads. See Cannes; Nice.

RIVIERE, BRITON (1840-1920) British painter. Born in London, of Huguenot descent, on Aug. 14, 1840, he was educated at Cheltenham and Oxford. Riviere established his reputation firmly by his Academy picture, *Charity*, in 1870. He became an animal painter of remarkable skill, and among his notable successes were *Circé*, 1871; *Daniel*, 1872; *Sympathy*, 1878; *Actaeon*, 1884; *Adonis Wounded*, 1887. Examples of his work are to be seen in the Tate Gallery, many provincial galleries, and at that of the Guildhall, London. Elected A.R.A. in 1878, Riviere became R.A. in 1881, and died April 20, 1920.

RIVIÈRE DU LOUP. River of Quebec, Canada. It rises in the highlands of the prov. and falls into the St. Lawrence about midway between the cities of Montreal and Quebec.

RIZZIO or **Riccio**, **DAVID** (c. 1533-66). Italian musician, favourite of Mary Queen of Scots. A native of Pancalieri, near Turin, he attracted the attention of Mary, who gave him an appointment, first as a singer, and then as secretary. His influence at court gradually increased, and by about 1564 he was one of the most powerful persons in the kingdom. This made the nobles jealous, while Darnley believed that the queen and her servant were lovers. The outcome was a plan to kill Rizzio, and the deed was carried out, March 9, 1566, at Holyrood. See Holyrood; Mary Queen of Scots.

ROACH (*Leuciscus rutilus*). Common freshwater fish. It is found in nearly all the British rivers, and in most European rivers N. of the Alps. It is of silvery colour, with red fins in the adult. It is a popular fish with the angler, as its wary habits call for considerable skill to take adult specimens, but its qualities as a table fish are poor. See illus. above.

ROAD. Public highway for traffic. The Romans were the first great road makers, but road making decayed with the fall of the Roman Empire. Already, when the Saxons came to Britain, the roads had largely fallen into disuse, and it was not until the reign of George III that any serious attempt was made

to deal with communications. This was the era of Turnpike Acts, providing for the maintenance and remodelling of roads, the cost to be met by tolls.

In France, Trésaguet adopted the Roman system of putting in a solid foundation of large stones to support the successive upper layers of smaller material. In England Macadam early in the 19th century introduced his system of covering roads with layers of hard stone broken into cubical pieces, which under pressure would jam and become consolidated. His successor, James Telford, who remodelled the great London-Holyhead road, followed Trésaguet in insisting on the importance of a strong foundation, but his surfacing method differed from that of Macadam.

A substantially made modern highway is constructed in a trench excavated to a depth of about 18 inches and bottom-rolled. In the Telford foundation the earth is covered with large stones closely packed and firmly wedged. Then follows a layer of well-rolled broken stone, thicker at the centre than at the edges. The surfacing is usually two layers of two-inch "macadam," followed by a dressing of chips or gravel. In the strictly macadamised form the foundation consists of layers of stones larger than those for the top, and all the material is consolidated by the roller as put in. Macadam entirely deprecated the use of water in road making, but in the modern methods of steam-rolling water is freely used.

The concrete road is an entirely modern method of road construction, designed for heavy traffic. It is made by placing on a foundation of concrete a continuous web of steel mesh, upon which any description of surface favoured by individual surveyors, or necessitated by local conditions, is placed. The main traffic arteries of cities are paved with asphalt (q.v.), wood blocks, or granite blocks, on a foundation of concrete. These pavements, though expensive, are durable.

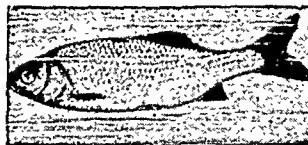
Since the Great War a number of new main roads have been constructed to provide for the increasing amount of motor traffic. Some of these have a carriage way 30 ft. wide, which allows comfortably for the movement of three lines of traffic. In Great Britain there are about 179,000 miles of public roads, of which 25,000 miles are in Scotland. They have been classified by the ministry of transport, 25,528 miles being graded as Class I and 15,747 included in Class II.

ROAD CONTROL. There is a roads department of the ministry of transport, whose offices are at Whitehall Gardens, London, S.W.1. It took the place, in 1919, of the road board set up in 1909 to construct new roads and to improve existing ones. Under the Local Government Act, 1929, county councils became the highway authorities for all roads in rural districts and for all Class I and Class II roads outside the county and metropolitan boroughs. There is a special road fund derived from motor licence duties, and administered by the ministry of transport.

The use of the roads by motor vehicles was the subject of an important Act of Parliament passed in 1930. This abolished the speed limit and increased the penalties for dangerous driving.

ROANOKE. City of Virginia, U.S.A. It stands on Roanoke river, 55 m. W. of Lynchburg. There are rly. workshops, flour mills, bridge works, and agricultural implement, twine, motor vehicle, and hydraulic factories. Pop. 58,208.

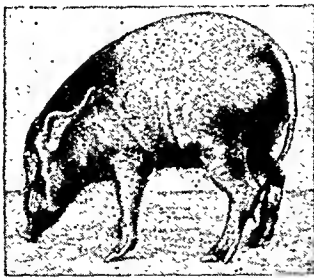
The Roanoke river flows through Virginia and N. Carolina to Albemarle Sound. Including the Staunton, it is 450 m. long.



Roach. Fish common in British and N. European rivers. See below W. S. Berridge, F.Z.S.



David Rizzio, Italian musician



River Hog. Species of pig found in herds in the forests of W. Africa

ROARING. Complaint affecting horses. Roaring or whistling in a horse may result from catarrhal affections of the throat, but the fault more usually arises from defects in the air passages, and is in such case hereditary. It is particularly a failure of the thoroughbred horse, more especially those of Barb stock. There is no cure, but a tracheotomy tube inserted in the throat prevents the sound. Judicious dieting is useful.

ROARING FORTIES. Part of the S. oceans between 40° and 50° S lat. Here the sailor encounters the prevalent and frequently boisterous W. winds of the S. hemisphere, the Brave West Winds.

ROBERT. Name of three kings of Scotland. Robert I was the official designation of the ruler who is better known as Robert Bruce. See Bruce, Robert.

Robert II (1316-90) was a grandson of Robert the Bruce, his mother being the king's daughter; his father was Walter the steward of Scotland and, having taken this for a surname, Robert was the first of the line of Steward or Stuart kings. When only two years old, Parliament chose him as Bruce's successor, but the birth of a son to Bruce in 1324 changed the position. This son, David II, became king in 1329, and from then until 1371 Robert was one of the chief men of his kingdom. When David died childless in 1371, Robert, then an old man, succeeded. He died May 13, 1390.

His son, Robert III (c. 1340-1406), by his mistress, Elizabeth Mure, was declared legitimate and made earl of Carrick. As a ruler he was incompetent, and the kingdom was governed by relatives. He died April 4, 1406.

ROBERT. Name of two dukes of Normandy. The first, known as Robert the Devil, was duke from 1028 to 1033. He was the father of William the Conqueror. The second was William's eldest son, who became duke on his father's death in 1087. In 1106, having been on crusade, he was defeated in battle by his brother Henry I, and passed the rest of his life in prison, dying at Cardiff in Feb., 1134.

ROBERTS, FREDERICK SLEIGH ROBERTS, EARL (1832-1914). British soldier. Born Sept. 30, 1832, at Cawnpore, the son of Sir Abraham Roberts, he became second lieutenant in the Bengal Artillery, 1851. During the Mutiny he saw active service at Lucknow and Cawnpore, and was awarded the V.C. In 1863 he was engaged in the Umbeyla expedition, and in 1867 in the Abyssinian campaign. On the outbreak of the Afghan War in 1878, Roberts, as commander of the Punjab Frontier Force, was ordered to invade Afghanistan. In Oct., 1879, he took Kabul, and in 1880 led the famous march from Kabul

to Kandahar, covering 313 miles in 22 days and defeating the Afghans. Commander-in-chief in India, 1885-93, and in Ireland, 1895, he was given the command-in-chief of the army in S. Africa in Dec., 1899.

In Jan., 1901, Roberts, now created earl and field marshal, became commander-in-chief of the British Army. The office was abolished in 1904, and he was retired, becoming president of the National Service League, and advocating the raising of a citizen army. During a short tour of the front in 1914 he caught a chill, which on Nov. 14 proved fatal. He was buried in S. Paul's Cathedral. His only son, Frederick Hugh S. Roberts, a lieutenant in the artillery,

was mortally wounded at Colenso, Dec. 15, 1899, and posthumously awarded the V.C. His elder daughter became Countess Roberts.

The Lord Roberts Memorial Workshops train disabled soldiers and sailors in various handicrafts. The address is 120, Brompton Road, London, S.W.

ROBERTS, ARTHUR (b. 1852). British comedian. Born Sept. 21, 1852, he made his first appearance as a mimic and vocal comedian in 1878. He was successful in the variety halls, until he transferred to the theatrical stage in 1883, establishing a reputation in musical comedy and comic opera. He returned to the music hall stage in 1904.



Arthur Roberts,
British comedian
Claude Harris

ROBERTS, CHARLES GEORGE DOUGLAS (b. 1860). Canadian author. Born near Fredericton, New Brunswick, Jan. 10, 1860, he was educated at the university of New Brunswick. He became a schoolmaster in 1879; edited *The Week*, 1883-84, and was professor at King's College, Nova Scotia, 1885-95. He served in the British army in the Great War. He became known as a prolific writer of verse, essays, and fiction, and especially of tales of animal life in the Canadian wilds.

ROBERTS, JOHN (d. 1880). British billiards player. He was born at Liverpool, and in 1844 became marker at Oldham. He introduced spot-stroke play; and in March, 1862, made the record break, up to then, of 346, which included 55 spot hazards. He held the championship until defeated by his pupil, W. Cook, in 1870. Roberts died in London.

His son, John Roberts, jun. (1847-1919), was born at Manchester, Aug. 15, 1847. For many years he was the most accomplished and attractive billiards player in the world. When playing against E. Diggle, on May 3-4, 1894, he compiled a magnificent spot-barred break of 1,392. Roberts won the professional billiards championship in 1870, against Cook, holding the title against him in 1875, 1877, and 1885, and beat C. Dawson, 18,000 up level, by 1,814, for £200 and the championship in 1899. He died Dec. 23, 1919.

ROBERTS, MORLEY (b. 1857). British novelist. Born in London, Dec. 29, 1857, he was educated at Bedford and Owens College, Manchester. He led a varied and adventurous life in Australia, the U.S.A., etc. His books include *The Western Avernus*, 1887; *Red Earth*, 1894; *The Great Jester*, 1896; *A Son of Empire*, 1899; *The Promotion of the Admiral*, 1903; *The Private Life of Henry Maitland*, supposed to be based on the life of George Gissing, 1912; *Hearts of Women*, 1919; and *On the Old Trail*, 1927.

ROBERTSON, FREDERICK WILLIAM (1816-53). British divine. Born in London, February 3, 1816, Robertson studied first for the law and then for the army. Having given up the idea of a commission, he entered Brasenose College, Oxford, and in 1840 was ordained in the Church of England. In 1847 he was appointed incumbent of a proprietary chapel at Brighton, and there he remained until his death, Aug. 15, 1853.



F. W. Robertson,
British divine

In a few years Robertson, although not popular in the usual sense of that word, made himself one of the most influential preachers of the 19th century, and his sermons are among the few that rank as literature.

ROBERTSON, THOMAS WILLIAM (1829-71). British dramatist. Born at Newark-upon-Trent, Jan. 9, 1829, he began life as an actor, tried journalism, was rejected for the army, and had written several unsuccessful dramas before he achieved success with *David Garrick*, 1864. His other plays include *Society*, 1865; *Ours*, 1866; *Caste*, 1867; and *School*, 1869. *Caste*, his best piece, originally produced by the Bancrofts at The Prince of Wales's, still holds the stage. Robertson had the faculty of creating life-like characters, and his plays reflect accurately the manners of his time. He died in London, Feb. 3, 1871.

ROBERTSON, SIR WILLIAM ROBERT (b. 1860). British soldier. Born at Welbourn, Lincolnshire, he enlisted as a private in the 16th Lancers in 1877. Corporal in 1879, sergeant in 1882, and troop-serjeant-major in 1885, he became second lieutenant in the 3rd Dragoon Guards in 1888. From 1888-96 he served in India as an intelligence officer, receiving the D.S.O. On passing out of the staff college in 1898, he joined the intelligence department at the War Office, and served on the staff in the S. African War.

Robertson went to France in August, 1914, as Q.M.G. of the expeditionary force, and was chief of the staff, Jan.-Dec., 1915. From Dec., 1915, till early in 1918 he was chief of the imperial general staff. He held the Eastern Command, 1918-19, and was commander-in-chief of the British Rhine forces, 1919-20. For his war services Robertson, who had been knighted in 1913, was made a baronet, and received £10,000. In Aug., 1919. He was created a field marshal in 1920.

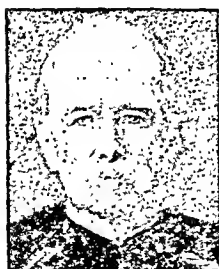
ROBESON CHANNEL. Strait separating N.W. Greenland from N.E. Ellesmere Island, Arctic America. It connects Hall Basin on the S. with Lincoln Sea on the N. It is 50 m. long. See Arctic Exploration.

ROBESPIERRE, MAXIMILIEN MARIE ISIDORE (1758-94). French revolutionist. Born at Arras, May 6, 1758, he was one of the representatives of the Third Estate when the states-general met in 1789. He soon became prominent among the extremists.

Robespierre was elected to the National Convention which met at the end of Sept., 1792, and proclaimed the Republic. In the Convention he was at first, with Danton, leader of the extreme section known as the Mountain, who after the execution of the king, Jan. 21, 1793, entered upon their victorious struggle with the Girondists. Elected July, 1793, to the recently appointed Committee of Public Safety, Robespierre was the person most responsible for the Reign of Terror. From April 5, 1794, he became in effect Dictator. But the Terror grew intolerable; a conspiracy was organized, and on July 27 he was denounced in the Convention. He was arrested, and next day, July 28, the head of him whom Carlyle called the "Sca-



Maximilien Robespierre,
French revolutionist
After Ducreux



Earl Roberts,
British soldier
From the portrait by
G. F. Watts.
Nat. Port. Gall.

to Kandahar, covering 313 miles in 22 days and defeating the Afghans. Commander-in-chief in India, 1885-93, and in Ireland, 1895, he was given the command-in-chief of the army in S. Africa in Dec., 1899.

In Jan., 1901, Roberts, now created earl and field marshal, became commander-in-chief of the British Army. The office was abolished in 1904, and he was retired, becoming president of the National Service League, and advocating the raising of a citizen army. During a short tour of the front in 1914 he caught a chill, which on Nov. 14 proved fatal. He was buried in S. Paul's Cathedral. His only son, Frederick Hugh S. Roberts, a lieutenant in the artillery,

green incorruptible" fell under the guillotine. See French Revolution; Jacobins.

Robespierre is the title of a drama in five acts by Victorien Sardou (q.v.).

ROBEY, GEORGE (b. 1869). Stage name of George Wadde. British comedian. Born Sept. 19, 1869, he made his first appearance on the music-hall stage at the Oxford, in 1891, where he soon acquired a great reputation as a comedian. In 1915 he appeared in the revue, *The Bing Boys are Here*, at the Alhambra, and was later connected with other revues. During the Great War he supported many charitable organizations.



George Robey,
British comedian
Toulham & Banfield

ROBIN (*Erithacus rubecula*). Song-bird of the thrush family. Often called the robin redbreast, it is a native of Europe, W. Asia, and across Africa to the Canaries and Azores. The bright red forehead, face, and breast separated by a blue-grey line from the greenish-brown of the upper parts, make it distinct from all other British birds. Its full bright black eye and long legs are other prominent features. The sexes are alike in colour. The food consists mainly of insects, worms, and spiders, occasional berries, and in winter household scraps. The sweet but limited song of the robin may be heard at all seasons. Many of the birds of the year migrate in autumn.



Robin or Redbreast
W. S. Berridge, F.Z.S.

ROBIN HOOD. Central character in romantic stories told in old English ballads and songs of a robber outlaw head of a band which dwelt in Sherwood Forest. He was a famous bowman, and robbed the rich that he might give to the poor, and is variously said to have been a goodly yeoman and a certain Robert who claimed to be earl of Huntingdon. The ballads and poems concerning Robin Hood were collected by Joseph Ritson in 1795.

ROBIN HOOD'S BAY. Watering place of Yorkshire (N.R.). It stands at the N. end of Robin Hood's Bay, an opening of the North Sea, 6 m. from Whitby, on the L.N.E. Rly. It consists of an old fishing village on the cliffs and a modern part.

ROBINSON, JOHN (c. 1576-1625). English Puritan. Born probably in Nottinghamshire, he was educated at Cambridge. Having been ordained, he worked in Norwich, but his Puritan opinions brought him into disfavour. He joined the separatists, and in 1608, to escape persecution, went to Amsterdam. In 1609 he became pastor of a church at Leiden, where he formed the idea of a Puritan colony in America. In 1620, largely owing to his efforts, the Pilgrim Fathers set sail, but Robinson himself never crossed to them. He died March 1, 1625. See Congregationalism; Pilgrim Fathers.

ROBINSON, LENNOX (b. 1886). Irish dramatist. A son of the Rev. A. C. Robinson, he was born at Douglas, Cork, Oct. 4, 1886. His first play, *The Clancy Name*, was produced at the Abbey Theatre, Dublin, in 1908. From 1910-14 and again 1919-23 he was manager of the Abbey Theatre, and between 1915-25 he was an organizing librarian of the Carnegie Trust. His plays include *The Dreamers*, 1915, *The Whiteheaded Boy*, 1916, *The Lost Leader*, 1918, *The Big House*, 1926, and *The Far Off Hills*. He has also written novels and some short stories.

ROBINSON, MARY (1758-1800). English actress and royal favourite. Born at Bristol, Nov. 27, 1758, she came to London, and made her first appearance as Juliet at Drury Lane, Dec. 10, 1776. On Dec. 3, 1778, she appeared as Perdita to Smith's Leontes in Garrick's adaptation of *The Winter's Tale*, and captured the affections of the prince of Wales, afterwards George IV, who quickly tired of her. She was subsequently the mistress of Charles James Fox, and died in poverty, Dec. 26, 1800.



Mary Robinson,
British actress

ROBINSON, WILLIAM HEATH (b. 1872). British artist. Born May 31, 1872, he studied art in London at the R.A. school, and soon made his mark as an illustrator of books. He was better known, however, by his humorous drawings in *The Sketch* and other British and American periodicals.

ROBINSON, WILLIAM LEEFE (1895-1918). British airman. Born in India, July 14, 1895, he was commissioned from Sandhurst in 1914 and joined the R.F.C. the following year. On the occasion of the Zeppelin raid on London, Sept. 3, 1916, Robinson brought down the first Zeppelin in England, at Cuffley, and received the Victoria Cross. In May, 1917, he was brought down at Donai while flying, and remained a prisoner until Dec. 14, 1918. He died at Stanmore, Dec. 31, 1918.

ROBOT. Automaton or figure of a man or woman that can walk and talk. Its possibility was indicated by Karl Kapek in R.U.R. and other writers, and in 1928 one was shown in London at Maskelyne's Theatre. A steel man, walking and speaking by electricity, was shown at the Royal Horticultural Hall in Dec., 1928, and Mr. R. M. Hamilton invented a Robot bookmaker, a kind of improved totalisator. See Automaton.



W. Leefe Robinson,
British airman

ROB ROY (Gael. red Robert). Popular name for Robert MacGregor (1671-1734), Highland robber. Son of a freebooter, he was brought up at Balquhider, and early made a name for himself by his daring exploits and cattle-stealing raids. After the battle of Sheriffmuir he made various raids on the S. and W. until captured. He soon escaped, and was a fugitive until his pardon in 1727, after which he settled in Balquhider, where he died Dec. 28, 1734. He is the hero of the sixth of the *Waverley* novels, published Dec., 1817.

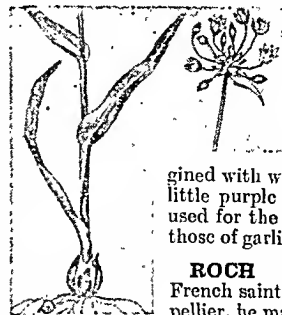
A type of canoe first built by John Macgregor (q.v.) was known as Rob Roy, and used by him on his journeys. Such canoes weigh about 70 lb. See Canoe.

ROBSART, AMY (c. 1532-60). The daughter of Sir John Robsart of Siderstern, Norfolk, she married Robert Dudley, afterwards earl of Leicester (q.v.), at Sheen, June 4, 1550. In 1560 Amy went to Cumnor Place, near Oxford, a house belonging to her husband, and on Sept. 8 was found at the foot of the stairs with her neck broken, and suspicion fell on Dudley. She is the heroine of Scott's novel *Kenilworth*.

ROBSON, THOMAS FREDERICK (1822-64). Stage name of Thomas Robson Brownhill, British actor. After some years in obscure theatres he acquired, in 1853, a sudden reputation for burlesque at the Olympic Theatre, London, of *Macbeth* and *Shylock*. In 1857 he undertook the management of the theatre, appearing with great success in domestic dramas. He died Aug. 12, 1864.

ROC (Arab. rokh). In Oriental legend, a bird of gigantic size. In one of the stories of Sinbad the Sailor, in the Arabian Nights' Entertainments, it is said to feed its young with elephants. It was by tying himself to the leg of a roc that Sinbad was carried safely from the island on which he had been left.

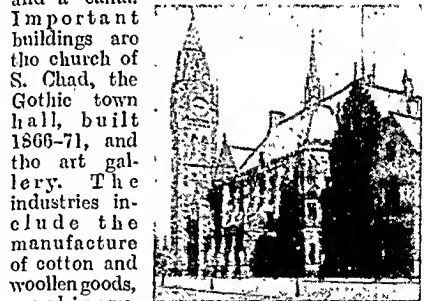
ROCAMBOLE or **SAND LEEK** (*Allium scorodoprasum*). Bulbous herb of the order Liliaceae, native of Europe. It has long, narrow leaves with a central keel down the underside. The tall flower stem ends in a head of small red-purple flowers margined with white; it produces little purple bulbs, which are used for the same purpose as those of garlic.



Rocambole.
Bulb, leaves
and flower

ROCH (c. 1295-1327). French saint. Born at Montpeller, he made a pilgrimage to Rome, after which he devoted himself to the care of the sick in Italy during a great pestilence. Accused as a spy, he died in prison, Aug. 16, 1327. S. Roch, the patron of the plague-stricken, is widely venerated in S. Europe.

ROCHDALE. County borough of Lancashire. It stands on the Roch, 11 m. from Manchester, and is served by the L.M.S. Rly. and a canal. Important buildings are the church of S. Chad, the Gothic town hall, built 1866-71, and the art gallery. The industries include the manufacture of cotton and woollen goods, machinery, and asbestos.



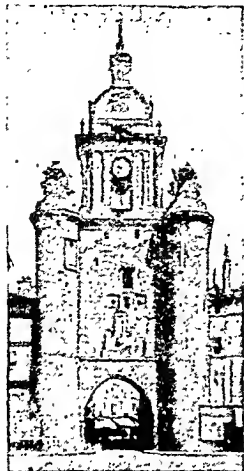
Rochdale. Town Hall, built
1866-71 in the Gothic style
Frith

Rochdale is noted as the cradle of the cooperative movement and the home of the statesman John Bright. Pop. 92,700. See Cooperation.

ROCHE, ALEXANDER IGNATIUS (1861-1921). Scottish painter. Born at Glasgow, Aug. 17, 1861, he studied at the local school of art, and afterwards in Paris. Returning to Glasgow in 1883, he settled down as a painter of landscapes with figures, and in 1896 removed to Edinburgh, and developed portrait painting. He became an A.R.S.A. in 1894, and R.S.A. in 1900. In 1900 he decorated the banqueting hall, Glasgow municipal buildings, with frescoes. He died March 10, 1921.

ROCHEFORT, HENRI. Popular name for the French journalist, Victor Henri, marquis de Rochefort-Lévesay (1832-1913). Born in Paris, July 29, 1832, he became a journalist, and in 1868 started a weekly, *La Lanterne*. This was suppressed, but, after a short exile, he founded *La Marseillaise*, which also was suppressed and its editor imprisoned. His activities in the Commune brought upon him a sentence of imprisonment for life. In 1874 he escaped from New Caledonia, and in 1880, an amnesty having been proclaimed, he returned to France. He founded *L'Intransigent*, supported Boulanger, and was elected to the Chamber. Prominent as an opponent of Dreyfus, he died June 30, 1913.

ROCHELLE, LA. Town and seaport of France. It lies in the bay enclosed by the islands of Ré and Oléron, and has a fine harbour. The harbour of La Pallice, 3 m. to the S.W., begun in 1890, is one of the best on the W. coast of France. Shipbuilding and allied industries are important. Pop. 41,521.



La Rochelle. Porte de la Grosse Horloge, 14-15th cent.

The towers of S. Nicolas, La Chaîne, and La Lanterne are landmarks of the old port. The hôtel de ville, with fortified walls of the late 15th century, dates mainly from 1595-1607, with fine Renaissance façades in the courtyard. The cathedral of S. Louis, 1742-62, stands on the side of the old church of S. Bartholomew. The episcopal palace is now a museum, and the town has many interesting medieval and Renaissance houses. In the 16th century the town became a Huguenot stronghold.

ROCHESTER. City of Kent. It stands on the Medway, 8 m. from Maidstone, on the Southern Rly. The cathedral was erected in the 11th and 12th centuries, but later many additions and alterations were made. Features are the Norman west front, the crypt, the nave, and the tower with 20th century spire. The ruins of Gundulph's Tower perpetuate the name of an early bishop. Of the Norman castle, the main relic is the massive keep. King's School was refounded by Henry VIII. Two old houses are Eastgate House, now a museum, and Restoration House. Near is Gad's Hill Place, the residence of Charles Dickens. The industries include the manufacture of cement, agricultural implements, steel, and oilcake. Pop. 31,933.

ROCHESTER. City and port of entry of New York, U.S.A. It stands on both banks of the Genesee river, 7 m. from its mouth in Lake Ontario, 68 m. E.N.E. of Buffalo. Across the river the New York State barge canal is carried by an aqueduct. Rochester is the seat of a university. Flour-milling and the manufacture of machinery, camera and photographic appliances, thermometers, boots and shoes, are industrial interests. Pop. 316,786.

ROCHESTER, EARL OF. English title held by the families of Wilmot and Hyde. It was given to Henry Wilmot, one of the most devoted followers of Charles II, in 1652. His son, John Wilmot (1647-80) succeeded to the earldom in 1658. It became extinct when Charles, the 3rd earl, died in 1681. In the same year the earldom was revived for Laurence Hyde, only to become extinct again when his son died in 1758.

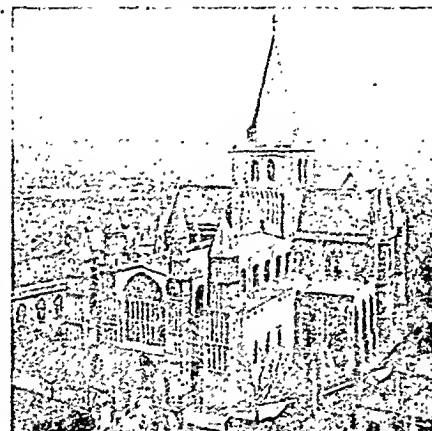


Rochet as worn by Anglican bishops

ROCHET (French; Ital. *roccetto*) Ecclesiastical vestment. A kind of surplice, it is now worn by bishops under, instead of over, the chimere. The name *rochet* dates from about the 17th century, but the garment is much older. In its medieval form it had narrow sleeves.

ROCK. Geological term for certain hard masses of the earth's crust. A rock may be an aggregate of mineral particles of one kind only; but most rocks contain several minerals, and their chemical composition varies. Parts of the crust are either molten or subject at various times to melting, and their materials sometimes reach the surface in the form of lava. By analogy it is concluded that a number of rocks now formed of crystalline minerals were at one time molten in the crust. These rocks cut across the structures of other masses, send out veins into adjacent fissures, and sometimes include fragments of the rocks into which they have intruded. Such rocks are grouped with superficial lavas under the name *igneous*, which implies consolidation from a molten state. Slow cooling promotes coarseness of grain; rapid cooling allows some of the constituents to remain uncrystallised, i.e. in a glassy state. The basalts of Vesuvius and the diorites and granites that form mountainous scenery in Britain are *igneous*.

Another great group of rocks is styled *sedimentary*. Wherever rock of any kind is exposed at the earth's surface, it comes under the action of forces which cause it to break down and crumble. The mineral particles, moreover, decompose in various degrees, according to their chemical composition. Quartz is practically indestructible, and its



Rochester, Kent. Cathedral from the N.W., showing the Norman west front and modern central tower

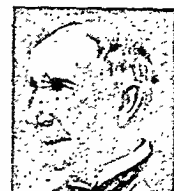
fragments go to form sands, becoming smaller and ultimately rounded as they travel, until they come to rest in a valley-floor or sea, and are held together to form sandstone by the deposition of some mineral cement.

Lastly, *igneous* or *sedimentary* rocks in which new structures, or new minerals, or both, have arisen through the action of pressure or heat, or commonly of both, in the earth's crust are styled *metamorphic* rocks. Slate, schist, and gneiss, for example, are representative types of metamorphic rocks. See Fault; Geology; Isocline; Mineralogy; Petrology; Stratum; etc.

Rock Cress. Large genus of annual and perennial herbs of the order Cruciferae, also known as *Arabis* (q.v.).

ROCKEFELLER, JOHN DAVISON (b. 1839). American capitalist. Born July 8, 1839, he began business as a commission agent, and in 1862 became connected with the oil business, building the Standard Oil Refinery at Cleveland, Ohio, in 1865. Five years later a combination of firms was formed as the Standard Oil Company with a capital of £200,000,

J. D. Rockefeller being president. By 1882 the combine had absorbed or outvalued nearly all similar concerns in the U.S.A., and Rockefeller had become the wealthiest man in the world. He retired in 1911, having already devoted large sums to charitable and educational objects. His son, John D. Rockefeller, jun. (b. 1874), was associated with his father's many enterprises.



John D. Rockefeller, American capitalist

The Rockefeller Foundation is a fund established by J. D. Rockefeller "to promote the welfare of mankind throughout the world." From it grants have been made to educational and other societies throughout the world. The Foundation's capital is over £32,000,000.

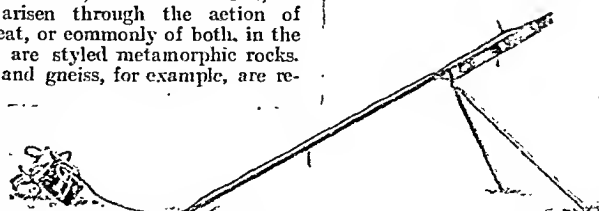
The Rockefeller Institute for medical research was founded by John D. Rockefeller, sen., in New York city, 1901. The donor erected and endowed the necessary buildings at a cost of £800,000.

ROCKET (*Hesperis matronalis*). Perennial herb of the order Cruciferae, known also as *dame's violet* (q.v.). The name *rocket* is also applied to several other plants, e.g. London rocket (*Sisymbrium iris*), dyer's rocket or weld (*Reseda luteola*), sea rocket, yellow rocket.

ROCKET. Firework, in which the charge is so arranged that, when ignited, the case and charge are propelled through the air. Rockets were probably among the earliest missiles containing gunpowder, and preceded artillery in the use of explosives in battles.

An ordinary rocket consists of a stout cardboard case, closed at one end and with a restricted orifice at the other, which is fastened to a stick. The case is filled with gunpowder, tightly rammed, and formed with a conical hole for the greater part of its length, a short piece of quick-match being provided to ignite it. Generally a clay plug is placed above the powder, and in the head of the rocket is a small charge of gunpowder, and one or more coloured stars, a piece of quick-match communicating ignition from the main charge through the plug. When the rocket attains its maximum height the powder which is contained in the head explodes, blowing open the case and allowing the stars which have ignited to fall in a shower.

In 1928 a car propelled by rockets was shown in Berlin. Driven by the ignition of 24 rockets in succession, it attained 112 miles in an hour. Rocket propulsion has also been tried for boats and aeroplanes.



Rocket apparatus placed ready for action, showing rocket with thin line which it carries to the ship in distress

connexion is thus established. By means of the thin line a hawser is hauled to the ship in distress and made fast to the shore, and the rescue is carried out by means of a sling or breeches buoy, which is hauled backwards and forwards along it.

ROCK FERRY. Watery place of Cheshire, a suburb of Birkenhead. It stands on the estuary of the Mersey and is served by the L.M.S. and G.W. Rlys. There is steamer connexion with Liverpool. See Birkenhead.

ROCKET APPARATUS Contrivance consisting of rocket and tube, by means of which a thin line is thrown to a vessel wrecked near the shore, the range being about 100 yards, and

ROCK FISH. Popular name for certain species of wrasse (q.v.), a large group of fishes which occur among rocks and coral reefs. Several species are found round the British coasts.

ROCKHAMPTON. Town in Queensland. It lies on the Fitzroy river, 420 m. by rail N.W. of Brisbane. The terminus of the Central Queensland Rly., and the port for the mines at Mt. Morgan, it has rly. connexions with Brisbane and the other capital cities. The dist. grazes many cattle, and contains meat works, collieries, and gold and copper mines. Pop. 30,000.

ROCKINGHAM. Village of Northamptonshire. It stands near the Welland, 8 m. from Kettering, and is noted for its castle, of which some ruins remain. S. Leonard's church has monuments of the Watson family. To the S. and E. of the village extended the royal deer forest of Rockingham. Pop. 163.

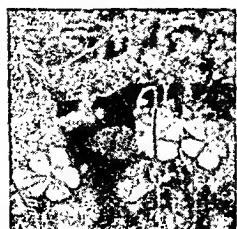
ROCKINGHAM, CHARLES WATSON WENTWORTH, 2ND MARQUESS OF (1730-82) British statesman. Born May 13, 1730, he was made earl of Malton in 1750, and in the same year became marquess of Rockingham. In 1761 he was chosen leader of one of the sections of the Whigs, becoming active at this time as an opponent of Bute. In 1765 Rockingham became prime minister, but he was compelled to resign in 1766. He remained an opposition leader until March, 1782, when he was again at the head of a ministry, but three months later, July 1, 1782, he died. He left no children, and his titles became extinct.

ROCKINGHAM WARE. Pottery formerly made on the estate of the marquess of Rockingham, at Swinton, near Sheffield. The works were established in 1745. Rockingham ware is of a chocolate hue, the teapots, which are characteristically long, coffee-pots, jugs, and mugs being lined with white. Faint blue and white pottery was also produced in these works.

ROCKINGHAM WARE. Plate of this ware made about 1826. British Museum.

ROCKLING (Motella). Genus of shore fishes belonging to the cod family and nearly related to the ling. They are all of small size, and are represented in the British seas by several species. The young of one of these was formerly known as the mackerel midge, and was long regarded as forming a separate genus.

ROCK ROSE (Helianthemum chamaecistus). Trailing shrub of the order Cistaceae, a native of Europe, W. Asia, and N. Africa. It has opposite, oblong leaves, hairy on the upper side and downy beneath. The clear yellow flowers are over an inch across. It abounds on chalk hills and dry soils. Many other species and varieties of great beauty are widely cultivated in rock gardens. See Rose.



Rock Rose, a trailing shrub found on chalk hills

ROCKY MOUNTAIN GOAT (Oreamnus or Haploceros montanus). Goat-like mammal, found only in N. America. It occupies a doubtful position between the goats and the antelopes. In size it resembles a large sheep, and is covered with long white hair. The horns are black, and rise from the forehead with a slight backward curve. It is found only in the most remote parts of the mountains, and lacks the wariness of the true goats.

ROCKY MOUNTAINS. Name for the mountain system which stretches the whole length of N. America. Strictly, it should be limited to the E. ridge to the section of mountains abutting on the plains which comprise the middle of the continent. In this restricted sense the Rockies vary in width from 20 to 60 m.

In the N. section the peaks are in general below 8,000 ft. Between the Peace and Missouri rivers lie the S. Canadian Rockies, with considerable areas over 10,000 ft. high and many notable peaks. Here are the Crow's Nest and Kicking Horse passes. S. of the Canadian border this section is continued at a lower elevation as the Kootenay Mts.

The main area of the U.S. Rockies is the broadest part of the system. In N.W. Wyoming is the volcanic yellowstone region; farther E. lie the Big Horn Mts., and farther S. the Wind River Mts. In the S. of Wyoming the ridge becomes a lofty plateau, the Laramie Plains, which form a connexion with the ranges of Colorado, where Blanca, Pike's Peak, and Long's Peak, all over 14,000 ft., reach the highest points of the true Rockies.

In total length the Rockies stretch through 50° of latitude, with a general bearing to the N.W. from long. 100° W. to long. 150° W.; this implies a total length in excess of 4,000 m. See Canada; Crow's Nest; United States.

ROCOCO (Fr. roc, rock). In architecture and decoration, the name given to a style that prevailed in France and elsewhere on the Continent from the middle of the 17th century to the end of the 18th. It consists of an excessive use of curves, irregular disposition of doors and windows, and superabundance of ornament, imitating rock work and shells. The term has come to be applied to anything extravagant and tasteless in style.

ROD, POLE, OR PERCH.

Measure of length and area. Lineally, it is 5½ yds., or 16½ ft.; as a sq. rod, pole, or perch it contains 30½ sq. yds., or 272½ sq. ft.; 160 rods equal one acre. The sq. rod is used largely in measuring brickwork.

RODD, SIR JAMES RENNELL (b. 1858). British diplomatist. Born Nov. 9, 1858, he entered the diplomatic service in 1883 and was made second secretary to the British embassy at Rome in 1891. In 1893 he was in charge of the British agency at Zanzibar, and he remained in Africa until 1901. Rodd returned to Rome as secretary of legation in 1901, and from 1904 was British minister at Stockholm. He was ambassador at Rome, 1908-19. He was knighted in 1899, and created G.C.B. in 1920. In 1928, and again in 1929, he was elected Conservative M.P. for Marylebone. Sir Rennell published several volumes of poems, and in prose The Violet Crown, 1891.

RODENT (Lat. rodere, to gnaw). Animal belonging to the order Rodentia. The teeth are specialised for gnawing hard substances.

There is usually only one pair of incisors in each jaw, but these are largely developed and are chisel-shaped. As they have enamel on their outer side only, use tends to keep the edges very sharp. They continue growing throughout life, so that if one of them is lost or destroyed, the opposite one continues to grow till it may enter the other jaw, or may so curve as to prevent the mouth from opening. In other cases it curves round and assumes the form of a monstrous tusk. The canine teeth are always absent, and there is a considerable gap between the incisors and the molars. In most of the rodents the claws are blunt and usually somewhat broad, and the animal does not rest on them when engaged in walking.

Nearly all the rodents are strictly vegetarian in diet. The great majority of them burrow in the ground, though some are arboreal and a few aquatic.

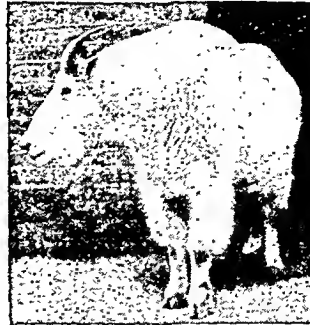
Hibernation is a common habit in this order, while many species store up large provisions of food for the winter. Among the rodents are included the squirrels, marmots, beavers, jerboas, rats, mice, hamsters, voles, lemmings, porcupines, agoutis, earies, hares, and rabbits. They are world-wide in distribution. See Rat, etc.

RODENT ULCER. Form of cancer of the skin. It is generally restricted to elderly persons, and most frequently affects the face, particularly the forehead or the skin around the eye. The condition begins as a small papule which ultimately ulcerates. Progress is usually very slow and painless. Gradually, however, the ulceration increases, until it may involve a large area of the skin and eat into the underlying structures. Treatment by X-rays, particularly in the early stages, is very effective.

RODEO. Originally a rounding-up of cattle, usually for branding. Cowboys on the plains of S. America become very expert at catching the cattle, and exhibitions of their skill became public spectacles in the large American cities. In 1924 a rodeo was held at Wembley, in connexion with the exhibition there. Pron. Ró-dó-o.

RODIN, FRANÇOIS AUGUSTE (1840-1917). French sculptor. Born in Paris, Nov. 14, 1840, he studied drawing at a free school. His first important work, a bust named The Man with the Broken Nose, was rejected by the Salon, 1863. In 1875 he went to Italy, where he studied the work of Michelangelo, Donatello, and other masters. Returning to France, 1877, his noble figure study, The Age of Bronze, created a favourable impression.

The great Gate of Hell, undertaken for the



Rocky Mountain Goat. White-coated mammal found in the mountain fastnesses of N. America
W. S. Berridge, F.Z.S.



Rodent. Diagram showing arrangement of teeth in a hare



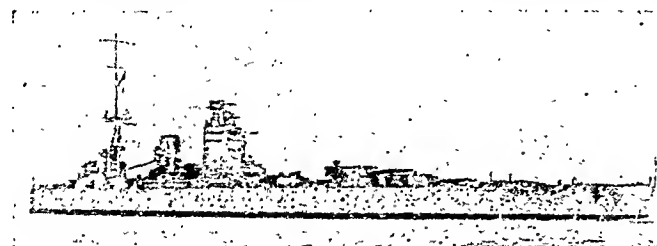
Rococo. Capital of a column in rococo style



Auguste Rodin, French sculptor

Musée des Arts Décoratifs in 1880, occupied him for most of the latter part of his life. The Damvillers monument to Bastien-Lepage was completed in 1889; the Nancy statue of Claude Lorrain occupied 1889-92. The Burghers of Calais group, commissioned in 1886, was completed in 1895; a replica was erected in Victoria Tower Gardens, Westminster, in 1918. In 1905 Rodin presented 20 of his works to the British people. He died at Meudon, Nov. 17, 1917.

RODING. River of Essex. It rises about 2 m. N.W. of Dunmow, and flows for 34 m. to the Thames, 2 m. S.E. of East Ham. The lower course has been canalised to Ilford.



H.M.S. Rodney. British battleship completed in 1927
Stephen Cribb, *Southsea*

RODNEY. British battleship. A sister ship to the Nelson, she was laid down in 1922 and completed in 1927. She displaces 35,000 tons and carries nine 16-in. guns and twelve 6-in. guns, as well as lighter ones. Her total length is 702 ft. and she burns oil fuel. The ship cost £7,500,000. See Battleship; Nelson.

RODNEY, GEORGE BRYDGES RODNEY, 1st Baron (1719-92). English sailor. Born in London, Feb. 13, 1719, he distinguished himself in the battle off Ushant, 1747. Promoted to flag rank in 1759, he bombarded Havre in that year, and in 1761, while in command of the Leeward Islands station, captured Martinique, Santa Lucia, Grenada, and St. Vincent. In 1779 he received orders to relieve Gibraltar, and this he performed by defeating the Spanish fleet off Cape St. Vincent, Jan. 16, 1780. In 1782 he went to the W. Indies and defeated Grasse off Martinique, April 12, 1782. The French were routed, but Rodney refused to pursue. He was recalled, but was made a baron. He died May 23, 1792. The barony passed to his son George (1753-1802), whose descendant became the 8th baron in 1909.



1st Baron Rodney,
English sailor
After Reynolds

1782. The French were routed, but Rodney refused to pursue. He was recalled, but was made a baron. He died May 23, 1792. The barony passed to his son George (1753-1802), whose descendant became the 8th baron in 1909.

ROE, SIR THOMAS (c. 1581-1644). English explorer and ambassador. Born at Low Leyton, near Wanstead, Essex, he secured an appointment at court and was knighted. In 1610 he sailed up the Amazon and to the Orinoco. He made two other voyages to the same quarter in quest of gold. In 1615 he was sent as ambassador to the court of the Mogul, where he obtained privileges for the English merchants which established the foundations of British supremacy in India. He died Nov. 6, 1644.

Part of his journal as ambassador to the Mogul was published by Samuel Purchas (q.v.), and the whole narrative was issued by the Hakluyt Society in 1899.

ROEDEER (*Capreolus capraea*). Small species of deer. It stands about 26 ins. high

at the shoulder, and the colour of the pelt is reddish in summer and olive brown in winter, with a large white patch on the rump. The antlers are about 8 ins. long, and rise almost vertically from the head, usually with three short tines. The head is short and the ears rather large in proportion. The roe deer occurs throughout most parts of Europe, and is indigenous in Great Britain. See Deer.

ROEHAMPTON. District of Surrey, on the W. of Putney Heath. It once formed part of Putney and Mortlake Park. On part of the park was erected the convent of the Sacred Heart. Other buildings of note include Manresa House, a Jesuit college connected with S. Joseph's R.C. church; Dover House, Downshire House, Roehampton House, and Queen Mary's Hospital, where soldiers maimed in the Great War are provided with artificial limbs and trained in handicrafts. During the Great War Roehampton was a headquarters for training of the dirigible balloon section of the R.A.F. See Artificial Limb.

ROGATION DAYS. Three fast days observed by the Roman Catholic and Anglican churches. They are the Monday, Tuesday, and Wednesday before Ascension Day, the preceding Sunday, the 5th after Easter, being known as Rogation Sunday. In the Church of England, which has no special prayers for these days, the only survival of the processions are the perambulations of parishes, still maintained in some places, and known as beating the bounds (q.v.).

ROGERS, SAMUEL (1763-1855). British poet. Born at Stoke Newington, July 30, 1763, he entered his father's bank as a youth, and became head of it in 1793. His leisure was devoted to the cultivation of literature, and by 1792 he had established his fame as a poet with the very successful *Pleasures of Memory*. About this time Rogers took rooms in the Temple, and his breakfasts became famous. His other poems include *Columbus*, 1810, a fragment of an epic, *Jacqueline*, 1814, *Human Life*, 1819, probably the best of his works, and *Italy*, 1822. He died Dec. 18, 1855. Rogers amassed a magnificent art collection and library that after his death was sold for £50,000. Consult S. Rogers and his Circle, R. E. Roberts, 1910.

ROHILLA. People of Afghan race. Early in the 18th century they settled in a territory to the N.W. of Oudh, to which the name Rohilkhand was given. There they came into conflict with the Marathas, against whom they secured the help of the nawab of Oudh, Suraj-ud-Dowlah. For this assistance the Rohillas promised 40 laes of rupees to the nawab, but they only discharged a portion of their debt, whereupon the nawab made a bargain with Warren Hastings, who, in return for a sum of money, promised to send a force against the Rohillas. The result was the short Rohilla war of 1774, in which the tribesmen were quickly crushed. See Hastings, Warren.

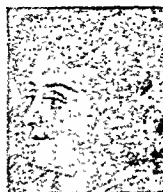
ROKEBY. Village of Yorkshire (N.R.). It stands where the Greta falls into the Tees, 3 m. from Barnard Castle. It owes its fame to Scott's poem. Pop. 150.

ROLAND. Frankish soldier, celebrated in legend as the greatest of Charlemagne's paladins. The historic Roland or Hruotland was slain by the Basques when they overwhelmed the rearguard of Charlemagne's army on its return from an expedition against the Moors of Spain in 778. Popular tradition transformed Roland into a national hero, the

nephew of Charlemagne, and his assailants into Saracens. As Orlando, Roland is the hero of Ariosto's *Orlando Furioso*.

The Song of Roland, the national French epic, is the oldest and finest of the extant chansons de geste. Written probably by a Norman, between 1066 and 1099, it is based on distorted memories of the disaster to Roland.

ROLAND DE LA PLATIERE, MARIE JEANNE PHILPON (1754-93). French memoir and letter writer and revolutionary leader. She was the daughter of an engraver named Philpon, and was born in Paris, March 18, 1754, and in 1780 married Roland de la Platière, husband and wife becoming prominent among the Girondist leaders. Madame Roland's letters and memoirs throw much light on the period, and reveal her as one of the most brilliant intellects of her time. She was guillotined Nov. 8, 1793. Her last words have become famous: "Oh, Liberty, what crimes are committed in thy name!" Her *Mémoires*, first published in 1820, and her *Lettres*, 1867, have been many times reissued.



Madame Roland,
French writer and
revolutionary leader

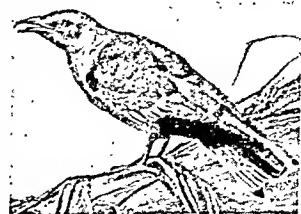
ROLLAND, ROMAIN (b. 1866). French author. Born at Clamecy, Nièvre, Jan. 29, 1866, he devoted himself to literature and became professor at the Sorbonne. The thesis which he wrote for his degree, *Les Origines du Théâtre Lyrique Moderne*, 1895, was crowned by the French Academy. His plays, *Aërt*, 1898; *Le Triomphe de la Raison*, 1898; *Danton*, 1901; and *Le 14 Juillet*, 1902, were not greatly successful, and he turned to other literary fields. He produced a rapid succession of notable works, including *Le Théâtre du Peuple*, 1904 (Eng. trans. 1919); critical biographies of Beethoven, 1903; Michelangelo, 1907 (Eng. trans. 1912); Handel, 1916; and Tolstoy, 1911 (Eng. trans. 1911); and *Musiciens d'Autrefois*, and *Musiciens d'Aujourd'hui*, 1908 (both translated into English, 1915). While producing these books Rolland had also been engaged upon his masterpiece, *Jean-Christophe*, published in ten volumes, 1905-12 (Eng. trans. 1911-13). Rolland received a Nobel prize for literature, 1915.



Romain Rolland,
French author

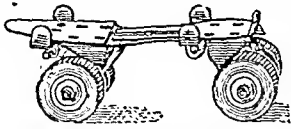
ROLLER. Group of birds, including several genera, widely distributed throughout the E. hemisphere. In general appearance they resemble crows, but have plumage of very brilliant colours. The blue roller (*Coracias garrula*) breeds in S. Europe, and occasionally visits Great Britain. It is like a jay, has chestnut brown and blue plumage, and is about 12 ins. in length. The name is derived from the habit of these birds of appearing to lose balance and roll over when in flight, especially by the males.

ROLLER SKATING. Pastime of skating on wheels. This form of skating was in vogue in the United Kingdom as early as 1800. At first a fixed axle type of skate was used, but with the inclined axles principle and



Roller, the blue species which visits Great Britain

four wheels to each skate, introduced from America in 1863, the execution of figures on roller skates became possible. In 1879 the National Skating Association was formed to promote the sport; and in 1890 the Olympia hall, at West Kensington, was opened as a roller-skating rink. With the advent of the ball-bearing skate the pastime increased in favour. See Skating.



Roller Skating. Ball-bearing four-wheel type of roller skate

ROLLESTON. Village of Staffordshire. It stands on the Dove, $\frac{3}{4}$ m. from Burton-upon-Trent, with a station on the L.M.S. Rly. Rolleston Hall, standing in a fine park, was the seat of Sir Oswald Mosley, Bart., but the estate was sold in 1919. Here Sir Oswald began the manufacture of standard bread.

ROLLRIGHT, GREAT AND LITTLE. Two villages of Oxfordshire. They are situated in the Cotswold Hills, 3 m. N. and N.W. respectively of Chipping Norton, and have a total pop. of about 400. Half a mile from Little Rollright are the important megalithic remains, the Rollright Stones. The isolated King's Stone and the clustered Whispering Knights are the chief stones left.

ROLLS. Name used for documents of historic interest and value, such as the Pipo Rolls and others in the Public Record Office. The Rolls Series are editions of the early English historians published from time to time under the direction of the Master of the Rolls, who is the head of the office as well as a legal official. The Rolls Chapel stood in Chancery Lane, London, E.C.

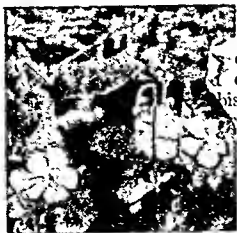


Charles Stewart Rolls, British engineer Elliott & Fry

ROLLS, CHARLES STEWART (1877-1910). British engineer and airman. Born in London, Aug. 28, 1877, a younger son of the 1st Baron Llangattock, he was educated at Eton and Trinity College, Cambridge. After some engineering work at

Crewe, Rolls devoted his time to popularising the motor car in England. He formed the company which became Rolls-Royce, Ltd. About 1901 he turned his attention to aeronautics, and, making many daring flights, was soon one of the best known of British airmen. He was killed while flying at Bournemouth, July 12, 1910. There is a statue to him in the these works at Monmouth.

ROCKING HOLIC CHURCH, The fishes belonging to him acknowledging the related to the ling. The pope. It claims to and are represented by founded by Jesus several species. The yel to teach all nations formerly known as the mar it asserts that it long regarded as forming ad to S. Peter and **ROCK ROSE** (Helianthe church is in cistus). Trailing shrub of the Christ taught, a native of Europe, W. Asia, aple incarnate, has the Mass, the ler without echange



Rock Rose, a trailing shrub found on chalk hills

of the pope, who is college of cardinals bishops. The members the jurisdiction of ointed by the pope, cerous clergy, the otus bishops, and varieties bound by beauty and friars cultivated wet, and gardens. Stomen,

eioistered and contemplative, who are engaged in teaching and nursing.

The distinctive doctrines of the church include the immaculate conception of the Virgin, the seven sacraments, the sacrificial aspect of the Mass, purgatory, the invocation of saints and the supremacy and infallibility of the pope. Auricular confession to a priest is obligatory, and under the name of penance it is one of the seven sacraments.

The Roman Catholic population of the world is estimated at 340,000,000, and of these 2,156,146 are in England and Wales, 600,000 in Scotland, and 3,242,670 in Ireland. In England and Wales there are 4 archiepiscopal and 14 episcopal sees, in Scotland 2 and 4, and in Ireland 4 and 24 respectively. Predominantly Roman Catholic countries are Italy and Spain, nearly the whole of Central and South America, Lower Canada, and the Irish Free State. See Catholic Emancipation; Papacy; Reformation; S. Peter's; Vatican.

ROMANCE. Name given to a group of languages, including a number of dialects, spoken in most of those countries of S. and W. Europe which once belonged to the Roman empire. These languages are: Italian, Spanish, Portuguese, Provençal (with Catalan), Rhaeto-Romanic (spoken in the Grisons and Tirol), Rumanian, and French. They are all descended from Latin, not the literary, but the popular language. The Romance languages exhibit great wealth of new formations, such as augmentatives and diminutives. The vocabulary is in the main Latin. The most mixed is Rumanian, into which Slavonic, Turkish, Greek, and Illyrico-Albanian elements have made their way. Italian has remained most faithful to the parent language, while French exhibits the greatest divergences. See Franco; Latin; Provence; Spain, etc.

ROMAN EMPIRE. The date accepted by Roman antiquaries for the foundation of Rome was 753 B.C. Early Rome was engaged in almost incessant warfare. The right bank of the Tiber was in possession of the Etruscans, and there were turbulent raiders in the mountains in all directions. The inhabitants of the plains of Latium, the Latins, were closely akin to the Romans.

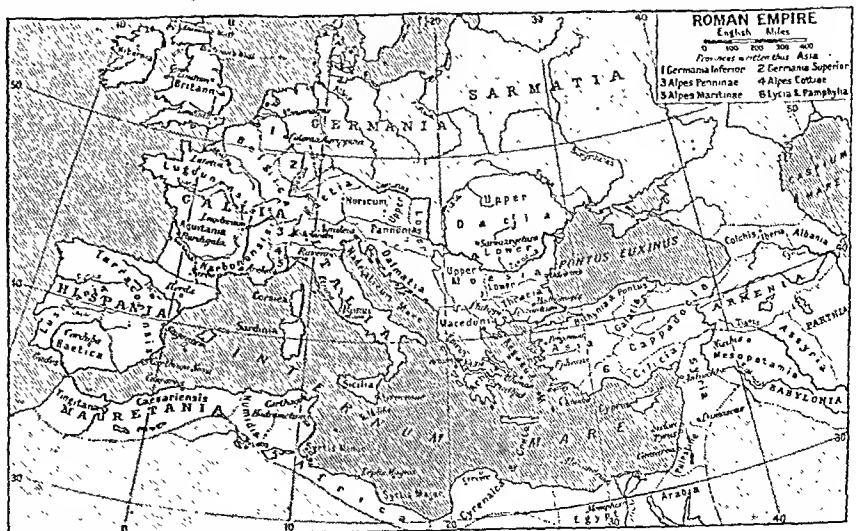
Rome was originally a member of a confederation of Latin-speaking communities, of which she was a principal defensive outpost. Nothing but a very closely knit military and civil organization could have enabled Rome to exist in the earliest period. At first a monarchy, Rome became a republic. The first great step towards empire was obtaining control over the League of Latin cities, which

was achieved finally in 338 B.C. The control of the Greek cities in Campania was obtained about the same time, and soon the Etruscans were subjugated, and by the beginning of the third century B.C. Rome had the control of the whole peninsula.

Rome's greatest ordeal in these early days was the long struggle with Carthage. After three great contests (264-241 B.C., 218-201, and 149-146) Carthage was utterly destroyed. Macedonia was conquered and annexed, and in 133 the last king of Pergamum bequeathed his dominions to Rome, and they became the Roman province of Asia. About the same time the first steps were taken towards the conquest of Gaul. The last annals of the republic were filled with the struggles for control of the Roman polity between military commanders—the Scipios, Marius, Sulla, Pompey, Julius Caesar, and Mark Antony—and then the republic perished. The imperial system itself emerged from a great scene of bloodshed, within and without Italy. The victory of Augustus at Actium in 31 B.C. raised him to undisputed dominion.

Augustus (63 B.C.-A.D. 14), the first Roman emperor, did not aim at any extension of the empire, though there were frequent and sometimes serious wars with the German and other barbarian tribes upon its confines. He established the Pax Romana, the Roman Peace, within the empire itself. The provinces were admirably governed and Italy flourished greatly. Even the extinction of his line, when Nero perished in A.D. 68, shook the foundations of the imperial edifice but little. The Julian-Claudian line was succeeded by the nominees of the eastern forces in the person of Vespasian. Following Nerva came the soldier emperors of great ability, Trajan and Hadrian, and after them the Antonines, the best governors of the whole imperial period. The philosopher-emperor, Marcus Aurelius, gave place to a feeble and vicious son, Commodus; on his assassination, A.D. 180, military nominations followed for several generations. Aurelian, in 270, found the empire ready to crumble away, owing to internal weakness and dissensions and the formidable assaults of Germanic tribes.

On the accession of Diocletian, one of the greatest of the emperors, a new era began. He reconstituted all the imperial institutions and, for administrative purposes, divided the empire into two spheres, an eastern and a western. In 330 Rome was deprived of its pre-eminence by Constantine the Great, who gave the old Greek city Byzantium a new name, Constantinopolis. Following his death his



Roman Empire. Map of the Empire at its greatest extent, during the reign of Trajan, A.D. 98-117

three sons divided the empire. Then followed a succession of emperors, including Julian the Apostate, Valentinian, Gratian, and Honorius, during whose reigns there was continuous fighting. By the end of the first quarter of the 5th century the Goths had overrun Italy and Gaul; Vandals and Germans were in Spain. Rome itself was sacked by Alaric in 410 and plundered by the Vandals in 455. The mighty empire was succeeded by the medieval empire known as the Holy Roman Empire, and by the Byzantine empire at Constantinople. *See* Augustus; Empire; Hadrian; Nero; Rome, etc.

ROMANES, GEORGE JOHN (1848-94). British scientist. Born at Kingston, Canada, where his father was a professor, May 20, 1848, he completed his education at Caius College, Cambridge. Deciding to make scientific research his life work, he made many biological observations in a laboratory of his own, at Dunskaith, in Scotland. The results of his work appeared in various papers and lectures, and brought him the F.R.S. He died in Oxford, May 23, 1894.



George J. Romanes,
British scientist

His works include *Animal Intelligence*, 1881; *Mental Evolution in Animals*, 1883; *Darwin and after Darwin*, 1892-97; and *Essays*, 1897. He also wrote *The Fallacy of Materialism and Thoughts on Religion*. Consult his *Life and Letters* by his wife, 1896. Pron. Ro-mahnez.

The *Romanes Lecturo* is delivered annually at Oxford. It was founded by George John Romanes in 1891, the terms being that a man of eminence shall be elected annually to lecturo on a scientific or literary topic.

ROMANESQUE. In general, the style of building prevalent in Europe from the 4th century to the 12th. Based on Roman architecture, it expressed and developed the principle of the round arch and the vault, but locally it differed widely from its exemplar in plan and constructive aim. Thus the Romanesque period witnessed the development of the cruciform church, the standard type of medieval church, from the basilica.

Broadly speaking, the style followed two separate lines of development, those of the East and the West. That of the East, radiating from Constantinople, was known as the Byzantine (q.v.), that of the West was profoundly modified by Byzantinism, especially in Venice, Ravenna, and along the Adriatic shore, and shared with it certain distinctive features, such as the springing of the arch direct from the cushion capital. The progress of Romanesque towards Gothic was more rapid in France than elsewhere. Among the principal features of a decorative character in Romanesque building was the arcade. In England, Romanesque appeared in the 11th century in the form of Norman architecture. It flourished also with local peculiarities in Provence, where, in the 11th and 12th centuries, it is spoken of as the Roman style. *See* Apse; Arcade; Architecture; Basilica; Capital; Mosaic; Rome.

ROMANI. Town of Egypt, in the N. of the Sinai peninsula. It is 20 m. E. of the Suez Canal, on the rly. from El Qantara (El Kantara) along the Mediterranean coast. It gives its name to a battle fought here in Aug., 1916, between the British and the Turks, sometimes called the second battle of Katia. On Aug. 3 the Turks carried the dunes, but the Australians and New Zealanders were reinforced and the dunes were recaptured. Fighting continued during Aug. 5-7, the British steadily driving on the Turks. The Turkish losses were estimated at 10,000, of whom 5,000 were prisoners. *See* Palestine.

ROMANIA. Name given sometimes to the Latin kingdom of Constantinople, which was founded by the Crusaders in 1204, and lasted until 1261. In 1203 the members of the fourth crusade restored Isaac Angelus and his son, Alexius IV, to the throne of Byzantium. Certain troubles arose between the allies, the result being that the Crusaders captured the city. Then the new empire was founded, its first ruler being Baldwin, count of Flanders. The latter was taken prisoner in Greece, and his successors could do nothing to maintain, much less to extend, their authority. The Byzantine emperors, who had retired to Asia Minor, won back their lost territory piecemeal until in 1261 Michael Palaeologus retook Constantinople and the Latin empire came to an end.

ROMAN LAW. System of civil law evolved in the Roman state from the time of the kings until its codification by Justinian. Its importance lies in the fact that it is still the basis of a large part of European jurisprudence, as well as of the systems in other parts of the world, such as S. America and S. Africa, which were built up originally on the same basis. Further, it lays down many principles which are common to the English law.

Taking the Twelve Tables (450 B.C.) as the starting point, the sources of Roman law may be summarised as follows: (1) Imperial decisions, whether made in the form of commands to officers (Mandata), replies to appeals from public bodies (Epistolae), or from magistrates (Rescripta), or of judgments (Decreta), or of general laws (Edicta.) (2) Equity of the Praetors and Curule Aediles (3) Opinions of the juriconsults (Responsa prudentium), of whom the greatest were Paulus, Ulpian, Papinian, Gaius, and Modestinus. The best part of Roman law may be ascribed to the juriconsults, though the praetors also built up a sort of case law, very useful and effective till codified by the Edictum Perpetuum of Salvius Julianus in the reign of Hadrian (A.D. 117-138). In A.D. 529-34 came the Institutes and Pandects of Justinian.

ROMANOFF. Name of the family which occupied the throne of Russia, 1613-1917. It derives its name from Roman, a member of an old noble house, whose daughter, Anastasia, married the tsar Ivan the Terrible, while his son, Nikita, married the princess Eudoxia, a descendant of Rurik, the founder of the Russian monarchy. Nikita's son, Feodor, became the patriarch Philaret of Moscow, and his son, Michael Romanoff, was elected tsar in 1613. The male line ended with Peter II in 1730, when Anna, daughter of Ivan II, ascended the throne. On the extinction of her line, which happened on the death of the empress Elizabeth in 1762, the crown passed to the Holstein-Gottorp or Oldenburg branch, descended from Anne, a daughter of Peter the Great. The family occupied the throne until the abdication of the tsar Nicholas II (q.v.), March 15, 1917. *See* Ekaterinburg; Russia.

ROMANONES, FIGUEROA Y DE TORRES MENDIETA Y DE ROMO, DON ALVARO, COUNT OF. Spanish statesman. He entered the Cortes as Liberal deputy for Guadalupe, and first held office in 1905, when he was minister for public works, agriculture, and commerce. In Nov., 1912, he became Liberal prime minister on the death of Señor Canalejas. Next month the collective resignation of the Cabinet was announced, but Romanones remained in power at the head of a new cabinet until Oct., 1913, when he resigned. Romanones took office as prime minister again in Dec., 1915, and remained in office until May 1, 1917. Foreign minister, Nov., 1918, he was prime minister, Nov., 1918-April, 1919.

ROMANS, EPISTLE TO THE. One of the four principal epistles of the apostle S. Paul. The epistle would seem to have been written

from Corinth towards the end of the apostle's third missionary journey, and to have been intended to prepare the way for a visit to the Roman Christians. Its purpose is to explain the universal character of the Gospel and the leading ideas of Christian doctrine, and to give practical advice.

The epistle was written about A.D. 58 to a community which included both Jews and Gentiles. Its genuineness is fully attested. It was used freely by the author of 1 Peter, and by Clement of Rome, Ignatius, and Polycarp. It has much in common with other epistles written by S. Paul. *See* Bible; Paul.

ROMANTICISM. Movement in art. Embodying a revolt against the classic tradition in art, it began about the middle of the 18th century and permeated all western Europe. It constituted an appeal to the emotions instead of to the intellect, and reached its climax of intensity in the first part of the 19th century, affecting the modes of the day, when materialism in the industrial world had become all-powerful. Its principal manifestations were the school of figure painters headed by Géricault and Delacroix, and that of the Barbizon painters of landscape, while the same ideal was taken up by the English Pre-Raphaelites.

The term romantic movement is given to a phase through which imaginative fiction in prose and verse passed in the period approximately covered by the last third of the 18th and the first third of the 19th century.

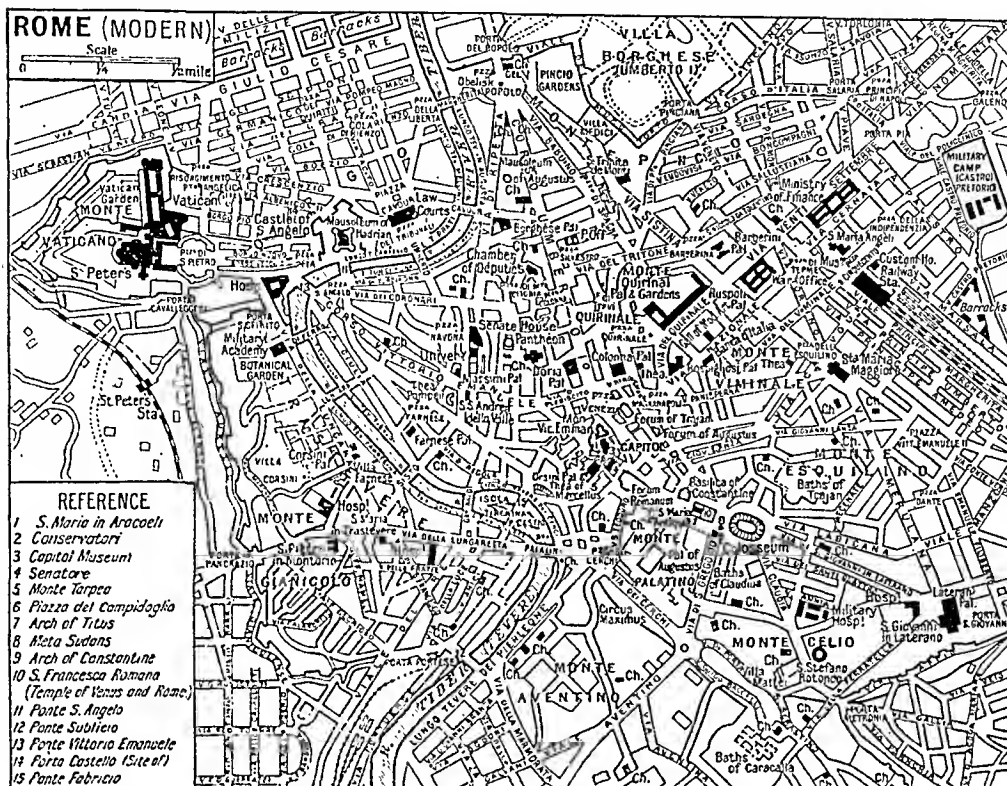
ROME. City of Italy, in the province of Latium, and the capital of the kingdom. It stands on the Tiber, mainly on the left bank, 17 m. from its mouth. The most modern region is N.E. and E. of the Campus Martius and beyond the Corso, covering the slopes and plateaux of the Pincian, Quirinal, Viminal and Esquiline hills. Among the most prominent modern buildings are the monument to Victor Emmanuel II, the law courts, the Chamber of Deputies, the Bank of Italy, the Policlinico (hospital), and the home of the Ministry of Marine. Pop. 914,631



Rome: plan of the Forum Romanum. 1. Arch of Titus. 2. Temple of Vespasian. 3. Arch of Septimius Severus. 4. Forum of Peace. 5. Column of Diocletian. 6. Orators' platforms. 7. Black Stone. 8. Arch of Augustus. 9. Spring of Iuturna. 10. Temple of Vesta. 11. Temple of Marcus Aurelius and Faustina. 12. Mamertine dungeon. 13. Senate House. 14. Voting place. 15. Record Office. 16. Pool of Curtius. 17. Altar of Julius Caesar. 18. Palace of Numa. 19. House of the Vestals. 20. Granaries

The traditional date of the foundation of Rome is 753 B.C. The nucleus of the city was the Palatine hill. There were other settlements on the surrounding hills, and these were fused into one about the middle of the 6th century B.C., when the Cloaca Maxima was constructed, and the adoption of the Forum as a market place made possible. To this period belongs the building of the earliest city walls, which enclosed the seven hills—Palatine, Capitol, Aventine, Caelian, Esquiline, Viminal, and Quirinal.

Augustus completed what Julius had begun, and displayed much activity in other directions, so that his boast that he found Rome of brick and left it of marble is amply justified. He erected three groups of public buildings in the Campus Martius, restored no fewer than 82



Rome. Plan of the capital city of Italy, showing the principal churches and public buildings

temples, built others, including that of Apollo on the Palatine, and constructed the first public baths. His successors constructed a splendid palace on the Palatine hill, while Nero occupied the whole district between the Palatine and Esquiline with his enormous Golden House. Vespasian built the first permanent amphitheatre, the Colosseum, added a new forum, that of Peace, and rebuilt the temple of Jupiter on the Capitol. To his second son, Domitian, is mainly due the construction of a still more magnificent imperial residence on the Palatine. Domitian also began the construction of a new forum, which was finished by Nerva. The series of imperial fora was completed by Trajan, who also brought another aqueduct to Rome, and erected enormous public baths on the site of the Golden House.

Besides the immense villa which he erected for himself near Tivoli, Hadrian is responsible for the temple of Venus and Rome, for the Pantheon in its present form, and for his mausoleum, which later became the Castle of S. Angelo, the great fortress of the popes, and the bridge leading to it. Marcus Aurelius imitated Trajan in erecting a column on which his campaigns were represented in bas-relief.

Septimius Severus was the next great builder. The temple of Vesta, the house of the Vestals, and other buildings were restored by him, and he made a considerable addition to the imperial palace on the Palatine. His son Caracalla built huge thermae on the Via Appia. In 283 a fire gave Diocletian the opportunity of further restorations; he was also responsible for the colossal baths which bear his name. Muxentius erected the greater part of the huge basilica in the Forum which his conqueror, Constantine (Constantine), completed.

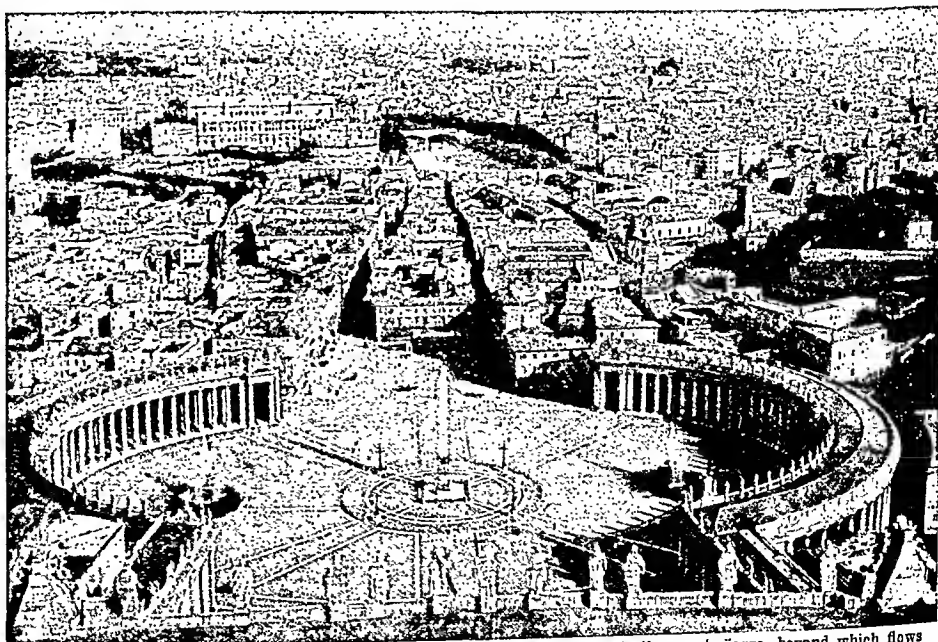
In the pontificate of Sixtus V (1585-90), with the new S. Peter's planned in course of erection, Rome took on the outward appearance which it had until after 1870. By the construction of an aqueduct which supplied the hills, he rendered them once more fit for habitation, and the transformations he wrought in the streets are noteworthy. The re-erection of many ancient obelisks did much to give them a striking termination. After 1870, the growth of the modern city led not only to the occupation of almost all the areas within the city walls by buildings, but to the construction of numerous suburbs. See Appian Way: Aure-

quests. These sculptures aimed more and more at giving the effect of paintings. Decadence soon set in. The arch of Trajan suffers from overcrowding, and the bird's-eye reliefs from the arch of Septimius Severus lack proportion and perspective. Portrait sculpture, however, continued to flourish, the busts of Caracalla and that of Philip the Arabian showing frank and intimate characterisation. The handicrafts, gem cutting, silver and brass work, and especially die-cutting (for coins), flourished under the early empire, and wall decoration, as illustrated by the Pompeian and Roman frescoes, reached a high level.

lian's Wall, illus.; Capitol; Catacomb; Colosseum; Forum; S. Peter's; Vatican, etc.

ROMAN ART. In republican times the Romans mainly employed Etruscans or Greeks in the erection and adornment of their buildings. But by the last century of the republic a flourishing school of portrait sculpture had arisen. There are extant busts of Caesar, Pompey, and Cicero, and Pasitales had founded a school which practised adaptation of Greek types rather than their direct copying. Under Augustus the Greek influence was still dominant in sculpture, though the close association of this art with history, particularly military history, was purely Roman.

Tho Ara Pacis Augustae (13 to 9 B.C.), celebrating that emperor's pacification of the West, inaugurated a series of triumphal arches decorated with reliefs. This form of sculpture reached its zenith under the Flavian emperors, when the arch of Titus was built, and though technical accomplishments declined under Trajan, a new form was developed in the "continuous" spiral relief such as those on the columns of Trajan and Antoninus, representing imperial contin-



Rome. The city viewed from the dome of S. Peter's. In the foreground is the great piazza, beyond which flows the Tiber, with the Castle of S. Angelo and the houses of parliament on its left bank. In the distance, on the right, is seen the marble monument to Victor Emmanuel

ROMFORD. Urban dist. and market town of Essex. It stands on the Rom, a tributary of the Thames, 12 m. N.E. of London, and is served by the L.N.E. and L.M.S. Rlys. The main industry is brewing, but there are engineering and other works. An arterial road runs from Woodford and Wanstead to Romford. Market day, Wed. Pop. 19,448.

ROMILLY, SIR SAMUEL (1757-1818). British legal reformer. Born, of Huguenot descent, in London, March 1, 1757, he was called to the bar in 1783. He was deeply influenced by his study of Rousseau and Beccaria, and became a strong advocate of humanitarian principles in criminal law. In 1806 he became solicitor-general, and he was an M.P. from 1806 until his death. Romilly secured the abolition of the death penalty for certain classes of petty theft, and consistently supported measures of reform and emancipation. He committed suicide, Nov. 2, 1818, following on the death of his wife.



Sir S. Romilly,
British lawyer
Sir T. Lawrence

His son John (1802-74) was solicitor-general and later attorney-general. In 1851 he was made master of the rolls and was the last master to sit in the Commons. In 1865 he was made a baron. He died Dec. 23, 1874.

ROMNEY, NEW. Borough of Kent, one of the Cinque Ports. It is 75 m. from London and 8 m. from Hythe, on the Southern Rly. It lies in the extensive level tract of rich pasture land known as Romney Marsh, which is protected against the encroachment of the sea by an earthen embankment stretching from New Romney to Hythe. The church of S. Nicholas is mainly Norman. In the Middle Ages Romney was the chief of the Cinque Ports. The encroachments of the sea have destroyed its harbour, and it is now about a mile from the coast. Littlestone-on-Sea is part of the borough. It is called New Romney to distinguish it from Old Romney, a village 2 m. to the W. Pop. 1,605.

The title of earl of Romney has been borne since 1801 by the family of Marsham. In 1905 Charles Marsham (b. 1864) became the 5th earl. His eldest son is called Viscount Marsham. An earlier earl of Romney was Henry Sidney (1641-1704), a son of Robert Sidney, 2nd earl of Leicester, who was created earl of Romney in 1694. He died unmarried, April 8, 1704.

ROMNEY, GEORGE (1734-1802). British painter. Born at Dalton-in-Furness, Dec. 15, 1734, he worked with his father, a cabinet-maker, studying drawing in spare moments. His first pictures of note were *The Death of Wolfe*, 1763, purchased for the council chamber at Calcutta, and *The Death of King Edmund*, 1765. Slowly building up a connexion as a portrait and subject painter, he prospered sufficiently to visit Italy. On his return he became fashionable and a rival of Reynolds, painting, among others, the duke of Richmond, Lady Warwick and her Children, "Perdita" Robinson, and Lady Russell and Child. From 1782-85 most of his attention was devoted to Lady Hamilton, of whom he painted many character portraits. He died at Kendal, Nov. 15, 1802. Examples of his work are in the National and the National Portrait Galleries, London. See illus. pp. 699, 801, 1007.



George Romney,
British painter
From the portrait by
M. Archer Shee, R.A.

ROMSEY. Borough and market town of Hampshire. It stands on the Test, 10 m. from Southampton, with a station on the

Southern Rly. The chief building is the beautiful church, originally that of a Benedictine nunnery. Romsey grew up around a religious house for women, founded probably by Edward the Elder about 910. Near is Broadlands, once the seat of Lord Palmerston. Market day, Thurs. Pop. 4,826.

ROMULUS. Legendary founder of Rome. He was represented as a son of Mars by a daughter of Numitor, son of the last king of Alba Longa. When her twin sons Romulus and Remus were born, mother and children were cast into the river by order of Amulius, brother of Numitor. The children drifted ashore and were suckled by a she-wolf. On reaching manhood they slew the usurper Amulius and re-instated their mother's father Numitor. They then proceeded to found a city on the Palatine Hill. Romulus was taken up to heaven in a fiery chariot by his father Mars, and thereafter worshipped by the Romans as a god under the name Quirinus. See Rome.

RONALD, SIR LONDON (b. 1873). British musician. Born in London, June 7, 1873, his family name being Russell, he studied at the Royal College of Music, 1885-90, appeared on the platform as a pianist, 1890, and conducted light opera on tour. He conducted many famous Continental orchestras, 1908-9, and became conductor of the New Symphony (now Royal Albert Hall) Orchestra, 1908. In 1910 he became principal of the Guildhall School of Music. His compositions include much incidental music for stage productions, e.g. *The Garden of Allah*, 1920, and over 200 songs. In 1922 he was knighted.

RONALDSHAY or **RONALDSAY.** Two islands of the Orkneys, Scotland. North Ronaldshay is 3 m. long and 2 m. broad. The North Ronaldshay Firth, which separates it from Sanday, is dangerous to navigation. Pop. 440.

South Ronaldshay is 3 m. long and 4 m. broad, and has remains of several Picts' houses. Pop. 2,000.

The title of earl of Ronaldshay is borne by the eldest son of the marquess of Zetland (q.v.).

RONCESVALLES or **RONCEVAUX.** Village of Spain. In the Pyrenees, 5 m. S. of the French frontier and 21 m. N.E. of Pampeluna (Pamplona), it is famous as the scene of the defeat of the rearguard of Charlemagne under Roland (q.v.). There is a remarkable 13th century pilgrimage church containing relics of the paladin. Pop. 142.

RONDA. Town of Spain. It stands on the Guadiaro river, 43 m. W. of Malaga, on both sides of a deep, rocky gorge, surrounded by mountains. The old town was built by the Moors, and besides some Roman and Moorish relics, it has one of the largest hull rings in Spain. Pop. 22,700.

RONDEBOSCH. Suburb of Cape Town, S. Africa. It is 5 m. to the S. of the city proper and is a residential area. Here is Groote Schuur (q.v.).

RONSARD, PIERRE DE (1524-85). French poet. Born at La Poissonnière, Vendôme, Sept. 11, 1524, he became a page at court. He was in Scotland and England in the retinue of Mary of Guise for three years. Returning to France, he lived in court circles until about 1572, when he retired to the country. He died at Tours, Dec. 27, 1585.

About 1549 Ronsard became leader of La Pléiade, the object of which was to revolutionise French poetry by the imitation of the masterpieces of classical antiquity. In accordance with this programme, Ronsard wrote Hymnes on the Homeric model, and Pindaric odes. His best work, however, is his sonnets and lyrics.



Pierre de Ronsard,
French poet



Romsey, Hampshire. Abbey church of S. Mary, from the south-east. It is in Norman style
Frith

RÖNTGEN, WILHELM KONRAD (1845-1923). German physicist. He was born at Lennep, in the Prussian Rhine prov., March 27, 1845. In Nov., 1895, while professor at Würzburg, he announced the discovery of the rays which bear his name. In 1899 he was appointed professor of experimental physics at Munich and in 1901 he received the Nobel prize for physics. Röntgen was awarded the Rumford medal of the Royal Society and the Barnard medal of Columbia University for his discovery of the Röntgen or X-rays. He also carried out valuable research work on the conductivity of heat of crystals, magnetic rotation of polarised light, absorption of heat of gases, etc. He died on Feb. 10, 1923. See X-Rays. Pron. Runtgen.



W. K. Röntgen,
German physicist

ROOD (A.S. *rōd*, cross). Old name for a cross or crucifix. It is specially used for the great crucifix which in English churches, from the 14th century to the reign of Elizabeth, generally stood on the rood-screen dividing the chancel from the nave. In some churches a gallery, from which parts of the service were recited, ran along the top of the screen.

ROOD. Unit of land or superficial measure, equal to one-fourth of an acre. It is divided into 40 rods, or 1,210 sq. yds. The name is cognate with rod.

ROOF. Part of a building which, being nearest to the sky, protects the interior from sun and rain. In the hot, nearly rainless countries of the East the prevalent type of roof is flat. Where heavy rainfall or snowfall may occur it is sloped, the angle of the slope varying with, and often being characteristic of, the particular style of architecture employed. The average slope of an ancient Greek roof was not more than 16 degrees, that of Roman, Romanesque, and Renaissance styles was some six degrees steeper, while the Gothic pitch sometimes reached as much as 60 degrees. See Mansard.

ROOK (*Corvus frugilegus*). Common bird of the crow family. The plumage is black with purple reflections. It is common in Great Britain, and nests in large colonies in the tops of high trees, preferably near human dwellings. The male often shares the duty of incubation with the female. Rooks are very gregarious, and their morning and evening flights to and from the feeding grounds are familiar sights in the country. The food consists mainly of grubs and insects, and in this way the birds more than compensate the farmer for the seed that they consume



Rook. Gregarious
bird of the crow
family
W. S. Berridge, F.Z.S.

ROOKE, Sir GEORGE (1650-1709). English sailor. Going to sea as a lad, he saw service against the Dutch. The victory of Barfleur, 1692, was practically due to Rooke's gallantry and seamanship, and he was knighted in 1693. Lord commissioner of the admiralty in 1694, he became commander-in-chief of the Mediterranean fleet in the following year, and in 1697 of the Channel fleet. In 1702 Rooke seized Vigo and totally destroyed the Franco-Spanish fleet anchored there. In 1704 he assisted in the capture of Gibraltar. He died Jan. 24, 1709.

ROOKWOOD. Municipality in Cumberland co., New South Wales, Australia. The necropolis, 9 m. by train from Sydney, is on the route to Paramatta. There are meat-preserving works and brick fields. Pop. 5,450.

ROON, ALBRECHT THEODOR EMIL, COUNT VON (1803-79). German soldier. Born April 30, 1803, he entered the Prussian army in 1821. He joined the topographical department, wrote books and lectured to the young officers before becoming a member of the general staff and tutor to Prince Frederick Charles. He rose in rank, and in 1859 was made minister of war and in 1861 also minister of marine. He resigned his office at the war office in 1873, and was for a short time president of the Prussian ministry. He died Feb. 23, 1879. Roon's great work was to reform the Prussian army, which he did, in spite of much opposition, between 1848 and 1866.

ROOSEVELT, THEODORE (1858-1919). American politician, author, and traveller. Born in New York, Oct. 27, 1858, he entered politics on his graduation from Harvard. As leader of the Republicans in the New York state assembly, 1882-84, as Federal civil service commissioner, 1889-95, and as New York City police commissioner, 1895-97, he fought corrupt politicians; he established, too, his reputation as a big game hunter. When the Spanish War began Roosevelt became lieutenant-colonel of the Rough Riders. He returned, a popular idol, to be elected governor of New York State, 1899-1900. On the assassination of President McKinley, in Sept., 1901, the forceful reformer succeeded to the office of president. He was re-elected in 1904 by an enormous majority over his Democrat opponent, A. B. Parker.

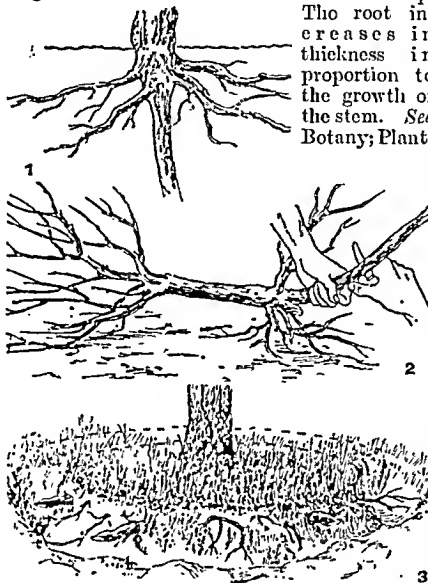


Theodore Roosevelt, American politician

In the negotiations leading to the end of the Russo-Japanese War (1905) Roosevelt fought strenuously for peace, thus earning in 1906 the Nobel Prize. He built up the U.S. navy, and was the first president to make his country felt all over the world. At home, meanwhile, he continued his war on the immoral alliance of the political machines and great financial interests, and initiated a movement for the conservation of the natural resources of the country. He ceased to be president in 1908, but the policy of his successor, W. H. Taft, so dissatisfied him that he formed the Progressive or Bull Moose party. He ran as its presidential candidate in 1912, but was unsuccessful. He conducted explorations in Brazil, 1913, and he died unexpectedly, Jan. 6, 1919.

ROOT. Lower extremity of the main stem in higher plants. Its beginnings are evident, usually, in the seed, where the embryo has two poles, one ascending and becoming the shoot, the other descending and becoming the primary root. Its functions are two-fold—it anchors the plant in the ground, and absorbs from the soil water in which mineral salts are dissolved. The growing point is protected from injury in its passage through the soil by a sheath of cells (root-cap) constantly renewed from within. The general course of the root is

straight down, but its hydrotropism may induce it to turn aside to water. It branches laterally, but the branch roots have a more horizontal orientation with a tendency to grow away from the main or tap root. If a stone or other obstacle checks the onward growth of a root, the tip works around it and then resumes its former course. The food collection is accomplished by abundant single-celled root-hairs situated near the tip. The root increases in thickness in proportion to the growth of the stem. See Botany; Plant.



Root. Method of pruning roots of fruit trees. 1. Diagram showing how roots grow. 2. Shortening tap root of young tree. 3. Treach dig round older trees to permit of pruning their roots

ROOT CROPS. The term root crop is applied not only to turnips, swedes, mangolds, sugar beets, carrots, and parsnips, where the part harvested is actually a root, but also to potatoes, which are tubers, or thickened underground stems, and to such things as rape, kohlrabi, or field cabbages, which occupy the same place in a rotation of crops.

ROOT PARASITES. Plants which attach themselves to the roots of other plants, from which they absorb water and food. Some of these, like toothwort and broomrape, are total parasites, obtaining the whole of their nourishment in this way, and therefore producing no true leaves. Others, like eyebright, are partial parasites, obtaining only crude fluid from their hosts and elaborating it in their leaves.

ROOT, ELIHU (b. 1845). American statesman. Born at Clinton, New York, Feb. 15, 1845, he was called to the New York bar in



Elihu Root, American statesman

1867. As secretary of war in McKinley's cabinet, 1899-1901, he reorganized the war department and introduced several reforms into the army. Under Roosevelt, Root was secretary of state, 1905-9, serving as senator from the latter year until 1915. In 1910 he was appointed member of The Hague tribunal, being awarded the Nobel peace prize in 1912. As an international jurist, he had much to do with setting up the permanent court of justice under the League of Nations.

ROPE. Cordage of a certain circumference, usually one inch or over. There is, however, no definite standard. Until the 19th century, ropes were laboriously made by hand, a ropeway, often a quarter of a mile in length, being essential, two workmen working together. One carried a bundle of hemp or other material, and the other looked after a wheel on which were a series of hooks to which the hemp was

fastened. This wheel was turned as the rope spianer walked down the ropeway making his yarn. The latter was afterwards twisted into strands, and the strands into ropes. Hemp, flax, cotton, manila, sisal, and jute are the chief fibres used in the manufacture of ropes other than wire ropes. See Wire.

ROPEWAY. Wire cable on which a carriage is supported and run on wheels for the purpose of transport. Aerial ropeways are an alternative to railway tracks laid on the ground. Strong wire cables, strung on towers, carry the load in specially designed suspended buckets. If the ropeway has a sufficient gradient, it will work by gravity alone, assuming the loaded carriers to travel downwards. Otherwise power is required to operate it. Very long ropeways are usually divided into sections that are independent of one another, each provided with winding and tension drums, and the carriers are transferred from one section to the next over short level shunt rails.

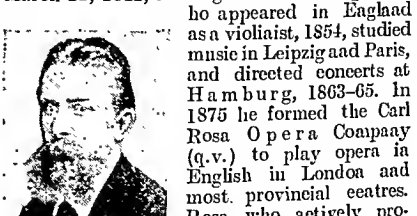
ROPER. River of North Australia. Formed from the rivers Strageways and Chambers, it flows E. to the gulf of Carpentaria. Navigation is somewhat impeded by the bar at the mouth, but it is navigable by boats of 12 ft. draught for 90 m. to Leichardt's Bar.

ROPER, MARGARET (1805-44). Eldest daughter of Sir Thomas More (q.v.). One of the most learned and at the same time one of the most womanly women of her time, she, about 1525, married William Roper (1496-1578), her father's biographer. She is said to have secured her father's head after his execution. She was buried in Chelsea Church, but the head of Sir Thomas More is believed to have been discovered in June, 1824, in a leaden box in the Roper vault at St. Dunstan's, Canterbury. Her character is reflected in Ann Manning's *The Household of Sir Thomas More*.

RORKE, KATE (b. 1866). British actress. Born in London, Feb. 22, 1866, she first appeared at the Court Theatre, London, 1878, and after her performance in T. W. Robertson's *School*, 1880, became a player of comedy parts, being associated with Sir C. Wyndham. From 1889 she played leading parts with Sir John Hare, and in 1904 appeared in the title-role of G. B. Shaw's *Caedra*. In 1906 she became professor of dramatic art at the Guildhall School of Music. In private life she is Mrs. Douglas Cress.

RORKE'S DRIFT. Place on the Tugela river, Natal, S. Africa. It is 23 m. from Dundee and is famous for the stand made by a few British soldiers against a Zulu army, Jan. 22, 1879. Under Lieuts. Chard and Bromhead, 80 men of the S. Wales Borderers beat back the enemy, who finally withdrew.

ROSA, CARL AUGUST NICOLAS (1842-89). German operatic impresario. Born at Hamburg, March 22, 1842, his original name being Rose,



Carl Rosa, German operatic impresario

he appeared in England as a violinist, 1854, studied music in Leipzig and Paris, and directed concerts at Hamburg, 1863-65. In 1875 he formed the Carl Rosa Opera Company (q.v.) to play opera in English in London and most provincial theatres. Rosa, who actively promoted composition of English operas, died in Paris, April 30, 1889, and his company was continued after his death.

ROSA, SALVATOR (1615-73). Italian painter. Born at Arenella, near Naples, June 20, 1615, he went to Rome in 1635, and was commissioned by Cardinal Brancaccio to decorate his palace at Viterbo. In 1639 he was again in Rome, and distinguished himself at the carnival as actor, poet, and singer. Involved in Masaniello's revolution at Naples in 1647, he returned to Rome in 1652. Having routed

hostility by his satirical verses, he withdrew to Florence, where he lived nine years, painting and writing poetry. He died in Rome, March 15, 1673. One may cite especially his Prometheus (Spada Palace) and his large battle picture in the Louvre.

ROSAMUND, called the Fair (c. 1140-c. 1176). Mistress of Henry II. A daughter of Walter de Clifford, she, according to tradition, lived at Woodstock, and was acknowledged by the king about 1174. On her death soon after, she was buried in the church of Godstow Nunnery near Oxford. Legend told of a maze or hower built for Rosamund by Henry, to which Queen Eleanor penetrated, and forced her rival to drink poison. The ruins of the maze in Woodstock park were shown in the 17th century, and Rosamund's well is still to be seen there. She is introduced in Scott's novel, *Woodstock*.

ROSAPENNA. Pleasure resort of co. Donegal, Irish Free State. It stands on an opening off the N. coast of the county, and can be reached from Londonderry by car and steamer. In the late 19th century attention was drawn to its beautiful surroundings.

ROSARIO. River port and city of Argentina. It stands on the Paraná river, 214 m. by river and 237 m. by rly. N.W. of Buenos Aires, and is an important rly. centre and the principal port for the N. provinces. Wheat, hides, wool, linseed, and other products of the pampas, quebracho, copper and other ores are the main exports. The industrial establishments include shoe factories, meat-packing establishments, saw mills, breweries, tanneries, and sugar mills.

ROSARY (late Lat. *rosarium*, chaplet of roses). Device for assisting in the repetition of prayers. Largely used by Hindus and Moslems, the practice of counting prayers by beads was probably introduced into Christendom by the Crusaders, though tradition says that a direct revelation for its institution was made to S. Dominic (q.v.). The form in common use in the R.C. Church is a string threaded with 50 small beads divided into groups of ten by larger beads. The former represent Ave Marias, the latter Pater Nosters.

ROSAS, JUAN MANUEL (1793-1877). Argentine statesman. Born at Buenos Aires, March 30, 1793, he acquired a cattle run, and to protect himself against the hostile Indians organized an armed force of followers which ultimately gave him great power. He was made governor of the state of Buenos Aires, and in 1835 was chosen dictator of Argentina. He ruled with great cruelty, and by mixing in the affairs of Uruguay he brought about the interference of Britain and France. In 1849 he secured peace with those Powers, but in 1852 a rival defeated him, and Rosas fled to England, dying March 14, 1877.

ROSCIUS (d. 62 B.C.). Roman comic actor, whose full name was Quintus Roscius Gallus. He was born a slave at Solonium near Lannvium, and reached a perfection in his art that became proverbial. He obtained

the favour of the dictator Sulla and enjoyed the friendship of Cicero.

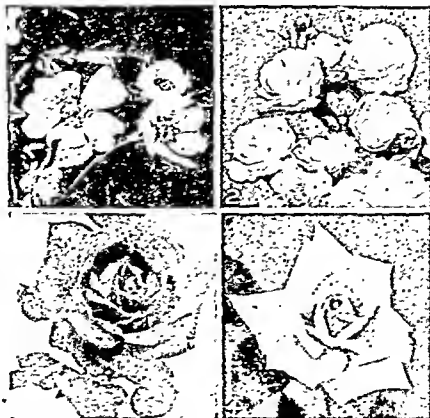
The name has been applied to many well-known actors, such as Richard Burbage; David Garrick; William Henry Betty, the young Roscius; and Ira Aldridge.

ROSCOE, Sir Henry
ENFIELD (1833-1915).
 British chemist and politician. Born in London, Jan. 7, 1833, he was appointed in 1857 professor of chemistry at Owens College, Manchester, which afterwards became the university. He first prepared pure metallic vanadium and conducted other original researches, but is best known as a teacher of chemistry and an educationist. Roscoe was knighted in 1894, and represented S. Manchester in the House of Commons. 1885-95. He died Dec. 18, 1915.

ROSCOMMON. County of the Irish Free State, in the prov. of Connaught. Its area is 990 sq. m. The surface is flat, save in the N., where there are hills rising to over 1,000 ft., and to a lesser extent in the E. The Shannon forms the E. boundary; another boundary river is the Suck, and there are the Arigna and the Boyle. Of many lakes the chief are Ree, Allen, Boderg, and Boffin. Sheep, cattle, and pigs are reared, and oats and potatoes are grown. The plain of Boyle is famous for its pasture. The county is served by the G.S. Rlys. Roscommon is the county town; other places are Boyle, Elphin, Castle-rea, and Strokestown. Pop. 83,556.

ROSCOMMON. County town of Roscommon, Irish Free State. It is 18 m. from Athlone and 55 from Dublin, on the G.S. Rlys. The town owes its origin to S. Coman, who about 700 founded a monastery here. Later a Dominican priory was founded. There are ruins of a castle. Pop. 1,830.

ROSCREA. Town of Tipperary, Irish Free State. It stands on the Little Brosna river, 47 m. from Limerick, with a station on the G.S. Rlys. Roscrea owes its name and origin to S. Cronan, who, in the 7th century, founded an abbey here. There is a round tower, partially intact, and in the fabric of



Rose : four varieties. 1. Dog rose. 2. Dwarf rambler.
3. Sweet-scented red rose. 4. Hybrid tea rose
1. F. B. Hinkins; 2, 3 & 4. Reginald A. Malby



two churches
are remains
of two religi-
ous houses.
Pop. 2,772.

ROSE. The rose (natural order Rosaceae) is the emblematic flower of Britain, whose cultivated forms have been improved from strains or varieties of the wild dog rose, or briar. It includes numerous hardy and half-hardy trees and shrubs, the vast majority of which are deciduous.

Tea roses are among the earliest flowering of roses. The hybrid perpetual class is the most valuable for general garden purposes, and consists of roses which have been cross-fertilised with the object of obtaining as lengthy a period of bloom as possible. Climbing roses have a vigorous stem growth, and are suitable for training to cover walls, pergolas, etc.

Roses are usually grown in one of two forms—as standards or bushes. A standard rose is primarily a staked native briar of about 3 ft. in height, known as the stock, to which is united by grafting the scion, or bud, of a highly cultivated rose, which the stock is intended to succour. The bush rose has a much shorter stock, and is grafted at about planting level. The bush method of cultivation will give a greater number of blooms than the standard, but they may not be of such size or quality. The natural colours of roses are white, pink, crimson, and yellow, though hybridisation has produced what are known as florists' varieties to the extent of between three and four thousand. The number is being added to each season.

THE HERALDIC ROSE. The rose is prominent in English heraldry, the white flower having been adopted as the badge of the House of York, and the red by the House of Lancaster. The two were united by Henry VII, who introduced the Tudor rose, first borne quarterly, red and white; then dimidiated red and white; and finally a red rose within a white one. In cadency it is the mark of the seventh son.

ROSE APPLE (*Eugenia jambos*). Evergreen tree of the order Myrtaceae. A native of Malaya, it attains a height of 20-30 ft., and has oval or lance-shaped, stalked leaves. The four-petalled white flowers are borne on short leafy shoots in clusters of three or five, and are succeeded by more or less oval red fruits, about an inch across, containing one or two poisonous seeds embedded in rose-scented edible pulp.

ROSEBERRY, ARCHIBALD PHILIP PRIMROSE, 5TH EARL OF (1847-1929). British statesman. Born in London, May 7, 1847, he was the son of Archibald, Lord Dalmeny (1809-51), by his marriage with Catherine (d. 1901), daughter of the 4th Earl Stanhope, who became duchess of Cleveland. He went from Eton to Oxford, but left in 1868 without a degree, and in the same year succeeded his grandfather.



Lord Rosebery,
British statesman

The earl soon began to attract attention by thoughtful speeches. A wealthy marriage and the friendship of Gladstone added to his importance in political circles, and in 1881 he took office as under-secretary to the home office. In 1883 he entered the Cabinet as first commissioner of works; in 1885 was lord privy seal. Adhering to Gladstone when Home Rule was introduced, he became foreign secretary in 1886. In 1892 he returned to the foreign office, and in 1894, on Gladstone's retirement, he became prime minister. He was not altogether acceptable, however, to many of the Liberals, and the upshot was the resignation of the ministry in June, 1895. Rosebery retained the leadership of the party until 1896, when he formally resigned. To support the conclusion of the S. African War he placed himself at the head of the imperialistic section of the Liberal party, and later he came out in opposition to the fiscal proposals of Chamberlain. He won the Derby three times, in 1894, 1895, and 1905. In 1892 he was made a Knight of the Garter, and in 1911 he was created earl of Midlothian. After a long period of retirement Lord Rosebery died at Epsom, May 21, 1929.

Rosebery also attained eminence as a man of letters. His speeches on literary and kindred subjects were felicitous in phrase and full of thought, while his books show a wide historical knowledge, insight, judgement, and power. The chief are the monograph on Pitt; Sir Robert Peel, 1899; Napoleon, the Last Phase, 1904; Lord Randolph Churchill, 1906; and Chatham, 1910. His *Miscellanies, Literary and Historical*, appeared in 1921.

In 1878 Lord Rosebery married Hannah, daughter and heiress of Baron Moyer de Rothschild. Their younger son, Neil Primrose, was killed in Palestine, Nov. 18, 1917. See Dalmeny.

ROSE CHAFER OR ROSE BEETLE (*Cetonia aurata*). Species of beetle, common in the S. counties of England. In colour it is greenish gold on the upper parts and bright copper beneath. The grub-like larvae are found among vegetable refuse and decaying wood, while the adult feeds upon flowers.

ROSEMARY. Hardy evergreen shrub with fragrant leaves. It is a native of S. Europe, whence it was introduced into Britain in 1548. It attains a height of about 3 ft., and has purple flowers. The leaves yield a valuable oil, one of the chief constituents of eau de Cologne.

ROSENEATH. Village of Dumharton-shire. It stands on the S.W. side of Gareloch 2½ m. from Helensburgh. Near is Roseneath Castle, a seat of the duke of Argyll. Pop. 1,800.

ROSENTHAL, MORITZ (b. 1862). Galician pianist. Born at Lemberg, Dec. 19, 1862, he studied there and in Vienna, where he made his first concert appearance in 1876. He studied also under Liszt, 1876-78, appeared in Paris and St. Petersburg, 1878, and retired from public playing, 1878-84, in order to study classics and philosophy. His superb technique and great interpretative powers made him one of the foremost pianists of the day.

ROSE OF JERICHO (*Anastatica hieracuntica*). Annual herb of the order Cruciferae. A native of Syria and N. Africa, it has somewhat oval leaves and small white, four-petalled flowers. After flowering, the leaves fall off and the stalks curve towards the centre of the plant, forming a lattice-sphere, in which form the plant dies and dries, gets blown out of the ground, and bowls along before the wind. On coming, perhaps many months later, into moist surroundings, all the parts straighten out and the seed-pouches open and disperse their contents.

ROSE OF SHARON. Name of an unknown flower, perhaps the autumn crocus, or a narcissus, mentioned in The Song of Solomon, 2, 1. The name is popularly given to *Hibiscus syriacus*, an ornamental shrub related to the mallows, and to *Hypericum calycinum*. See St. John's Wort.

ROSES, WARS OF THE. Contest for the crown of England between the houses of York and Lancaster. It is so called because the Yorkists took a white rose as their badge and the Lancastrians a red one. It is usually regarded as opening in 1455 at St. Albans and closing in 1485 at Bosworth.

Henry VI was periodically insane, and the next heir, after 1447, was Richard, duke of York. In 1453 a son was born to Henry, and in 1455 Richard took up arms asserting that he was the rightful king. A battle was fought at St. Albans, after which there was a lull until 1459, when the struggle was renewed. At Northampton in 1460 Henry was defeated and made prisoner, but an agreement was soon reached to the effect that he should remain on the throne, but with Richard, and not his own young son, as his recognized successor.

Incensed at this compact, Henry's wife, Margaret, collected her friends together and in a battle at Wakefield York was killed. His son, later Edward IV, then became the head of the Yorkists, and the warfare continued with increasing ferocity. Edward, having just been proclaimed king in London, routed the Lancastrians at Towton, all this happening in 1461. The Lancastrians suffered further defeats in 1464 and seemed thoroughly crushed, when the quarrel between Edward and his principal supporter, the earl of Warwick, in 1470 changed the fortunes of war. Edward saved his life by escaping from the country, and Henry was brought out of prison and declared king. Next year Edward returned, and the Lancastrians suffered their final disasters at Barnet and Tewkesbury. See Barnet; Edward IV; Henry VII.



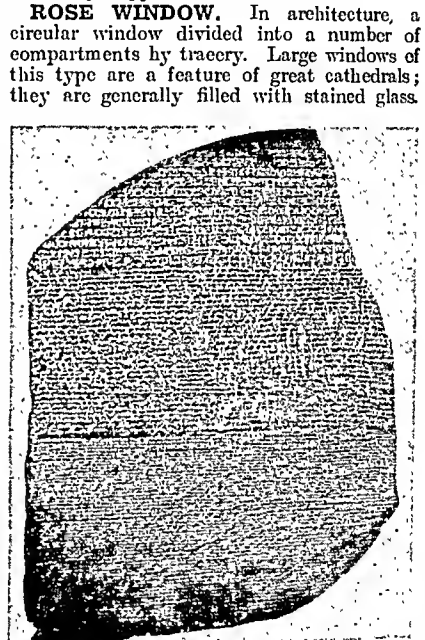
Rosemary. A
flowering spike

ROSETTA. Town in Egypt on an arm of the Nile delta. Once an important harbour, it is now, owing to the rise of Alexandria as a seaport, unimportant. Pop. 23,048.

The Rosetta Stone is an inscribed black basalt slab which, discovered by one of Napoleon's officers in 1799, and acquired by Great Britain at the capitulation of Alexandria, 1801, reached the British Museum in 1802. Bearing an inscription in three versions, hieroglyphic, demotic, and Greek, it furnished the key to hieroglyphic writing. See illus. below.

ROSEWATER. Water tintured with the essence of roses obtained by distillation. A rosewater dish is a bowl designed to hold rosewater which can be sprinkled over the hands. They are frequently used in the East after eating, and occasionally in Western countries replace the customary finger-bowl. Several examples belong to the Clothworkers' Company, including one presented by Pepys.

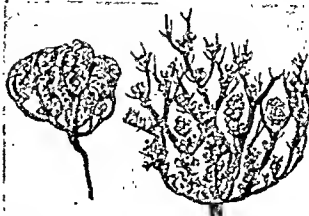
ROSE WINDOW. In architecture, a circular window divided into a number of compartments by tracery. Large windows of this type are a feature of great cathedrals; they are generally filled with stained glass.



Rosetta Stone. Inscribed slab of black basalt that furnished the key to hieroglyphic writing. See above

ROSEWOOD. Commercial term applied to the dark coloured timber of many distinct species of trees. The American product is from *Dalbergia nigra* and species of *Machacarium*. Burmese rosewood is *Pterocarpus indicus*; Canary rosewood is the striped wood of a shrub (*Convolvulus scoparius*); Indian rosewood, *Dalbergia latifolia* and *D. sissooides*. The wood is much used in making furniture.

ROSICRUCIAN (Lat. ros, dew; or rosa, rose; crux, cross). Name given to a secret brotherhood. It did not attract wide attention in Europe until the early part of the 17th century, when it arose in Germany, and spread thence to France and England. The keystone of the Rosicrucian arch is an idealised form of alchemical philosophy. The sign of the order was a rosy cross, and its name is derived by some authorities from dew (ros), regarded as a solvent of gold, and identified with light because the figure of a cross (crux) contains, in various presentations, the three capital letters of the word lux=light, or knowledge. Rosicrucianism, in one form or another, still exists.



Rose of Jericho, showing, left, the carved-in stalks of the dead plant, and, right, the plant expanded for the dispersal of the seeds



Rose Chafer or Rose
Beetle, actual size

ROSLIN OR ROSSLYN. Village of Midlothian. It stands on the N. Esk, 6 m. S. of Edinburgh, on the L.N.E. Rly. The chapel, built in the 15th century, is celebrated for its carvings and for the "prentice pillar." The place gives the title of earl to the family of St. Clair Erskine. Pop. 1,797.

ROSS. Market town and urban dist. of Herefordshire. It stands on the Wye, 12 m. from Hereford, on the G.W. Rly. The church of S. Mary the Virgin is a fine old building in the Decorated and Perpendicular styles. The Man of Ross, John Kyrle (q.v.), is buried in the church. Market day, Tues. Pop. 4,790.



Sir James Ross,
British explorer

ROSS, SIR JAMES CLARK (1800-62). British explorer. Born in London April 15, 1800, he went to sea at the age of 12 and served in the Arctic expeditions of W. E. Parry, 1821-27. Member of Booth's expedition of 1829-33, he discovered the magnetic pole in 1831. In 1839 he was given command of an Antarctic expedition with the Erebus and Terror vessels, discovering Victoria Land and Mt. Erebus, and reporting that the South Pole was unattainable. Knighted on his return in 1843 he died April 3, 1862.

ROSS, SIR JOHN (1777-1856). British explorer. Born June 24, 1777, he entered the navy when a boy. In command of the Isabella, he was sent in 1818 to discover the north-west passage, but after passing Baffin Bay he returned. In 1829 he commanded the Victory, a paddle steamer, on a similar voyage. After three years spent in the ice amid great hardships, he was picked up by a whaler and returned home. Ross was knighted for his services, and in 1851 was promoted rear-admiral, having first taken part in a search for Franklin. He died Aug. 30 1856.



Sir John Ross,
British explorer

ROSS, SIR RONALD (b. 1857). British physician. Born May 13, 1857, and educated at S. Bartholomew's Hospital, London, he entered the Indian Medical Service, 1881, and took up the study of malaria. In 1897-98 he discovered the life history of malaria parasites in mosquitoes, and in 1899 he was leader of the expedition to W. Africa. Ross was awarded the Nobel prize for medicine in 1902. Throughout the Great War he had the sole control in connexion with malaria problems. Afterwards he became director of the Ross Institute for tropical diseases at Putney. He was knighted in 1911.



Sir Ronald Ross,
British physician
Elliott & Fry

ROSSA, O'DONOVAN (1831-1915). Irish Fenian leader. Born at Rosscarbery, co. Cork, his real name was Jeremiah O'Donovan, and he early became connected with the Fenian brotherhood. Sentenced to 20 years' penal servitude for treason-felony in 1865, he was elected M.P. for Tipperary, 1869, and was released conditionally in 1871. He then resided in the U.S.A., and opened a fund for the support of dynamite outrages. He visited England in 1894, and attempted to address the House of Commons. Expelled from the Fenian brotherhood in 1886, he had little political influence in later days, and died in New York, June 29, 1915.

ROSSALL. English public school. It stands on the sea shore at Rossall, Lancashire, 3 m. from Fleetwood, its station. Founded in 1884, it was incorporated in 1890, and consists of nine houses. There is a preparatory school.

ROSS AND CROMARTY. County of Scotland. Its area is 3,089 sq. m. It consists of the two counties of Ross and Cromarty, which were separate until 1889. It has a long, irregular coastline, pierced by Dornoch Firth, Cromarty Firth, and Beaulie Firth on the E. and by Lochs Broom, Ewe, Torridon, Carron, and Aish, and the Gairloch on the W. It includes parts of Lewis and several of the smaller Hebrides. The surface is very mountainous. Of the rivers the chief are the Orrin, Oykel, and Conon. Lochs include Maree, Fannich, Luichart, and Glass. Most of the surface is given up to deer forests; elsewhere sheep and cattle are reared; the fisheries are valuable. The L.M.S. Rly. serves the county. Dingwall is the county town, others being Stornoway, Tain, Cromarty, Fortrose, Invergordon, and Strathpeffer. Pop. 65,800.

ROSSE, WILLIAM PARSONS, 3RD EARL OF (1800-67). British astronomer. Born at York, June 17, 1800, he was educated at Trinity College, Dublin, and Magdalen College, Oxford. From 1823-34 he represented King's County in Parliament. He carried out a series of improvements in the great reflecting telescope at Birr Castle. Rosse made many valuable observations of nebulae and star clusters, and announced the discovery of spiral nebulae. President of the Royal Society 1849-54, he died Oct. 31, 1867.

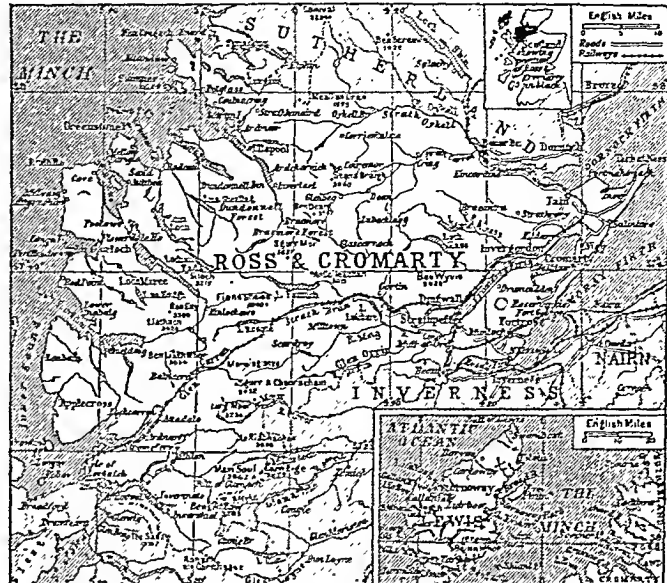
The earldom dates from 1806, when it was bestowed upon an Irish baron. The family seat is Birr Castle, near Parsonstown, and the earl's eldest son is called Lord Oxmantown.

ROSSETTI, CHRISTINA GEORGINA (1830-94). British poet. She was born in London, Dec. 5, 1830, being the sister of D. G. Rossetti.

On the threshold of womanhood an unfortunate love affair helped to give to her writing its note of sadness. As published, her works include Verses, privately printed, 1847; Goblin Market and Other Poems, 1862; The Prince's Progress and Other Poems, 1866; Sing-Song, a book of nursery rhymes, 1872; A Pageant and Other Poems, 1881; Verses, 1893; New Poems, 1896. She also wrote some short stories and devotional prose. Her death took place Dec. 29, 1894.

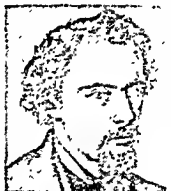
ROSSETTI, DANTE GABRIEL (1828-82). British poet and painter, whose full name was Gabriel Charles Dante Rossetti. Born in London, May 12, 1828, he was the eldest son of Gabriele and Frances Mary Rossetti, refugees from Naples. His father was professor of

Italian at King's College, London. He studied drawing under J. S. Cotman, and entered Cary's Academy in Bloomsbury, 1842, and the R.A. schools, 1846. His literary power developed in advance of his painting; The Blessed Damozel and several sonnets were composed about 1847. In 1848, however, he became the pupil of Ford Madox Brown, a



Ross and Cromarty. Map of the large Scottish county. Inset, part of Lewis and smaller islands of the Hebrides included in the county

step which led to his acquaintance with Holman Hunt and Millais, and incidentally to the formation of the Pre-Raphaelite Brotherhood. About 1852 he became engaged to Elizabeth Eleanor Siddal, the model for his Beatrices and of Millais's Ophelia. The two were married in 1860. In 1855 he made the acquaintance of William Morris and Burne-Jones, and two years later took part in the decoration of the Oxford Union. He died at Birchington, Kent, April 9, 1882.



D. G. Rossetti,
British poet and
painter
Self-portrait

His younger brother, William Michael Rossetti (1829-1919), became a clerk in the civil service in 1844. In 1869 he became assistant secretary of inland revenue, and he retired in 1894. He was a member of the Pre-Raphaelite Brotherhood, recording in his diary its proceedings, and editing The Germ.

ROSSI, GIOVANNI BATTISTA DEI (1494-1541). Italian painter, commonly known as Il Rosso and Maître Roux. Born at Florence, he evolved an inventive and original style from the study of Michelangelo and Parmigiano. From Florence he went to Rome, where he had a good reputation. When the town was sacked in 1527 he escaped to Volterra, then made his way to France, where he designed the great gallery at the château of Fontainebleau, and painted a series of frescoes illustrative of the life of Francis I. Having falsely accused his friend Pellegrini of theft, he committed suicide through remorse.

Another painter of this name was Francesco dei Rossi (1510-63). He was a Florentine, known as Il Salvati, and two examples of his work are in The National Gallery, London.

ROSSINI, GIOACHINO ANTONIO (1792-1868). Italian composer. Born at Pescara, Feb. 29, 1792, he produced his first opera, La Cambiale di Matrimonio, in 1810. Several light pieces followed, and Tancred was



Christina Rossetti,
British poet
After D. G. Rossetti

produced at Venice in 1813. The Barber of Seville appeared at Rome, 1816, and became universally popular.



G. A. Rossini,
Italian composer

ROSSLAND. Town of British Columbia, Canada. Only 6 m. from the U.S. boundary, it is served by the C.P. and C.N. Rlys., and is a centre for the surrounding iron, copper, and gold mines. Pop. 2,097.

ROSSLARE. Seaport of co. Wexford, Irish Free State. It is 6 m. from Wexford, and is served by the G.S. Rlys. Formerly only a fishing village and coastguard station, it came into use as a port in 1906, when the harbour was reconstructed to serve as a terminus for the route from Fishguard opened by the G.W. Rly. Pop. 670.

ROSS SEA. Part of the Antarctic Ocean, between South Victoria Land and King Edward VII Land. It contains Ross Island, and is blocked to the S. by the Ross Ice Barrier. Its coasts, with adjacent islands and territories, were annexed by New Zealand in 1923. See Antarctic Exploration.

ROSTAND, EDMOND (1868-1918). French dramatist. Born at Marseilles, April 1, 1868, his earliest play, *Le Gant Rouge*, was a failure, but in 1894 *Les Romanesques*, produced in England as *The Fantasticks*, made it clear that a writer had arisen who might restore the poetic drama to the French stage; the possibility seemed assured with the success of *La Princesse Lointaine* in 1895. In 1897 came Rostand's great triumph with *Cyrano de Bergerac*. *L'Aiglon* followed in 1900, and in 1901 the author was elected to the French Academy. In 1910 came, after various delays, the fantastic play *Le Chanteur*, all the characters of which were represented as fowls. *Les Musardises*, a collection of early poems, was published in 1911. Rostand died Dec. 2, 1918. See *Bergerac*, S. *Cyrano*.



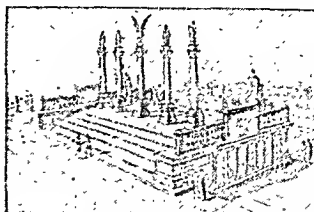
Edmond Rostand,
French poet

ROSTOCK. Town and port of Mecklenburg-Schwerin, Germany. It stands on the Warnow, 60 m. N.E. of Schwerin. The Gothic Rathaus dates from the 14th century. The church of S. Mary contains a Romanesque font of 1290 and an astronomical clock. Linen is manufactured, and there are breweries and distilleries, vinegar, soap, and colour factories, and ship yards. There is trade in grain, cloth, horses, and cattle. Its outport is Warnemünde. The city has a university and was one of the most important members of the Hanseatic League. Pop. 77,669.

ROSTOV-ON-THE-DON. Town of Russia, capital of the N. Caucasian Area. It stands on the right bank of the Don, and owes its importance to its facilities for navigation and its position at the junction of three rly. systems. The chief exports are grain and wool. Pop. 308,284.

There is another Rostov, also called Great Rostov, 35 m. S. of Yaroslavl, on the Moscow-Yaroslavl rly. It is famous for its antiquities, chief of which are the Kremlin and the Uspenski cathedral. Pop. 19,952.

ROSTRUM. In modern usage any raised platform from which a speaker addresses an audience. In ancient Rome, only in the plural form, *rostra*, the word was used to indicate the tribunal or platform in the Forum. From it magistrates addressed the assembly of the people. It was so named because it was ornamented with the beaks or rams (*rostra*) of ships captured from the enemy in naval battles. See *Forum*; *Rome*.



Rostrum. Reconstruction of the rostra in the Forum of Rome

ROSYTH. British naval base on the Firth of Forth. Rosyth was one of the principal bases, and very important in particular as a docking and repairing base of the Grand Fleet during the Great War and the headquarters of the cruiser squadrons. In the latter part of the Great War the main elements of the Grand Fleet were moved from Scapa Flow to Rosyth. Its inception coincided with the change of the naval front from the Channel to the North Sea.

The activities of the dockyard were much reduced after the peace of 1918, and in 1925 it was reduced to a care and maintenance station.

ROTARY CLUB. Movement among business men which takes for its motto service, not self. The idea of the Rotary Club originated with Paul Harris, a Chicago lawyer, who in 1905 sought to establish a little club of men, each representing a different trade or profession, for the interchange of opinion on business and other matters. Religion and politics were excluded from discussion. In 1911 the idea took root in Great Britain, and there are now clubs in most of the business centres.

ROTHAMSTED. Agricultural experimental station, near Harpenden, Herts. It was founded by John Bennet Lawes (q.v.) in 1843, and endowed by him in 1889. With him was associated Joseph Henry Gilbert.

A continuous series of important researches has been carried out on the 40 acre Rothamsted estate and in the attached laboratories. Among discoveries is that of super-phosphates. Wheat has been grown continuously on the Broadbalk field from 1843, and experiments have been made on different manures, including the question of loss in drainage water. Similar experiments have been carried out on barley, oats, root crops, etc.

ROTHBURY. Urban district and market town of Northumberland. It stands on the Coquet, 11 m. from Alnwick, on the L.N.E. Rly. Near is Cragside, the seat of Lord Armstrong. Market day, Thurs. Pop. 1,682.

ROTHENBURG OR ROTHENBURG-OB-DE-STAUBER. Town of Bavaria. It stands on a plateau, above the Tauber, 36 m. W. of Nuremberg. The Rathaus, dating partly from 1240 and partly from 1572, has a tower 160 ft. high. The Franciscan church dates from 1285-1309. The church of S. Jacob, 1373-1436, has notable carvings and stained glass windows. It is still surrounded by its carefully preserved medieval walls. Rothenburg was captured by Tilly in the Thirty Years' War, an event commemorated annually by a play. Pop. 8,828.

ROTHERFIELD. Village of Sussex. It is E. of Ashdown Forest, 8 m. S.W. of Tunbridge Wells, on the Southern Rly. The river Rother rises near. The church was once part of a monastery. Pop. 2,821.

ROTHERHAM. County borough and market town of Yorkshire (W.R.). It stands at the junction of the Rother and Don, 6 m. from Sheffield, on the L.M.S. and L.N.E. Rlys. The church of All Saints is a fine perpendicular

15th century building. The main industries are iron and brass founding. On the old bridge across the Don are the remains of a chapel. Market days, Mon. and Sat. Pop. 68,045.

ROTHERHITHE. London district, in the metropolitan borough of Bermondsey. It is served by the Southern and Metropolitan Rlys., and includes the Surrey Commercial docks (q.v.) and Southwark Park. The parish church of S. Mary, on the W. side of the entrance of the Thames Tunnel (q.v.), was rebuilt in 1715. Rotherhithe Tunnel, for foot passengers and vehicular traffic, connects Lower Road, Rotherhithe, with Commercial Road East, being under the Thames. It was opened June 12, 1908. See *Bermondsey*; *London*.

ROTHERMERE, HAROLD SIDNEY HARMSWORTH, 1st Viscount (b. 1868). British newspaper owner. He was born at Hampstead, April 26, 1868, being a younger brother of Viscount Northcliffe. He entered his brother's publishing business in 1889, and had a good deal to do with its development into *The Amalgamated Press*. The brothers were also associated in buying *The Evening News*, founding *The Daily Mail* and then *The Daily Mirror*, and opening pulp and paper mills in Newfoundland and elsewhere.



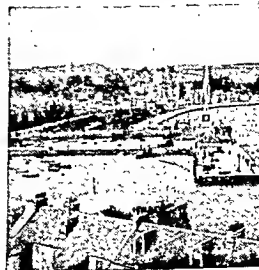
Lord Rothermere,
British
newspaper owner

In 1914 Sir Harold Harmsworth, who had been made a baronet in 1910, severed his connexion with *The Daily Mail* and took over full control of *The Daily Mirror*. In 1915 he founded *The Sunday Pictorial*, and in 1922, after Lord Northcliffe's death, he became chief proprietor of *The Daily Mail*. In 1917 he was director of the army clothing department and in 1917-18 he was minister for air. In 1914 he was made a baron and in 1919 a viscount. Lord Rothermere has made some princely gifts for public purposes. In 1930 he founded the United Empire League. His two elder sons were killed in the war. His third son, Esmond (b. 1898), was M.P. for Thanet, 1919-29.

ROTHERS. Burgh of Moray, Scotland. It is near the river Spey, 10 m. from Elgin, on the L.M.S. Rly. Distilling is the main industry. There are remains of a castle, once a seat of the Leslie family. Pop. 1,265.

The title of earl of Rother was borne by the family of Leslie since 1457. The earl's seat is Leslie House, Fife, and his eldest son is called Lord Leslie. Pron. Roth-er.

ROTHESAY. Burgh and watering place of Buteshire, Scotland, also the county town. It stands at the head of Rother Bay, on the E. side of the Isle of Bute. The chief building is the castle, restored by the marquis of Bute in 1871-77. The town is a yachting centre. Pop. 15,218.



Rother Bay, Scotland. View of the town and harbour

The heir-apparent to the British throne bears the title of duke of Rother Bay, it having been created in 1308.

ROTHSCHILD. Name of a family of Jewish financiers. They derive their name from the sign of the red shield by which their house at Frankfort was known. Founded by Meyer Anselm Rothschild (1743-1812), a banker and money changer of Frankfort who made a fortune during the French campaigns in Germany, the family separated on his death, and his five sons, who were all made Austrian barons in 1822, extended the business through Europe. Nathan Meyer



M. A. Rothschild, founder of the banking house

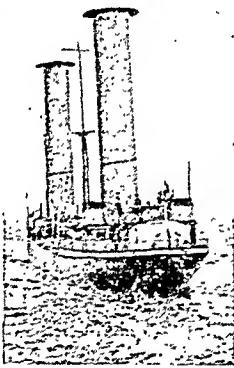
Rothschild (1777-1836) went to Manchester in 1798 and moved to London in 1805, and his son, Lionel (1808-79), was best known by his labours for Jewish emancipation. Lionel's son, Nathaniel Meyer (1840-1915), was M.P. for Aylesbury, 1865-85, when he was made a baron. He was succeeded by his son, Lionel Walter (b. 1868). The family seat is Tring Park, Hertfordshire. It contains a zoological museum.

ROTHWELL. Urban dist. of Northamptonshire. It is 4 m. from Kettering, on the L.M.S. Rly. Boots, shoes, and clothing are manufactured. The chief buildings are the church of Holy Trinity, with memorials to the Tresham family, and the market house, which, begun in 1577, remained unfinished until the 20th century. Pop. 4,368.

ROTHWELL. Urban dist. of Yorkshire (W.R.). It is 4 m. from Leeds. The chief church is Holy Trinity, a fine building restored. Around are coal mines. Pop. 15,249.

ROTOR SHIP.

Name given to a ship propelled by the pressure of the wind upon vertical revolving metal cylinders, which take the place of sails. In a German vessel thus equipped, in 1925, two cylinders, about 40 ft. in height, were caused to rotate by an oil engine, and the vessel was steered by altering the relative speed of the cylinders.



Rotor Ship, showing the metal cylinders which replace sails

ROTORUA.

Township of N. Island, New Zealand. Near the lake of the same name, it is 171 m. by rail from Auckland, in the midst of a 150 m. stretch of country abounding in geysers, hot and cold lakes, fumaroles, etc. It is owned and managed by the state as a health and tourist resort. Pop. 2,800.

ROTTEN ROW. London riding track, in Hyde Park (q.v.). It runs W. from Hyde Park Corner to Coalbrookdale Gate, and returns E. on the N. side of the carriage drive between Albert Gate and Alexandra Gate. The name is derived either from the layer of tan which forms the surface, or from route du roi, a road kept sacred to royalty.

ROTTERDAM. City and seaport of the Netherlands. It lies on the branch of the Rhine delta known as the Maas, joined here by a small river, the Rotte, and is 17 m. by rly. E. of the Hook of Holland. The main part of the town, intersected by many quays and canals, is on the right bank; opposite the long quay called the Boompjes lie the North Island and the suburb of Feijenoord.

Rotterdam is connected with the sea by the Nieuwe Waterweg, which admits large vessels from the Hook of Holland, and has a large transit trade. Imports include grain, metals,

coal, petroleum, tobacco, coffee, and Dutch colonial produce generally; about one-half of Dutch industrial exports pass through Rotterdam. Shipbuilding with allied industries are of primary importance, and there are manufactures of cigars, spirits, and chemicals.

The Groote Kerk, or church of S. Lawrence, begun in 1412, a large Gothic building, with unfinished tower, 1449-1651 (210 ft.), stands near the centre of the Hoogstraat, the chief street of the town. The Boymans Museum has a notable collection of Dutch paintings. The Exchange, 1772, with modern additions, and the Stadhuis or Town Hall, 1835, are noteworthy. Pop. 577,694. See Netherlands.

ROUBAIX. Town of France. It stands on the Canal de Roubaix, which connects it with the Schelde and Deûle, 6 m. N.E. of Lille. It has manufactures of woollens, cotton, linen, shawls, and velvets, and iron and copper foundries and machine works. The 15th century church of S. Martin was rebuilt in 1849. Other buildings include the national school of industrial arts and a modern town hall. Occupied by the Germans, 1914-18, it was re-occupied by the British, Oct. 18, 1918. It has been adopted by Bradford. Pop. 115,441.

ROUBLE. Russian coin. It is divided into 100 kopecks and is in circulation as a silver coin under the Soviet. Ten roubles make a chervetz, which is the monetary unit of the republic. Before the Great War its normal value was 2s. 1½d., and after 1917 paper roubles were issued to an enormous extent.

ROUEN. City and port of France. It lies on the Seine, 87 m. by rly. N.W. of Paris. The main part of the town is on the right bank of the river, which is lined with extensive quays, and is connected with the industrial quarters on the left bank by bridges. The chief industry is the spinning, preparation, and dyeing of cotton. At the suburb of Sotteville are rly. workshops. During the Great War Rouen was an important British base. Modern alterations have driven broad, handsome streets through parts of the old town, but Rouen still remains a picturesque city.

The cathedral, a large Gothic structure, dates chiefly from the 13th century. There are some beautiful rose windows and some fine monuments. The Gothic church of S. Ouen, 14th cent., is architecturally more remarkable, though marred by a modern W. front. S. Maclou (1440-1521) has doors carved by Jean Goujon, and S. Vincent and S. Patrice are famed for their stained glass. The Palais de Justice, 15-16th centuries, was the seat of the parlement of Normandy. Bonsecours, on a hill to the E. of Rouen, is a pilgrimage shrine. Pop. 122,898. See Normandy.



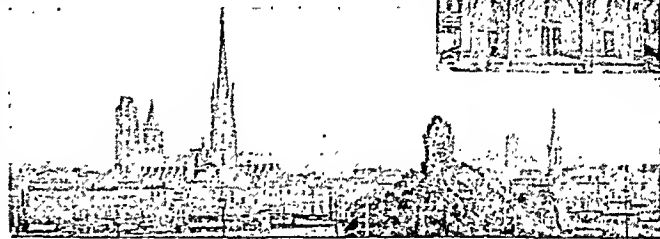
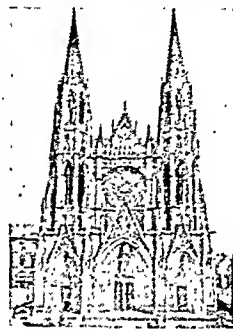
Rotterdam. 1. The Delft Gate, the old north gate of the city, built 1766. 2. Maas and Royal bridges

ROUGE ET NOIR (Fr. red and black). Gambling game with cards. It is played on an oblong table covered with green cloth, having at either end two large diamonds coloured red and black respectively and a triangular space called inverse. In the centre are two divisions known as couleur.

Six packs are shuffled together, from which the dealer takes a convenient quantity in his hand each time a coup is dealt. Court cards count ten, and the ten down to ace bear their face value. The dealer first deals for noir until the pips on the cards faced in a line number 31 or not more than 40; and then does the same for rouge, the winning row being that containing pips totalling the nearest to 31.

Players who stake on couleur wager that the winning colour will be the same as the first card turned; those backing inverse, that it will be the opposite. Stakes placed on the red or black diamond denote the backing of that particular colour to win. The dealer holds the bank; the others are punters. See Roulette.

ROUGET DE LISLE, CLAUDE JOSEPH (1760-1836). French soldier and poet. Born at Lons-le-Saunier, Jura, May 10, 1760, he owes his fame entirely to the song, La



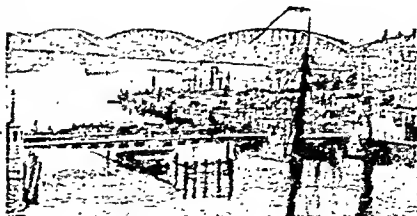
Rouen. 1. Panoramic view dominated by the great 13th century Gothic cathedral. 2. Church of S. Ouen; this facade was added to the 14th century structure in 1848-51

Marseillaise (q.v.), which he wrote and composed in 1792. He was imprisoned under the Terror. Wounded at Quiberon, 1795, he left the army and lived in straitened circumstances until Louis Philippe granted him a small pension in 1830. He died June 26, 1836.

ROUGH RIDER. Originally one who rode or trained untried horses, i.e. a horse-breaker. From that it came to be used for soldiers in the cavalry and artillery who did this kind of work, and who wore a spur on the sleeve as a badge. Still later, bodies of mounted men raised for service in time of war called themselves roughriders; among such were the City of London Yeomanry and the regiment raised by T. Roosevelt for service during the Spanish-American War.

ROULETTE.

Gambling game. The roulette wheel itself is sunk in the centre of an oblong table covered with green cloth. The base of the wheel is poised on ball-bearings,



and by turning with the hand a small cross-bar rising from its axis, it can be made to revolve very rapidly.

The circular bed is divided into 37 compartments. Zero is coloured green; the other compartments are black and red alternately; 32 being black, 15 red, and so on. A white ivory ball is thrown into the moving machine,

the ball being spun in an opposite direction to that in which the wheel is rotating, in order to avoid all chance of cheating by sleight of hand on the part of the operator; the compartment in which the ball finally rests indicating the winning number.

ROUNDEL OR **ROUNDELAY** (Fr. rond, round). In music, the tune to which a poem of the same name was sung, and in which the first strain was repeated at intervals, thus giving the impression of a circle or round. In instrumental form this has developed into the rondo. Roundel was also the name of a dance in which the performers stood in a circle.

In heraldry, roundels are circular or rounded charges, having different names according to their tinctures: yellow, a bezant; silver or white, a plate; red, a torteau; blue, a hurt; green, a pommel; black, an ogress, a pellet, or a gunstone; purple, a golpe or wound; sanguine, a guzo; tenné, an orange.

ROUNDERS. Ball game once very popular in Great Britain. In 1889 the Rounders Association of Liverpool and Vicinity and the Scottish Rounders Association were formed, and rules drawn up. The area of play was made in the form of an elongated diamond; the number of players restricted to ten on each side, and the dimensions of the "bat" fixed at 35 ins. in length by 3½ ins. in diameter. The ball was made harder in substance, and thereafter, to put the striker out when running between bases, a fielder had to touch him with it instead of throwing it at him as formerly was allowed. The last man in may call for "three fair hits for the rounder," and if successful in hitting the ball to a sufficient distance to enable him to negotiate safely the whole round of the bases he obtains another innings for his side. See Baseball

ROUNDHEAD. Name applied to the supporters of the Parliamentary cause in the Civil War in derisive reference to the close-cropped hair of the Puritans.

ROUND TABLE OR **TABLE ROUND.** In medieval legend, the table at which King Arthur and his knights dined, also an order of knighthood maintained by Arthur. The table is first mentioned by Wace, and described at length by Layamon. It was round in order to avoid rivalry for precedence.

ROUND TOWER. Tall slender stone structure, of which there are notable examples in Ireland. Apparently erected in the 9th to 13th centuries, these towers served as detached bellies, watch towers, and strongholds for ecclesiastics and their valuables. Of 120 recorded, 10 still retain their conical caps. See Brechin; Broch; Glendalough.

ROUP. Common and serious disease attacking fowls which are too closely confined. In the catarrhal form the fowl shows symptoms of a severe cold, with discharge from the nostrils and the mouth, which later dry up, producing what is known as dry roup.

Roup. In Scotland, a sale by auction. The conditions of sale are called articles of roup and the seller is the exposor.

ROUSSEAU, JEAN JACQUES (1712-78). French philosopher. The son of a watchmaker who was also a dancing master, Jean Jacques Rousseau was born at Geneva. He ran away to Savoy, where Mme. de Warens harboured him, and for many years he lived in her house, performing the duties of an upper servant and enjoying the privileges of an adopted son. In 1741 he went to Paris, and settled there. He formed a connexion with Thérèse le Vasseur,



J. J. Rousseau, French philosopher After Ramsay

a seamstress, who remained his companion until his death. The five children whom she bore him were deposited in the Foundling Hospital, where all trace of them was lost.

In Paris Rousseau contributed mainly on musical subjects, to the Encyclopédie; and in 1750 he found himself famous as the author of a prize essay. He then cut himself off from social life and lived in simple fashion in the country, supporting himself by copying music, while writing books which gave him a place among the immortals. The first of these was a novel, *La Nouvelle Héloïse*, which launched the romantic movement in French literature. *Le Contrat Social*, which came next, might be described as an impassioned version of Locke's *Treatise on Government*. In *Émile*, Rousseau advocated natural religion as a substitute for the doctrinal teaching of the Church. To avoid arrest on account of the opinions expressed in *Émile*, Rousseau went to Switzerland and then, after a few years, to England. In 1767, having quarrelled with Joseph Hume and other friends, he returned to France and lived under an assumed name. In 1770 he settled in Paris. His *Confessions* were published after his death, on July 2, 1778.

ROUSSEAU, PIERRE ÉTIENNE THÉODORE, (1812-67). French painter. Born in Paris April 15, 1812, he travelled in Anvergne and Normandy, and in 1848 settled at Barbizon. For thirteen years from 1835 his pictures were regularly rejected by the Salon jury on account of their departure from established conventions; in 1849, however, a new jury admitted his work and awarded him a first class medal, and henceforward his progress was unimpeded. He died Dec. 22, 1867. See Barbizon; also illus. p. 194.



Rowan Tree. Cluster of flowers and leaves

N. and W. Asia, and N. America. Its leaves are divided into six to eight pairs of slender leaflets. The small clustered creamy-white flowers are succeeded by bright scarlet fruits.

ROWE, NICHOLAS (1674-1718). English dramatist. Born in Bedfordshire, and educated at Westminster, he wrote eight plays, of which the best are *The Fair Penitent*, 1703, and *Jane Shore*, 1714. The former is notable as containing the character of Lothario, who has passed into the currency of the language as the typical deceiver of women. Rowe is a master of pathos. In 1715 he was made poet laureate, and he died Dec. 6, 1718.

ROWFANT. District of Sussex, 4½ m. W. of East Grinstead on the Southern Rly. In the old Tudor house here Frederick Locker-Lampson (q.v.) lived for the last 20 years of his life, and here stored his valuable library. Among the books may be noted a fine copy of the Shakespeare first folio, 1623; many early editions of Shakespeare's plays, Pope's copy of Chapman's translation of Homer, 1611, rare editions of the Elizabethan dramatists, and of Bunyan, Defoe, Swift, Goldsmith, Fielding, Wordsworth, Thackeray, and Dickens.

ROWING. Sport which centres in the race rowed annually, since 1829, between crews representing the universities of Oxford and Cambridge, and the annual regatta which takes place at Henley.

Three inventions differentiate modern oarsmanship in racing craft on rivers from rowing in pleasure boats or in fishing and other boats on the open sea. These are the outrigger, the

smooth and keelless hull, and the sliding seat. The outrigger appeared first in the university race of 1846, and the first keelless boat soon followed. The slide was invented in Chicago in 1857. The improvement it meant was soon recognized, and the university race of 1873 was rowed on slides which gave a movement of about 12 in. Much thought has also been expended, notably by Dr. Edmond Warre, on the build of boat most suited for racing, and the length of the oars has been almost as prolific a subject for controversy.

The art of rowing can only be learnt on the water, with the help of an experienced coach. It is important to catch the beginning from the stretcher, to throw the weight from the feet on to the blade at the same time as the legs of the rower begin to shove the slide back, and to finish the body-swing exactly as the slide reaches the back stops.



Thomas Rowlandson, British caricaturist Self-portrait

ROWLANDSON, THOMAS (1756-1827). British caricaturist. Born in Old Jewry, London, he studied at the R.A. schools, and in Paris. Until 1780 he painted and exhibited landscapes, portraits, and history in the grand manner. The Westminster election of 1784 brought him into notice as a political satirist. The "dedicate investigation" of 1809 into the conduct of Princess Caroline, and the popular feeling against Napoleon gave him further opportunities of exercising his art. Most of these drawings for public consumption are crudely coloured and coarse. He is seen to greater artistic advantage in the *Three Towns* of Dr. Syntax, with text by William Combe, which appeared in Ackermann's *Poetical Magazine*. He died in London, April 22, 1827.

ROWLEY REGIS. Urban dist. of Staffordshire. It is near the Stour, 5 m. from Birmingham, on the G.W. Rly. Surrounded by coal mines, its industries include ironworks, potteries, and chain works. Pop. 40,025.

ROWTON, MONTAGUE WILLIAM LOWEY-CORRY, BARON (1838-1903). British politician. A son of Henry Corry and grandson of the earls of Belmore and Shaftesbury. He was born Oct. 8, 1838, and educated at Harrow and Trinity College, Cambridge. His father was first lord of the admiralty under Lord Derby in 1867-68, and in 1866 young Corry became private secretary to Disraeli. He retained that position until Beaconsfield's death, having been in the closest touch with the Tory leader throughout.



Baron Rowton, British politician Elliott & Fry

In 1880 he was made a baron. Rowton died unmarried. Nov. 9, 1903, when his title became extinct. Beaconsfield left all his papers to Rowton, who did not, however, write the official Life of the statesman. See Beaconsfield.

ROWTON HOUSE. Building designed to provide comfortable and inexpensive lodgings, with some of the amenities of club and hotel life, to single men of good character and in poor circumstances. The scheme was devised by Lord Rowton, and the first Rowton House was erected by him at his own cost in Bond Street, Vauxhall, with accommodation for 477 persons. It was opened Dec. 15, 1892. Its success, financial and social, was such that in 1894 a company was formed to extend the work. Similar institutions were opened in London at King's Cross, Newington Butts, Hammersmith, Whitechapel, and Camden Town, with a total accommodation for 4,694 persons.



Roxburghshire. Map of the Scottish border county

ROXBURGH. Former burgh of Roxburghshire, Scotland. It stood near where Kelso now stands, at the junction of the Teviot and Tweed, and gave its name to the county. There was a castle here in the 11th century, a favourite residence of the Scottish kings. Around it the town grew until it was one of the most important in Scotland. The town gradually became smaller, until to-day nothing is left of it. About 2 m. away is New Roxburgh, on the L.N.E. Rly.

ROXBURGHE, DUKE OF. Scottish title borne since 1707 by the family of Ker. Robert Ker, a son of William Ker of Cessford, was made earl of Roxburghe in 1616. By special arrangement this title passed on his death to his grandson, William Drummond, who took the name of Ker, and his descendant John became the 5th earl in 1693. He was secretary of state for Scotland, and, having helped to bring about the union of the two kingdoms in 1707, was in that year made a duke.

John, the 3rd duke, formed a famous and valuable library, sold in 1812, and gave his name to the Roxburghe club. He died in 1804, and in 1812 the titles were successfully claimed by Sir James Innes, Bart., a descendant of the 1st earl; he took the name of Innes-Ker, and from him the later dukes are descended. Their chief seat is Floors Castle near Kelso. The duke's eldest son is known as the marquis of Bowmont.



John, 3rd Duke of Roxburghe After W. Hamilton

ROXBURGHSHIRE. Border county of Scotland. Its area is 666 sq. m., and it is sometimes called Teviotdale after its chief river. The Tweed and Liddel (Liddesdale) also give their names to beautiful dales here. The surface is hilly in the S.E., where are the Cheviots, and in the N., where the Eildon Hills enter the county. Much land is devoted to grazing sheep, while tweeds are manufactured. The rivers are noted for their fishing. Jed-

burgh is the county town; other places are Hawick, Kelso, and Melrose. The peel towers include Fernieburst, Branxholm, Harden, and Hermitage, while there are abbey ruins at Melrose, Jedburgh, and Kelso. There are fine examples of hill forts. Pop. 41,400.

ROYAL ACADEMY. English art institution. Founded Dec. 1, 1768, by George III, it provided for the appointment of a president and forty Academicians, and for the holding of annual exhibitions. The Academicians

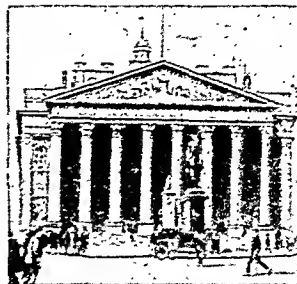
were to include professors of all branches of the fine arts, thus inaugurating the educational side of the Academy's activity now represented by the Academy schools.

In 1780 rooms in Somerset House were assigned to the Academy. In 1834 it was removed to Trafalgar Square, and in 1869 to Burlington House, Piccadilly. The annual exhibition opens the first Monday in May, and lasts till August. Included in the R.A. premises is the Diploma Gallery, so called from the fact that it consists of works presented by Academicians on their election. The administration of the Chantrey Bequest is vested in the president and council. See Academy; Chantrey, Sir F.

ROYAL CANAL. Waterway of the Irish Free State. It extends from the Liffey, at Dublin, to the Shannon, at Richmond Harbour. Constructed between 1789-1802, it is 96 m. in length, has a width of 44 ft. and a depth of 6 ft. It is owned by the G.S. Rlys.

ROYAL EXCHANGE. London building for merchants and bankers. It is between the Bank of England and Cornhill, E.C. The third on the same site, it was built from

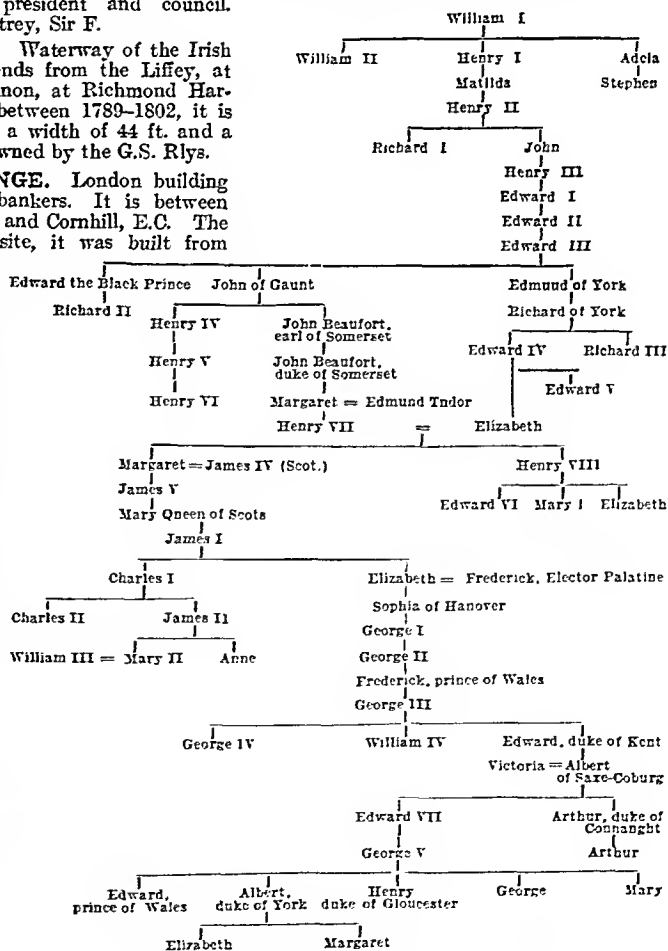
ROYAL FAMILY. Term used in the United Kingdom for the sovereign and the members of his family, including uncles, aunts, and cousins. It is used in a similar sense in other countries ruled by kings; in countries ruled by emperors the term imperial family was substituted. Since 1917 the name of the royal family has been Windsor, taken by royal proclamation in July, 1917. See George V; Mary; York, Duke of, etc.; also table below.



Royal Exchange, London. Portico of the building opened in 1844

ROYAL FERN OR FLOWERING FERN (*Osmunda regalis*). Large, handsome fern of the order Osmundaceae. The feathery fronds, 10 or 12 ft. long and about 3 ft. broad, are broken into large, paired leaflets, again divided. At the upper part of the fertile fronds the leaflets are more or less contracted and concealed by the clusters of spore cases, which look like red-brown flowers. It lives in bogs and wet woods. See p. 1174.

ROYAL FUSILIERS. Regiment of the British army. Known as the City of London Regiment, it was raised in 1685 by command of James II. It first saw service in the Flanders campaigns of 1692-95, and later



Royal Family. Genealogical table of the British Royal Family

distinguished itself in the Peninsular, Crimean and S. African wars. During the Great War in addition to its four regular battalions a number of specially raised service battalions were included, Sportsmen's, Stock Exchange, etc. Its territorial battalions were increased to four times their original number (see London Regiment). The depot is at Hounslow.



Royal Fusiliers. Badge of the regiment

800 officers, men, and visitors perished. A later Royal George was a yacht, built for George IV and occasionally used by Queen Victoria. Part of her fittings are preserved at Virginia Water.

ROYAL HOUSEHOLD. Term applied to attendants of the sovereign. The existing system of government in monarchical countries has developed largely from the sovereign's household.

In the United Kingdom to-day the king's household is a large one, divided into several departments. Under the lord chamberlain are seven lords in waiting, the gentlemen in waiting, the gentlemen at arms, and many others. Other high officials are the lord steward and the master of the horse. There is an ecclesiastical household, called the college of chaplains, and a medical household. The master of the household and the crown equerry have each a department. For more personal matters there is the department of the treasurer and the private secretary's office. There is a ceremonial department under a comptroller. The king has also a separate household in Scotland.



Royal Fern *Osmunda regalis*. See page 1173

Other members of the royal family have households. That of the queen is under a lord chamberlain, and includes a mistress of the robes and a number of ladies of the bedchamber. Other royal households, e.g. that of the prince of Wales, are under comptrollers. See King.



Royal Scots. Badge of the regiment

ROYAL SCOTS. Regiment of the British army. Known also as the Lothian Regiment until Dec., 1920, when its official title became The Royal Scots (The Royal Regiment), this is the oldest British regiment, dating from 1633. It took a notable part in the battles of Blenheim, Oudenarde, and Malplaquet, and served in the Peninsular War. It fought at Quatre Bras and Waterloo, and, later, in the Crimea, China, and South Africa.

In the Great War over 50,000 men enlisted in the regiment. The regimental depot is at Glencorse, and the colonel-in-chief of the regiment is Princess Mary.



Royal Scots. Corporal in full uniform

ROYAL SOCIETY, THE. Premier scientific society in the United Kingdom. It originated in a meeting in London, 1645, of a number of learned inquirers after knowledge, for the discussion of various speculations in natural philosophy and of experiments connected therewith. In 1648-49 some of the members removed to Oxford, where they met in Dr. Wilkins's rooms at Wadham College. About ten years later most of them returned to London, and resumed their meetings at Gresham College, E.C., becoming organized in 1660 as a society, which, on April 22, 1662, was incorporated.

The society met at Gresham College, except for a short time at Arundel House, 1666, until 1710, when a move was made to Crane Court, Fleet Street, E.C. In 1780 the society moved again to rooms provided by the government in Somerset House, and in 1857 to its present home in Burlington House, Piccadilly. Its fellowship, the F.R.S., is regarded as one of the world's great honours. Several medals are offered each year in encouragement of scientific research and discovery, e.g. Davy and Darwin medals. See Academy; Burlington House.

The Scottish equivalent is the Royal Society of Edinburgh, which developed from a philosophical society founded in Edinburgh in 1739. Its headquarters are at 22, George Street, Edinburgh, and its members are known by the letters F.R.S.E.

ROYAL SOVEREIGN. Nameship of a class of British battleships completed 1915-16. They are 624½ ft. long, 88½ ft. in beam, displace 25,750 tons, and have engines of 40,000 h.p., giving a speed of about 22 knots. They burn oil. Their armament consists of eight 15-in., fourteen 6-in., and two 3-in. guns, and 21-in. torpedo tubes. Besides the nameship, the class contains the Royal Oak, Resolution, Revenge, and Ramillies. There was an older class of battleship in the British navy bearing these names. See Battleship.

ROYAN. Seaside resort of France. It lies at the mouth of the Gironde, 63 m. N.N.W. of Bordeaux. Its S. aspect and fine sands make it a popular bathing resort. There is a small harbour. Pop. 10,242.

ROYAT. Pleasure resort of France. It stands on the Tirolaine, at an alt. of 1,495 ft., about 2 m. S.W. of Clermont-Ferrand. Its thermal springs and beautiful environs attract many visitors. Pop. 2,170.

ROYCE, JOSIAH (1855-1916). American philosopher. Born in California, Nov. 20, 1855, he was educated at the university of California, and in Germany. In 1878 he returned to his own university as a tutor, and in 1892 was made professor of philosophy. In 1914 he went to Harvard as Alford professor of natural religion and moral philosophy. Royce taught objective idealism, that the relation between the subject and the object of thought is one of absolute identity and of logical voluntarism. All logic is logic of the will; truth is instrumental so far as it is a means of obtaining the object of all human willing. Morality consists in free, active loyalty to a thing or community. Royce died Oct. 4, 1916.

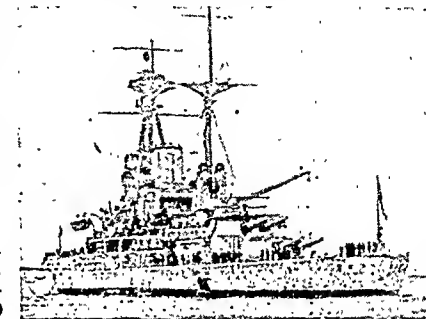
ROYSTON. Market town and urban dist. of Hertfordshire. It is 12 m. from Hitchin, on the L.N.E. Rly. In 1742 a cave, containing carvings of the Crucifixion, etc., was discovered, and many Roman relics have been found. Royston crow is another name for the hooded crow. Market day, Wed. Pop. 3,826.

ROYSTON. Urban dist. of Yorkshire (W.R.), England, 4 m. from Barnsley, with a station on the L.M.S. Rly. The chief buildings are the church of St. John the Baptist, restored in 1859, and the grammar school, founded 1607. Pop. 6,250.

ROYTON. Urban dist. of Lancashire. It is 3 m. from Oldham on the L.M.S. Rly. The chief building is S. Paul's church, and the main industry is cotton manufacture. Pop. 17,194.

RUABON OR RHUWABON. Town of Denbighshire, Wales. It is 5 m. from Wrexham, on the G.W. Rly. In the parish church are monuments to the Williams-Wynn family, whose seat, Wynnstan, is near. Bricks, tiles, and chemicals are manufactured, while coal and iron ore are mined near. Pop. 3,387.

RUANDA. Dist. of the Belgian Congo. Formerly it was the N.W. corner of German East Africa, but with Urundi, S. of it, was assigned to Belgium as mandatory of the League of Nations. It is bounded N. by Uganda, E. and S. by Tanganyika Territory, and W. by Lake Kivu. The country is mainly mountainous. Usumbura is the capital. The area is about 20,550 sq. m.



H.M.S. Royal Sovereign, nameship of the class of battleships constructed 1915-16

RUBÁIYÁT. Plural of Rubai, a Persian word meaning quatrain or verse of four lines in which the first two and fourth lines rhyme. One quatrain or stanza is a rubai, and a number of verses or complete poem is a Rubáiyát. The best known is the Rubáiyát of Omar Khayyám, translated into English by E. Fitzgérald. See Fitzgérald, E.; Omar Khayyám.

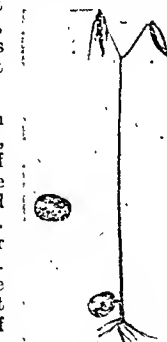
RUBBER. Milky juice obtained mainly from trees of the genus *Hevea*, Ceara, Castillo, etc.; natives of S. and Central America.

Other rubber-bearing trees and vines are known, including *Ficus elastica* of the East (see India Rubber Plant), and others native to Africa, Madagascar, Malaya, and Borneo.

For a long time S. America, and especially Brazil, was the sole and afterwards the chief source of rubber. It was procured in a rough and ready fashion by the natives slashing the wild rubber trees with axes, and collecting the juice or latex in small cups. The rubber was cured by repeatedly dipping a

paddle into the latex and revolving the paddle over a smoky fire of bark and nuts. The principal tree was *Hevea brasiliensis*. On account of its excellent quality, fine hard Para was preferred above all other rubbers.

In 1873 the authorities of Kew Gardens determined to try if rubber seeds could be procured from the Amazon districts and planted in British possessions in the East. Seeds were obtained with great difficulty and planted in Kew Gardens, and the seedlings produced were transported to Ceylon and Singapore in 1876. Their descendants now cover hundreds of square miles in Southern India, Ceylon, the Federated Malay States, the Straits Settlements, Sumatra, Java, and Borneo.



Rubber. Seed and seedling of *Hevea brasiliensis*

Charles Macintosh of Glasgow produced his waterproofing process in 1823, turning out a product free from the stickiness and odour associated with earlier attempts. This laid the foundations of the rubber industry. The vulcanisation process was discovered independently by Hancock and Goodyear about 1842-3. By subjecting rubber to the combined action of sulphur and heat it gained in strength and elasticity, became free from stickiness, and the rubber goods thus prepared were able to withstand climatic influences.

There is scarcely any art, industry or sport in which rubber is not used in some form or other. The many products include, e.g. the threads used in elastic tapes and wearing apparel, rubber springs, tires and brake blocks for vehicles, soles and heels for footwear, floor coverings and paving blocks. In the form known as ebonite or vulcanite, rubber is moulded and turned to form a multitude of small articles.

In 1850 the output of rubber was estimated at 1,000 tons. In 1929 the export from producing countries was estimated at 860,200 tons, of which 25,000 tons were wild rubber. The demand kept roughly parallel with the increasing production until about 1920, when there were signs of over-production, and the price dropped to 1s. per lb. Restriction of output was adopted in 1922 by the British interests, and remained in force until 1928. In 1929 the average price was 10½d. per lb.; in the autumn of 1930 it fell to 3d., the lowest on record. See illus. below.

RUBENS, PAUL ALFRED (1875-1917) British composer. Born in London, April 29, 1875, he was educated at Winchester and studied law. His real talent, however, was the writing of music for the stage. Among his successes were musical numbers for *Florodora*, 1899; *A Country Girl*, 1902; *The Cingalee*, 1904; *Miss Hook of Holland*, 1907; *The Balkan Princess*, 1910; and *The Girl from Utah*, 1913. He died Feb. 5, 1917.

RUBENS, PETER PAUL (1577-1640) Flemish painter. Rubens was born June 29, 1577, at Siegen, Westphalia, where his father,



Peter Paul Rubens
Flemish painter
Self-portrait

a prominent citizen of Antwerp, was living in exile. After his death, 1587, Rubens was able to go to Antwerp, where he worked under Verhaeght, van Noort, and Otto van Veen or Voennius. From 1600 he was painting in Italy, returning to Antwerp in 1608, where he was soon recognized as one of the greatest painters of the day. A man of wide culture, he several times engaged in diplomacy, carrying out missions at Delft, 1626, Madrid, 1628, London, 1629, and at The Hague, 1632. He died May 30, 1640.

Rubens is credited with about 1,250 authentic works. Brussels, Antwerp, and Vienna have some masterpieces, and the National Gallery, London, contains over 30 works.

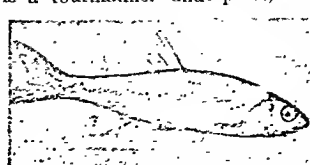
RUBICON (mod. Rugone or Urgone). In ancient geography, a stream forming the boundary between Italy and Cisalpine Gaul. Its crossing by Julius Caesar began the Roman civil war, 49 B.C. The phrase to cross the Rubicon is equivalent to burning one's boats, taking an irrevocable step. See Caesar, Julius.

RUBIDIUM. One of the rare elementary metals. Its chemical symbol is Rb; atomic weight, 85.44; atomic number, 37; specific gravity, 1.52; melting point, 38.5°C. It is wax-like and soft, even at very low temperatures; oxidises rapidly in air, and burns on water with violet flame, decomposing the water and liberating hydrogen, which takes fire. It forms amalgams with mercury. The metal is silvery white in colour, and is called rubidium from the deep, red colour of its lines in the spectrum. Rubidium is used to line the glass bulb of the photo-electric cell, where it forms the electron-emitting layer.

RUBINSTEIN, ANTON GREGOROVITCH (1829-94). Russian pianist and composer. Born at Wechotynetz, in Bessarabia, Nov. 28, 1829, he studied piano-playing in Moscow and Paris, and in 1840 played in Paris before Liszt and Chopin. He studied composition in Berlin, 1844-48, and settled in St. Petersburg, where he became court pianist, 1858, and director of the imperial conservatoire, which he founded, 1862-67. Between 1867-73 he toured widely in Europe and America, and died Nov. 20, 1894. His operas, numbering 18, are seldom played, though many of his piano compositions and a few songs are well known. He published his memoirs in 1889.

RUBY. Red, transparent variety of corundum. Dichroic by transmitted light, enabling it to be distinguished from similar stones, e.g. garnet, spinel, etc., it is inferior only to the diamond in hardness, and appears equally brilliant in natural or artificial light. The finest rubies are those possessing a deep, clear, carmine colour, and are known as pigeon's blood rubies. The best dark red rubies are obtained from Mandalay in Burma, and in Siam and Ceylon. A number of so-called rubies are not varieties of corundum. Many are garnets, e.g. Australian rubies and Cape rubies. The Siberian ruby is a tourmaline.

RUDD OR REDEYE (*Leuciscus erythrophthalmus*). Common fresh-water fish, found throughout Great Britain and Europe. It has red fins and eyes, and closely resembles the roach, but the dorsal fin is placed rather farther back. It is of small value for the table.

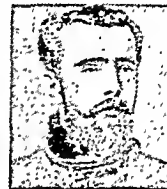


Rudd. Small fresh-water fish resembling the roach

RUDDER. Flat frame hinged on the stern-post of a vessel, by which the vessel's course is determined. When the rudder is in a line with the axis of the vessel, no deviation occurs, but a slight turn to port or starboard swings the vessel's head to starboard or port respectively. Small boats are usually steered by a tiller passing through the rudder-head, while larger vessels are steered by a wheel, which on being turned pulls the rudder to one side or the other by means of chains connecting it with the rudder-head. In steamships steam steering-gear is fixed aft, and the steering is done from the navigating bridge. Vertical rudders are fitted to airships and aeroplanes for similar steering purposes. See Ship.

RUDNIK. Ridge of hills in Northern Serbia, called also Suvobor. Along the ridge, which separates the valleys of the Kolubara and Upper Morava, the Austrians and Serbians, in Nov., 1914, fought the battle generally called the battle of the Kolubara (q.v.).

RUDOLPH. Name of two German kings and Roman emperors. Rudolph I (1218-91) was count of Hapsburg before he became king in 1273. He greatly increased the area of the land under his rule and was the real founder of the greatness of the Hapsburg empire. He died July 15, 1291. Rudolph II, a son of Maximilian II, became emperor in 1576 and ruled also over Hungary and Bohemia. In 1606, after an ineffective rule, he was deposed, and he died Jan. 20, 1612.



Rudolph, Crown Prince of Austria

Rudolph II, became emperor in 1576 and ruled also over Hungary and Bohemia. In 1606, after an ineffective rule, he was deposed, and he died Jan. 20, 1612.

RUDOLPH (1858-89) Crown Prince of Austria. Born Aug. 21, 1858, the only son of Francis Joseph, emperor of Austria, he showed considerable ability as a naturalist and a linguist, while his travels led him to write two books: *Fifteen Days on the Danube*, 1881, and *A Journey in the East*, 1884. In 1881 he married Stephanie, daughter of Leopold II, king of the Belgians, and they had one daughter. On Jan. 30, 1889, Rudolph was found shot at Mayerling, near Vienna.

RUDYARD. Village of Staffordshire. It is 2 m. from Leek, on the L.M.S. Rly. Here is Rudyard Lake, 2 miles long, which forms a reservoir for the Trent and Mersey canal. Pop. 78.

RUE OR HERB OF GRACE (*Ruta graveolens*). Perennial sub-shrub of the order Rutaceae. A native of S. Europe, it has alternate, much-divided, bluish-green leaves, the ultimate leaflets being oblong. They are plentifully supplied with oil glands, from which proceed the powerful odour characteristic of the plant and the bitter taste. The small yellowish flowers are combined in clusters. Rue has long been used in medicine as a stimulant and narcotic.



Rue. Leaves and flowers

RUFF (*Macetes pugnax*). Bird of the sandpiper sub-family. The plumage is of mottled brown, grey, and black, with pale buff underparts, and the length is about 12 ins. In the breeding season the male develops a tuft of long feathers on either side of the head and a broad ruff or shield of feathers on the throat. This accounts for the name of the bird. The female, or reeve, lacks these appendages. These ruffs are constantly distended and



Rubber. 1. Seven-year old plantation in Sumatra. 2. Para rubber gatherer, solidifying milk after tapping tree. 3. Hevea tree, tapped with the Huber knife. 1 and 3 from *The Rubber Cultivation on the East Coast of Sumatra*, by J. H. Hookey.

displayed during courting time. The bird was formerly abundant in marshes in many parts of England, to which it is a summer migrant, but has now been almost exterminated. In winter it migrates from N. Europe and Asia to the Mediterranean, Africa, and India.

RUFFE or **POPE** (*Acerina cernua*). Fresh-water fish. It is very much like a perch, to which it is closely allied, but lacks the vertical stripes of that fish, and has spots on the dorsal fin, and seldom exceeds five inches in length. It is found in clear running streams throughout southern and middle England and Central Europe, and feeds upon worms and insects.



Ruff with feather tufts on throat in breeding season

RUFJI. River of Tanganyika Territory. Rising N.E. of Lake Nyasa, it flows N.E. to its junction with the Ruaha just above Pangani Falls. From this point the direction is E. to the coast opposite the island of Mafia. Here in July, 1915, the German cruiser Königsberg (q.v.) was destroyed by a British force.

RUGBY. Market town and urban dist. of Warwickshire. It stands on the Avon, 30 m. from Birmingham, and is served by the L.N.E. and L.M.S. Rlys. It is a rly. junction and a hunting centre. The industries include engineering works. Rugby is an important radio station. Market days, Mon. and Sat. Pop. 25,220.



Rugby, Warwickshire Part of the school buildings

RUGBY SCHOOL. English public school. It was founded in 1567 by Lawrence Sheriff, a native of Rugby and a courtier, also a member of the Grocers' Company. It has property around Rugby and in London, and is governed by 12 trustees. The first building was near the parish church, whence it was removed to its present site about 1740. In 1809 the present buildings were begun, and constant additions were made during the 19th century. The number of boys is about 600, accommodated in nine houses. Rugby became a great public school mainly under the direction of Thomas Arnold (q.v.), headmaster, 1827-42. It was the first home of Rugby football.

RUGBY UNION. Association of clubs playing the Rugby game of football. There the four of these unions in the United Kingdom, ment, uch for England, Scotland, Ireland, and It took In order to secure uniformity in the the battle English union was founded by a few Oudenarde, 71, and the others came into exist- quet, and sene afterwards. The rules of the Peninsular War, n up and, if necessary, altered at Quatre Brttee. In addition to arranging Waterloo, and, laother matches, and looking the Crimea, China, nterests of the game, the South Africa.

In the Great War over 50,000 men enlisted in the regiment. Ther regimental depot is at Glencorse, and the colonel-in-chief of the regiment is Princess Mary.

RUGELEY. Urban dist. and market town of Staffordshire. It is 7 m. from Lichfield, on the L.M.S. Rly. In the neighbourhood are the Cannock Chase collieries, and other industries include milling and tanning. Market days, Tues. and Thurs. Pop. 4,607.

RÜGEN. German island in the Baltic Sea. It is separated from Pomerania by the mile-wide strait of Strelasund, and has an area of 373 sq. m. Steep chalk cliffs, reaching an alt. of 500 ft., on the E. coast, form the edge of the E. hills. The coastline is exceedingly irregular. Grain, fish, and cattle are the chief products. Bergen is the chief town. The island was Danish from 1168, Pomeranian from 1325, Swedish from 1648, and has been Prussian since 1815. Pop. 53,883.

RUHLBEN. Racecourse near Berlin. During the Great War it was converted into an internment camp for civilian prisoners, among whom were large numbers of British subjects who were unable to get away on the outbreak of war, and also many British seamen of the merchant service. See Internment.

RUHNEN. DAVID (1723-98). German scholar. Born at Stolp, Pomerania, Jan. 2, 1723, he was educated at Wittenberg. From there he went in 1743 to Leiden, where he made a special study of Greek. His wonderful abilities soon brought him to the front, and in 1757 he became lecturer in Greek at Leiden. Chosen a professor in 1761, in 1774 he was elected university librarian. He died May 14, 1798. Ruhnken was one of the band of scholars who restored Greek to a high place in secular studies.

RUHR. River of Germany, a right tributary of the Rhine. It flows almost due W. through the rich coal and iron area of Rhenish Prussia for 145 m. to join the Rhine at Ruhrort.

During the Great War the Ruhr district was one of Germany's chief munition centres. It was also one of the principal centres of revolution in Nov., 1918. In Jan., 1923, the French, in consequence of Germany's failure to pay reparations, occupied the Ruhr district, including Essen. The Germans retaliated with industrial passive resistance, and a deadlock ensued until Sept., when the German government ordered work to be resumed. In 1925 the occupying troops left the district. See Essen; Germany; Reparations.

RUISLIP. District of Middlesex. It lies between Harrow and Uxbridge, and has a station on the Met. Rly. It forms part of the urban dist. of Ruislip-Northwood. The ancient flint and stone church of S. Martin, restored in 1869-72 by Sir Gilbert Scott, has a tower with a peal of eight bells. To the N. runs the brook Pin, and near is Ruislip reservoir. Pop., urban dist., 9,113. Pron. Rye-slip.

RULE, BRITANNIA.

British national song. Written by James Thomson, and composed by Dr. Thomas Arne, it was one of the numbers in a masque, Alfred, written in 1740 for the prince of Wales as part of an entertainment given at Chifden. The song immediately attained great popularity, and has now reached the dignity of a British national or patriotic ode. See Arne, T. A.; Thomson, James.

RULE OF THE ROAD. Regulation enforced by law to ensure safety in the use of thoroughfares by vehicles and riders. In Great Britain the rule of the road, unlike that prevailing in most continental countries and America, is to keep to the left, and to pass in that position all traffic coming in an opposite direction; but on overtaking any vehicle, to draw towards the centre of the road, and pass on the right side of the vehicle overtaken.

At sea the rule of the road is a convention for the guidance of a ship when meeting another. Port means the left-hand side of a ship and starboard the right. The rule of the road is for ships to pass port to port. At night a green light is shown on the starboard and a red light on the port.

RUM. Ardent spirit distilled properly from fermented cane sugar. It is made in the W. Indies. Its brown colour is imparted by caramel, or storing in sherry casks, or by both. The poorest rum is made from molasses, or from the refuse from sugar-making. In France an inferior sort is made from beet sugar. Rum is usually distilled at some 40 p.c. overproof. See Alcohol; Distillation.

RUM. Island of the Inner Hebrides. Inverness-shire. It is 15 m. from Ardnarmurchan Point, is 8 m. long and 7½ wide, and covers 42 sq. m. Pop. 90.

ROMANIA. State of S.E. Europe, a member of the League of Nations. It now has an area of 122,282 sq. m. and a population estimated at over 17,000,000. Rumania consisted in 1914 of the two principalities of Wallachia and Moldavia, together with the Dobruja on the other side of the Danube. To these were added after the Great War Bessarabia to the E., and Bukovina to the N. of Moldavia, with Transylvania and parts of the Banat. The capital is Bukarest (Bucharest).

The chief agricultural crops are maize, wheat, barley, oats, and rye. Forests cover about 17,000,000 acres. Large numbers of sheep, cattle, and other livestock are reared. The country is rich in minerals, including salt, lignite, petroleum, iron, copper, and lead.

Rumania, from the point of view of production and industry, can broadly be divided into two areas, the Old and the New Rumania. The former, with the exception of its vast supplies of petroleum, is mainly an agricultural area. The latter, particularly Transylvania, is largely a mineral-producing and industrial area. The chief petroleum districts are around Prahova, Damboritz, Bacau, and Buzau. Salt mining is a state monopoly. It is carried on over an area of some 250 sq. m. in the Lower Carpathians. There are over 9,000 m. of state rlys. and several private lines.



Rumania. Map of the Balkan kingdom as constituted after the Great War

chiefly in Transylvania. A radio station was built in 1929

Rumania corresponds to the Roman province of Dacia (q.v.). In the 14th century the two principalities of Walachia and Moldavia began to take definite shape. In 1456 Walachia fell under Turkish rule, and during the next few centuries it only enjoyed brief spells of comparative liberty. In the 15th century Moldavia's independence was threatened by the Turk, and the principality was eventually forced to admit Turkish suzerainty.



Rumania. Old farmer and his daughter in their orchard

their princes being elected for life instead of, as hitherto, holding their office at the pleasure of the Porte.

At the conclusion of the Crimean War the principalities were granted their independence under the suzerainty of the Porte, while a European Commission, in 1858, decided that each principality should have its own prince and elective assembly. The desire for union was, however, strong, and in 1866 a new constitution was promulgated, declaring the country to be a single and indivisible state under the name of Rumania.

The independence of Rumania was recognized both in the treaty of San Stefano in 1878 and in the treaty of Berlin signed in the same year, but she was compelled to accept the Dobruja in exchange for Bessarabia, which was annexed by Russia. The results of giving Rumania territory across the Danube, her natural frontier, were seen during the Second Balkan War in 1913, when she joined in the attack on Bulgaria and received as her share of the spoil a strip of land adjoining her former possession in the Dobruja.

On Aug. 27, 1916, Rumania, in accordance with a secret agreement with the Allies, declared war on Austria-Hungary. Germany immediately replied with a declaration of war. By Dec., 1917, Rumania had been completely conquered by the Austrians and Germans.

The peace treaties of 1919 gave Rumania the Rumanian lands in Hungary, Austria, and Russia, thus more than doubling her area and population, and virtually uniting the whole nation. The settlement introduced large alien elements—Magyar, German, Ukrainian, and Tartar—into the population. Another difficulty lay in the economic reorganization of the lands annexed from Hungary. Finally, the backward political and social condition of the kingdom made democratic measures necessary for the reform of the electoral system.

Almost at once the enlarged kingdom was invaded by the Bolsheviks under Bela Kun, but this inroad was beaten back. In 1920 a constituent assembly had been elected, and in 1922 the king and queen were crowned in the ancient city of Alba Julia. In 1923 a new and democratic constitution was adopted.

On July 20, 1927, King Ferdinand died. His son Carol had renounced the succession, but a party in the state still wished him to be king. However, his son Michael, a boy of six, succeeded, and a regency council was appointed. In 1930 Carol was reinstated as king. The constitution provides for a senate of 170 members and a chamber of deputies of 347.

RUMBOLD, SIR HORACE GEORGE MONTAGU (b. 1869). British diplomatist. Born Feb. 5, 1869, he was a son of Sir Horace Rumbold (1829-1913), who ended a long career in the diplomatic service by becoming ambassador in Vienna. Entering the same service, young Rumbold was sent to Teheran in 1895, Vienna, 1897, Cairo, 1900. In 1913, after experience at Munich and Tokyo, he was appointed councillor of embassy at Berlin. Minister to Switzerland, 1916-19, in the latter year he went to Poland, and in 1924 as ambassador to Spain. In 1928 he was transferred to Berlin.

RUMELIA, EASTERN. Dist. of S. Bulgaria. The middle portion is the wide level valley of the Maritsa; it lies between the Rhodope Mts. in the S.W. and the Balkans in the N. The chief town is Philippopolis (Plovdiv). Burgas, on the Black Sea, is the chief port. The province was Turkish before 1885, when it became Bulgarian. Its area is 11,641 sq. m. Pop. 1,372,065. See Bulgaria: Philippopolis.

RUMFORD, KENNERLEY (b. 1870). British singer. Born in London, Sept. 2, 1870, he was educated at King's School, Canterbury, and, gifted with a powerful bass voice, studied singing in Paris and under Henschel in London. He made his first concert appearance in London, 1897. In 1900 he married Clara Butt (q.v.), with whom he sang in many concert tours at home and abroad.

RUMINANT. Name given to those hoofed mammals of the even-toed order which chew the cud. In these animals the stomach is divided into a series of chambers. The hastily eaten and swallowed food passes into the rumen or paunch, whence it is later regurgitated to the mouth and thoroughly chewed, after which it passes to another division of the stomach for digestion. This provision meets the needs of animals which in a wild state graze largely and hastily by night, and then lie up under cover, where the food can be masticated at leisure. Oxen, sheep, goats, deer, and camels are ruminants. See Mammal.

RUNCIMAN, WALTER (b. 1870). British politician. The eldest son of Sir Walter Runciman, Bart., he was born at South Shields, Nov. 19, 1870. In 1899 he was elected M.P. for Oldham, losing his seat at the general election of 1900. In 1902 he was returned for Dewsbury, which he continued to represent until 1918. Runciman began his official career as parliamentary secretary to the local government board in the Liberal ministry formed in 1905. In 1907 he was made financial secretary to the treasury, and in 1908 he entered the Cabinet as president of the board of education. From 1911-14 he was president of the board of agriculture, and from 1914-16 of the board of trade. In 1924 and again in 1929 he was returned as M.P. for W. Swansea, and he acted as one of the Liberal leaders. In 1929 his wife was returned as Liberal M.P. for S. Ives.

RUNCORN. River port, market town, and urban dist. of Cheshire. It stands on the Mersey, 16 m. from Liverpool and 28 m. from Manchester, and has a station on the L.M.S. Rly. Here the Bridgewater Canal falls into the Mersey, and the Manchester Ship Canal passes by the town. Its industries include the manufacture of chemicals, soap, rope, etc. A rly. viaduct and a transporter bridge cross the Mersey here to Widnes. Market day, Sat. Pop. 18,393.

RUNE (Old Norse, *rún*, secret counsel). Any character in the pagan Scandinavian script. Derived, directly or indirectly, from a pre-Christian W. Greek alphabet, the first six characters in this system of writing denoted f, u, th, o, r, c. Runic alphabets are hence called futhorcs or futharks. The characters comprise uncurved strokes, adapted at first

for wood-carving, and to avoid following the grain they were made upright or slanting. Later on they proved to be equally suitable for incising bone, metal, and stone.

In Britain runes appear on a few Jutish brooches and other objects from Kent. There are 7th century runes on the Collingham stone in Yorkshire and the Bewcastle cross in Cumberland; the Ruthwell cross in Dumfriesshire is somewhat later. The earliest English coin, a gold solidus attributed to 460, bears runic characters.

-RUNNING. Running to-day is sport, pure and simple, and may be sub-divided into track-running and cross-country running.

Track-running may be sub-divided into short, middle, and long distance racing. Short distance racing is popularly known as sprinting. A sprint may occur at any time during a race longer than short distance.

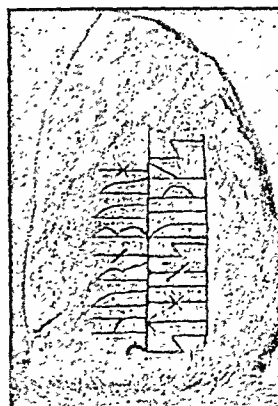
Middle distance running, as the name implies, approximates closely at its beginning to short distance and at its maximum length to long distance. Roughly speaking, middle distance running begins with the half-mile race, and concludes short of three miles.

Long distance races, 3 m. and upwards, are run on the same principle, save that the first strings of the opposing teams, for some two-thirds of the distance, often keep a considerable distance behind the leaders. Sound judgment and mutual understanding are required, as otherwise the second string of one or other of the teams may obtain such an advantage that it cannot be wrested from him. For long distance racing the pace for the most part of the distance should be a long, natural, springy stride. Beyond 10 m. running approximates more and more closely to pedestrianism.

The following are some of the leading running records:

Professional	
100 yds.	J. Donaldson (1910), 9½ secs.
120 yds.	J. Donaldson (1909), 11½ secs.
220 yds.	L. McLachlan (1902), 21½ secs.
440 yds.	B. R. Day (1907), 47½ secs.
½ m.	F. Hewitt (1871), 1 m. 53½ secs.
1 m.	W. G. George (1886), 4 m. 12½ secs.
10 m.	G. McCrae (1918), 50 m. 55 secs.
Amateur	
100 yds.	A. F. Duffy (1902), 9½ secs.
	D. J. Kelly (1906), 10½ secs.
	H. P. Drew (1914), 11½ secs.
	C. W. Paddock (1921), 12½ secs.
	C. Coafee (1922), 13½ secs.
	C. Bowman (1927), 14½ secs.
120 yds.	R. E. Walker (1908), 11½ secs.
	H. P. Drew (1914), 12½ secs.
220 yds.	R. Locke (1927), 20½ secs.
440 yds.	J. E. Meredith (1916), 47½ secs.
½ m.	O. Peltzer (1926), 1 m. 51½ secs.
1 m.	P. Nurmi (1923), 4 m. 10½ secs.
6 m.	P. Nurmi (1930), 29 m. 32½ secs.
10 m.	A. Shrubbs (1904), 50 m. 40½ secs.

RUNNIMEDE or **RUNNYMEDE.** Meadow along the S. bank of the Thames, near Egbam,



Rune. Stone found at Kallerup, Denmark, inscribed The Stone of Hurnburg, son of Svitha. It dates from c. 800

20 m. from London. There, or on Charter Island in the stream, King John signed Magna Carta, June 15, 1215. It was kept by the crown when adjacent portions of the Windsor estate, in the parish of Egbam, were sold in 1921, and now belongs to the nation. See John: Magna Carta; also illus. p. 1178.



Runnimeade Magan Carta House, built on the supposed site of the signing of the charter. See p. 1177

RUPEE (Skt. rupya, silver). Indian silver coin, the monetary unit of British India. Its nominal value is 1s 4d. It was first coined in 1542 by the emperor Sher Shah, and passes as current in Afghanistan, Seychelles, Mauritius, etc. Fifteen rupees equal £1 sterling, and the coin is divided into 16 annas. In British East Africa the rupee is the standard coin. A lac of rupees is written 1,00,000 rupees, a crore 1,00,00,000 rupees. See Lac.



Rupee. Obverse and reverse of the Indian silver coin, two-thirds actual size

RUPERT (1619-82). German prince. Son of the Elector Palatine, Frederick V, by Elizabeth, daughter of James I of England, he was born at Prague, Dec. 17, 1619. He fought in the Thirty Years' War on the Protestant side and came to England in 1642. Rupert fought at Worcester, Edgehill, Marston Moor, and Naseby, proving himself a dashing if somewhat erratic leader of cavalry. He commanded the royalist fleet from 1648 until 1650, when most of his ships were destroyed by Blake, off Malaga. After the Restoration he saw further naval service against the Dutch. Prince Rupert died Nov. 29, 1682.



Prince Rupert, Royalist soldier. After Van Dyck

RUPERT (b. 1869). Prince of Bavaria. The eldest son of Louis III, king of Bavaria, and the archduchess, Maria Theresa of Austria-Este.

he was born at Munich, May 18, 1869. He entered the German army as a subaltern in a Bavarian regiment in 1886. In 1904 he became a general and commander of the 1st Bavarian army corps. Rupert commanded the 6th German army and held other commands on the Western front, notably in the Ypres area in 1914-15. In 1917 he held the front from the Oise to the sea, and in 1918 he commanded a group of armies. To the British, Rupert is interesting as a descendant of Charles I. and, according to legitimist ideas, the rightful British sovereign as head of the house of Stewart. In Oct., 1921, on the death of his father, he became the head of the family. See Bavaria; Jacobites; Stewart.

RUPERT'S LAND. Former name for the part of Canada around Hudson Bay. Named after Prince Rupert, one of the founders of the Hudson's Bay Company, it was sold in 1869 to the Dominion, and is now divided among the provinces of Quebec, Ontario, and Manitoba and the North-West Territories. One of Canada's Church of England archbishops is known as the archbishop of Rupert's Land.

The river Rupert flows through Quebec to James Bay. Its length is 380 m. See Canada.

RUPTURE (Lat. ruptura, breaking). In medicine the intrusion of an organ or tissue through an abnormal opening. It is also used for breaking or bursting, e.g. rupture of a blood vessel or aneurism. See Hernia.

RURAL DEAN. Ecclesiastical functionary. Rural deans reported to the bishop on the behaviour of clergy and laity and the condition of church fabrics, and attended the episcopal synods as representatives of the rest of the clergy in their respective deaneries. After a time their duties were virtually absorbed by the archdeacons; but during the 19th century the office again came into prominence.

RUSH (Juncus). Large genus of perennial and a few annual herbs of the order Juncaceae. Natives chiefly of the temperate and cold regions, they have smooth, rounded stems either hollow or filled with white pith. The leaves are flat or rounded like the stems, or reduced to sheaths closely pressed to the stems. The green or brown flowers are very small, but rendered conspicuous by being clustered at the ends or sides of the stems. They grow chiefly on wet soils and sandy sea-shores. The pith was formerly used as wicks for rushlights; and the flattened stems are plaited into mats.



Rush. Leaves and flowers of sea-rush

RUSHDEN. Urban dist. of Northamptonshire. It is 4 m. from Wellingborough on the L.M.S. Rly. S. Mary's church is a fine building, mainly in the Decorated style. Boots and shoes are manufactured. Pop. 13,511.

RUSH NUT (Cyperus esculentus). Perennial sedge of the order Cyperaceae, native of S. Europe. It has a tuberous root-stock and grass-like leaves. The greenish flowers are clustered. The tubers are used as food in S. Europe, and when roasted are said to form a substitute for coffee.

RUSKIN, JOHN (1819-1900). British author. Born in London, Feb. 8, 1819, the son of a wine merchant, he was educated privately and at Christ Church, Oxford, where he won the Newdigate prize for English verse. His interest in art, fostered by travel in Italy, first showed itself in 1841 in an essay on Turner. The next fifteen years or so was occupied with writing the many volumes of Modern Painters. The Seven Lamps of Architecture, and The Stones of Venice. There was a distinctly ethical note in Ruskin's writings on the subject of art.



John Ruskin, British author. Fred Holtzer

Following this line of thought, Ruskin came forward as a social reformer. In 1860 Until this Last, in which he attacked the materialist basis of political economy, appeared in The Cornhill Magazine. In Time and Tide he upheld the importance "of honesty of work and honesty of exchange," and in

Sesame and Lilies he deplored the influence of industrialism upon art and morality: in his opinion it was wholly bad. The Crown of Wild Olive also denounced the evil tendencies of an industrial age. Fors Clavigera, 1871-84, consists of nearly a hundred letters addressed "to the labourers and workmen of Great

Britain." He followed it in 1885-89 with the autobiographical Praeterita, containing the valuable sketch of his religious development. In 1869 Ruskin was elected Slade professor of art at Oxford. He held the post until 1879, and again during 1883-84.

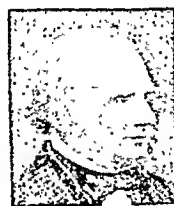
Among the episodes of his chequered life mention should be made of his unhappy marriage, in 1848, with Euphemia Gray, who obtained a decree of nullity in 1855 and married Sir J. E. Millais. In later years his mind was clouded, and he lived at Brantwood, Coniston, where he died on Jan. 20, 1900.

RUSKIN COLLEGE. In Walton Street, Oxford, this was founded in 1899 to enable working men and women to train for public life.

Ruskin College at Ruskin, Florida, U.S.A., was established there in 1907, having been removed from Glen Ellyn, Illinois.

RUSSELL. Name of a famous English family. Early in the 15th century a certain Henry Russell, a merchant, represented Weymouth in Parliament. His grandson, John Russell, married an heiress, and in 1539 was made a baron. His wife brought him the estate of Chenies, in Buckinghamshire, and on the dissolution of the monasteries he secured large estates in London and in the counties of Bedford, Cambridge, and Devon. In 1550 he was made earl of Bedford. Branches of the family hold the titles of Earl Russell and Baron Amphil. See Bedford, Duke of.

RUSSELL, JOHN RUSSELL, 1st EARL (1792-1878). British statesman, known as Lord John Russell. A younger son of the 6th duke



Earl Russell, British statesman

of Bedford, he was born Aug. 18, 1792. In 1813 he entered the House of Commons as M.P. for the family borough of Tavistock. From 1820-26 he represented Huntingdonshire, after which he was, in turn, member for Bandon Bridge, Tavistock, Devonshire, Stroud, and the city of London.

In 1830 Russell joined the Whig ministry as paymaster-general and, although not in the cabinet until June, 1831, he was closely associated with the passing of the Reform Act of 1832, which he introduced. In 1835 he became home secretary and leader of the House of Commons, and he remained in office until the fall of the Whigs in 1841, having been colonial secretary since 1839. In 1845 Russell declared for free trade, and when, in June, 1846, Peel resigned, he became premier, remaining so until Feb., 1852. Of the coalition ministry under Lord Aberdeen, Russell was a member, being foreign secretary for a year and leader of the House of Commons, 1852-55. In 1859 he took the post of foreign secretary under Palmerston, and in 1861 he was made an earl. He succeeded Palmerston as prime minister in Oct., 1865, but resigned in June, 1866, on the failure of his reform bill. He died at Richmond, May 28, 1878.

Russell's title passed to his grandson, John Francis Stanley Russell (b. 1865). The son of Viscount Amberley, he became an engineer and a barrister, and was prominent through his efforts to alter the divorce law, and was also known as a motorist. He joined the labour party, and in 1929 was appointed parliamentary secretary to the ministry of transport. The earl's third wife was Countess Armin (q.v.).

RUSSELL OF KILLOWEN, CHARLES RUSSELL, BARON (1832-1900). British lawyer. Born of Roman Catholic parents at Newry, Nov. 10, 1832, he became a solicitor in 1854. In 1859 he was called to the English bar, practising first in Liverpool, where his ability speedily brought him to the front. He was equally successful in London, and in 1872 became

a Q.C. In 1880 he entered Parliament as Liberal M.P. for Dundalk, and in 1885 was returned for S. Hackney. In 1886 Russell was appointed attorney-general, a post he held again 1892-94. In 1894 he was made a lord of appeal and a life peer, and then lord chief justice. He died Aug. 10, 1900, leaving five sons.

Russell was one of the greatest British advocates and judges of the 19th century. His greatest forensic feat was, perhaps, his appearance for the Irish leader before the Parnell commission. He defended Mrs. Maybrick in 1889. See Maybrick Case.

RUSSELL, LORD WILLIAM (1639-83). English politician. He was born Sept. 29, 1639, the third son of the first duke of Bedford, and was educated privately and at Cambridge. After the Restoration he became member of Parliament for Tavistock, and in 1679 for Bedfordshire. In 1683 he was arrested as participant in the Rye House Plot (q.v.), and, on the flimsiest evidence, found guilty of treason and executed in Lincoln's Inn Fields, London, July 21, 1683. A tablet marks the place where Russell was beheaded.

RUSSELL, BERTRAND ARTHUR WILLIAM, (b. 1872). British philosopher and mathematician. Born at Trelleck, Monmouth, May 18, 1872, the second son of Viscount Amberley, he was educated at Trinity College, Cambridge, where he became lecturer and fellow. He rapidly acquired a wide reputation for his criticisms of the philosophy of H. L. Bergson. One of the leaders of modern symbolic or mathematical logic, Russell wrote many important works on mathematics, philosophy, and sociology. Among his works are *Philosophical Essays*, 1910; *Principles of Social Reconstruction*, 1916; *The Analysis of Matter*, 1927, and *Sceptical Essays*, 1928.

RUSSELL, GEORGE WILLIAM (b. 1867). Irish poet and economist, best known by his pen name of A.E. Born at Lurgan, co. Armagh, April 10, 1867, he spent his early years in Dublin, entering the School of Art in 1883. He worked as an accountant, meanwhile painting and writing lyrical poems of great beauty, and worked with Sir Horace Plunkett in establishing the Irish Agricultural Organization Society. He was also a leader in the Irish literary revival and a pioneer of the Abbey Theatre, Dublin, where his play *Deirdre* was produced in 1902.

RUSSELL, WILLIAM CLARK (1844-1911). British novelist. Born in New York, Feb. 24, 1844, a son of Henry Russell (1812-1900), composer of *Cheer, Boys, Cheer*, he spent seven years at sea, in the British merchant service, and retiring in 1866, took to journalism. In 1874 he produced his first novel, *John Houldsworth*, Chief Mate, the forerunner of some 50 others, among which are *The Wreck of the Grosvenor*, *An Ocean Free Lance*, *Jack's Courtship*, and *List, Ye Landsmen*. He died Nov. 8, 1911.

RUSSELL, SIR WILLIAM HOWARD (1821-1907). British war correspondent. Born at Lily Vale, co. Dublin, March 28, 1821, and

educated at Trinity College, Dublin, he became attached to *The Times* as a reporter, and on the outbreak of the Crimean War was sent on behalf of the paper to the East. His vivid dispatches drew attention to the disgraceful mismanagement of the commissariat and the medical service, and contributed largely to the fall of the Aberdeen ministry. Russell's further experience as a war correspondent included the *Indian Mutiny* and the American Civil War; the Austro-Prussian War of 1866; the Franco-Prussian War of 1870; and the Zulu War, 1879. Knighted in 1895, he died Feb. 10, 1907.

RUSSIA. Country of Europe and Asia, since 1917 under Bolshevik or Soviet rule. Moscow is the capital. Its area is 9,252,000 sq. m. Pop. 147,000,000.

This vast area, covering one-seventh of the world's land area, is controlled by the Union of Soviet Republics. The Union consists of seven republics, or groups of republics, each with its own soviet. The four which formed the union in 1922 are Russia, which includes much of Asiatic Russia and is far the largest of all, Ukraine, White Russia, and Transcaucasia. Three others Turcoman, Uzbekistan, and Tajikistan, joined later. Attached to Russia are the small republics of Bashkir, Chuvash, Crimea, Daghestan, Karelia, Kazak, Kirgiz, Yakutsk and several others. The Transcaucasian republic consists of Armenia, Azerbaijan, and Georgia.

The supreme authority is exercised by the congress of soviets, which consists of representatives of the local soviets on the basis of one deputy for every 25,000 electors, and of representatives of provincial congresses on the basis of one for every 125,000. The congress elects an executive committee of about 400 members, and this constitutes the legislative, administrative, and controlling body. The actual direction of affairs is in the hands of a council of commissaries, 12 or 14 in number. These are the president and vice-president and other members who are the heads of the various departments of state. All citizens over 18 years of age may vote at elections, except only those who employ others for profit, those who live on unearned income, priests and monks of all religions, and certain other classes.

HISTORY. In 1547 Ivan took the title of tsar of all the Russias and began the conquest of Siberia. Peter the Great founded St. Petersburg and introduced western ideas. Under Catherine II Russia became a great power, extending her European territories by annexing much of Poland and the Crimea. In the 19th century Alexander II (1855-1881) attempted to liberalise political institutions by freeing the serfs and establishing a new judicial procedure.

Revolutionary movements, due mainly to the ineptitude and corruption of tsarist bureaucracy, spread widely after the Russo-Japanese War (1904-05). In March, 1917, the Russian nation, under the influence of the suffering and official corruption revealed in the Great War destroyed Tsarism and established a socialist republic. This made way in November, 1917, for a Bolshevik Government under Nikolai Lenin. The Bolsheviks made peace with Germany, sacrificing great territories, and waged successful war against the tsarist armies, defeating them in sections, despite liberal aid given by the Allied Powers.

Nicholas and his family were murdered in a cellar in Ekaterinburg.

The Bolsheviks established a working-class republic, disestablished and disendowed the Church, abolished all private property, made private trade illegal, and deprived all, except members of the working classes, of any rights whatever. They arrested, imprisoned, or secretly exiled large numbers of men and women of the middle and upper classes. Factories were placed under the control of the workers, and attempts made to establish a system of harter between town and country which would eventually abolish the use of money. They simultaneously launched a revolutionary campaign in morals, openly fighting religion and aiming to substitute group and institutional for family life. They also organized the International Communist Party to promote world revolution.

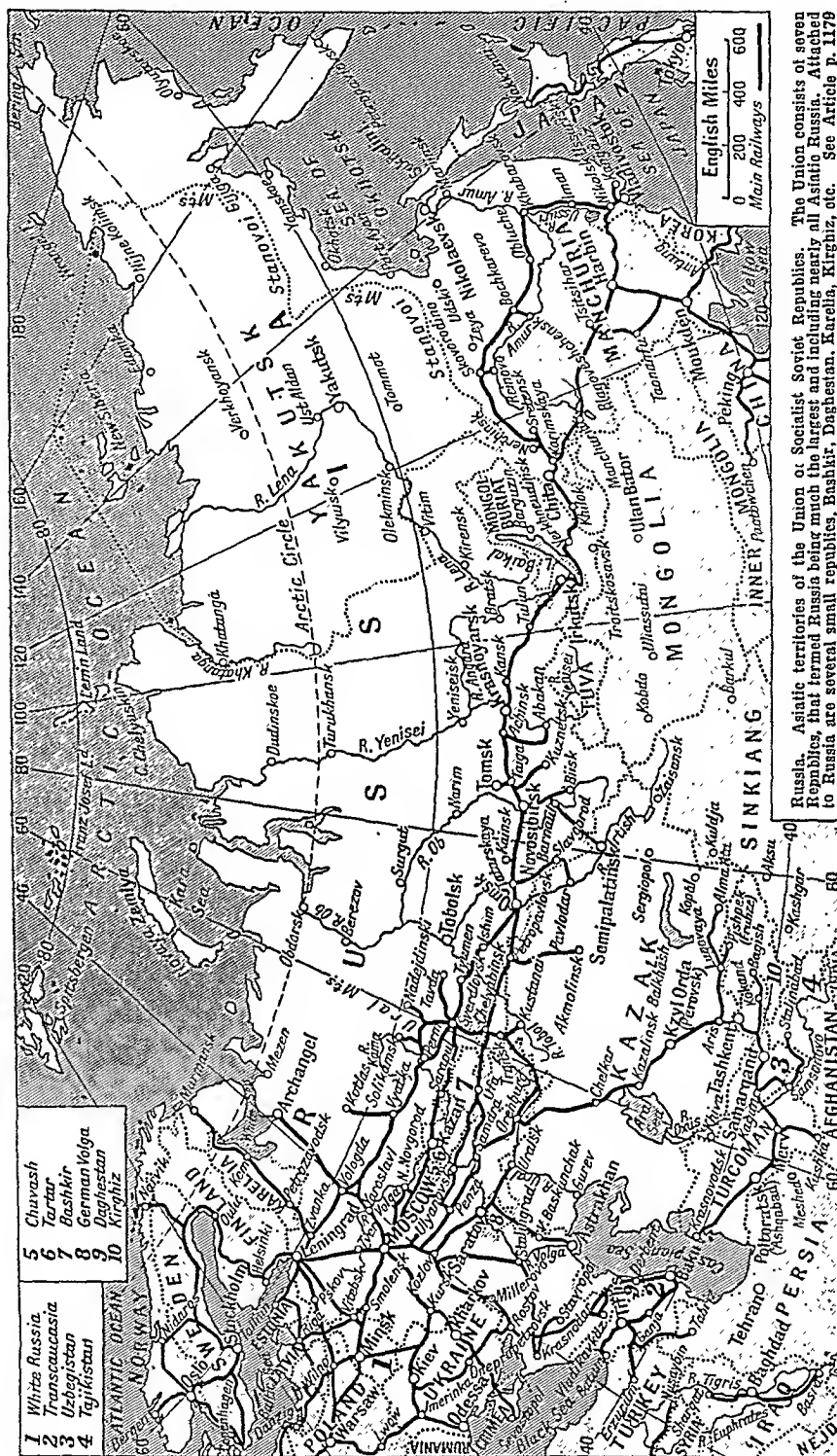
Harshness and inexperience in administration caused widespread suffering and distress, which culminated in a severe famine in 1921. Lenin persuaded his followers to modify Bolshevism by permitting again small private ownership and some private trading under the phrase "new economic policy." Lenin's illness and death in 1924 enabled the extreme Bolsheviks to reassert themselves under Stalin. They instituted a severe persecution of religion, again suppressed most private trading, and attempted to destroy completely private farming by shooting or sending into exile the more prosperous



Russia. 1. Cabdriver clad to resist cold. 2. Farm hands with out-of-date implements. 3. Peasant girl from Perm

farmers. Simultaneously they launched an enormous scheme of industrial expansion, known as the Five Years' Plan, aiming to make Russia a leading manufacturing nation. Stalin's policy again brought Russia to widespread distress. Peasants hid their crops and destroyed their cattle, and hunger and a shortage of all manufactured goods were general in the cities. The Bolsheviks controlled absolutely the press and public meetings and allowed no freedom of criticism. See Bolshevism; map, p. 1180; Ukraine, etc.

RUSSIAN BALLET. The first phase of the serious development of ballet in Russia dates from the 18th century, but at first the imperial ballet was completely under the influence of France and Italy. It was not until well on in the 19th century that the famous ballet master Marius Petipa set himself to reorganize the imperial ballet on more national lines. Training schools were founded in connexion with all the state opera houses, and in the later part of the century the art of ballet was more brilliantly alive in Russia than in any other European country. In 1908 the impresario Serge Diaghilev founded the great touring company which for twenty years had an extraordinary vogue in France, Germany, Spain, and England.



RUSSO-JAPANESE WAR. Struggle carried on in Manchuria in 1904-05. It was due primarily to the refusal of Russia to restore to China Port Arthur, which she had seized. War was declared by Japan on Feb. 6, 1904. Having gained command of the sea, the Japanese armies were landed and, after some initial victories, began the siege of Port Arthur in June. The Russian attempts to relieve the fortress led to some desperate battles, but these were of no avail, and on Jan. 2, 1905, it surrendered, having cost Japan 100,000 casualties. The last major engagement was fought at Mukden in Feb.-

March, 1905, the result of some terrible fighting being to force the Russians from their prepared positions. At sea the Russian Pacific fleets were destroyed, and in May, 1905, the Baltic fleet, which had come almost round the world to assist, was annihilated in Tsushima Strait.

The tsar accepted the mediation of the U.S.A., peace negotiations were opened at Portsmouth, U.S.A., and on Sept. 5, 1905, a treaty was signed. Russia ceded half Sakhalin, the Kwantung Peninsula, and Port Arthur, evacuated Manchuria, and recognized Japan's sphere of influence in Korea.

RUST. Reddish product of the oxidation of iron in water or in the atmosphere. Chemically it is hydrated ferric oxide. There is doubt as to the precise method of its formation. Rusting is not a direct oxidation; iron will not rust in water, even if oxygen be present, if the water be free from acid; but the presence of a small proportion even of such an acid as carbonic will cause rusting. In this case it is supposed that the carbonic acid acts as a catalyst, another theory regarding the action to be electrolytic. Rusting in the atmosphere is brought about by the combined action of air, moisture, and carbonic acid, which the atmosphere always contains.

Rustless or stainless steel contains a proportion of chromium, which renders the metal incombustible. See Steel.

RUSTENBURG. Town of the Transvaal. It is 60 m. by rail from Pretoria, standing under the Magaliesberg Mts., which form an extensive half-circle round the town. The climate is hot, and the town is a centre for tobacco growing. Pop. 1,733 whites.

RUST FUNGI (Uredineae). Order of plant parasites. An example is the rust of wheat. The vegetative portion exists as threads between the cells of the victim, and branches enter the cells and feed upon their contents. They produce several kinds of fructification, which burst through the cuticle. The spores produced on the barberry will not germinate on the barberry, but they will do so on wheat, barley, and rye, when they produce a characteristic rust. See Fungus.



Rust Fungi. Hawthorn twig attacked by *Raestelia lacerata*

RUTH. Moabites, whose story is given in the eighth book of the O.T. known as the Book of Ruth. Daughter-in-law of Naomi, and wife, first of Mahlon, and then of Boaz, she is specially remembered for the disinterested love which displayed itself in her resolute refusal to forsake her mother-in-law in the latter's distress. The words (Ruth 1, 16-17) "Intreat me not to leave thee," etc., are among the most beautiful in all literature. The action is placed in the period of the Judges, and most of the narrative is written in a pure and early style of Hebrew.

RUTHENES. Term in common use for the Ukrainians of the former Austro-Hungarian monarchy and the Polish district of Kholm. The great majority form a Uniat Church. The total Ruthenian pop. is 3,800,000. In a great part of Galicia the Ruthenes form the mass of the labouring population, and have long been dominated by the Polish landed gentry.

The Ruthenian Church, the largest of all Uniat Churches, submitted to Rome at the synod of Brest-Litovsk in 1596, and was extended in 1700 and 1702. It has an archbishop at Lemberg, and uses the old Slavonic liturgy. The church was suppressed in Russian Poland by the Russian government in 1873.

Ruthenia, named after them, is an autonomous dist. of Czechoslovakia. Formerly the N.E. corner of Hungary, mainly inhabited by Ruthenes, it lies between the Tisa (Theiss) and the Forest Carpathians; the boundary on the W. is the Ung river. Its area is 4,886 sq. m. Pop. 702,846.

RUTHENIUM. One of the rare metallic elements of the platinum group. Its symbol is Ru; atomic weight, 101.7; atomic number, 44; melting point, 2,500° C. It is hard, brittle, and one of the least fusible of metals, but the most easily oxidized of the group. The metal is a powerful catalyst, absorbing gases readily.

It occurs in platinum ores of the Urals, associated with osmium and iridium ores, and in laurite, and was first isolated in 1845.

RUTHERFORD, SIR ERNEST (b. 1871). British physicist. Born at Nelson, New Zealand, Aug. 30, 1871, he was educated at Canterbury College, Christchurch, New Zealand University, and Trinity College, Cambridge. He was Macdonald professor of physics at McGill University, Montreal, 1898-1907, professor of physics at Manchester University, 1907-19, and became Cavendish professor of physics and director of the Cavendish Laboratory at Cambridge in 1919.

Rutherford carried out a series of brilliant researches on the ultimate constitution of matter which placed him in the front rank of the world's physicists. For his work on radioactivity he received many honours, including the Nobel prize for chemistry, 1908. Knighted in 1914, he was created O.M., 1925. His works include Radioactivity, 1904; Radioactive Transformations, 1906; Radioactive Substances and their Radiations, 1913.

RUTHERFORD, MARK. Pseudonym of the British novelist William Hale White (1831-1913). Born at Bedford, he was educated at theological colleges at Chesham and Hampstead for the Congregational ministry, but abandoned that career and earned a livelihood by writing. Later he became assistant director of contracts under the admiralty. His early novels, *The Autobiography of Mark Rutherford*, 1881; *Mark Rutherford's Deliverance*, 1885; and *The Revolution in Tanner's Lane*, 1887, though neglected at first, gradually secured recognition for their handling of moral and other problems. He died March 14, 1913.

RUTHERGLEN. Burgh of Lanarkshire, Scotland. It stands on the left bank of the Clyde, 2 m. from Glasgow, on the L.M.S. Rly. The industries include the making of chemicals, cotton, paper, pottery, and rope, also dyeing and shipbuilding. Pop. 24,744. Pron. Ruglenn. Rutherford in Victoria is 170 m. by rail N.E. of Melbourne, close to the Murray. It is an important road junction. Pop. 2,400.

RUTHIN or **RUTHYN.** Borough and market town of Denbighshire, Wales. It stands on the Clwyd, 8 m. from Denbigh, on the L.M.S. Rly. St. Peter's Church dates from the 14th century, and was once collegiate. The grammar school was founded in 1598. The town grew up around a castle built by the English in the 13th century and known as the Red Castle (Welsh, rhudd, din). Henry VII made it a corporate town, and the family of de Grey, who held the title of Grey de Ruthyn, was connected with it. Market days, Mon. and first Tues. in month. Pop. 2,767.

RUTHVEN. Name of a noble Scottish family. Sir William Ruthven was made a peer in 1488. His great-grandson Patrick, the 3rd Lord Ruthven (c. 1520-66), was a leader of the party that slew Rizzio, and he fled to England to escape Mary's vengeance. His son William (c. 1541-84), the 4th lord, was made earl of Gowrie. He was the earl who planned the raid of Ruthven, in which the young James VI was taken from Perth to Ruthven Castle, in 1581.

In 1651 Charles II granted the title of Lord Ruthven to Sir Thomas Ruthven, grandson of the 2nd Lord Ruthven, from whom, through several female descendants, the title has come to the present holder, who belongs to the family of Hore-Ruthven. Pron. Rivven.

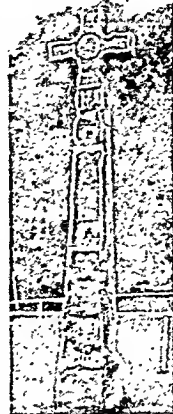
RUTHWELL. Village of Dumfriesshire, Scotland. It is 5 m. from Annan, with a station on the L.M.S. Rly. It is famous because of its cross. Dating from the 7th century, this has carvings of the Crucifixion on the front and back and some verses of the extant poem, *The Dream of the Holy Rood*, attributed to Caedmon, in runic letters on the sides. Regarded as a monument of idolatry, the cross was broken by order of the general assembly in 1642, but was restored in 1802. The village of Ruthwell was at one time a burgh.

RUTLAND. County of England. Wholly inland, it is bounded by Lincolnshire, Leicestershire, and Northamptonshire, and has an area of 152 sq. m. It is divided into two parts by the Gwash or Wash, which crosses the county to join the Welland, which forms the S.E. boundary. Much of the land is permanent pasture: many cattle and sheep are reared, wheat is grown, and cheese is made. Oakham is the county town, and Uppingham, with its school, is in the county. Rutland is served by the L.M.S. Rly. It is in the diocese of Peterborough and is a hunting shire. Pop. 18,376.

RUTLAND, EARL AND DUKE OF. English titles borne by the family of Mannors since 1525. Thomas Mannors received from Henry VIII Belvoir Castle and lands in Leicestershire, and was made an earl in 1525. Sir John Mannors, the first earl's second son, obtained Haddon Hall (q.v.) by his marriage with Dorothy Vernon. John, the 9th earl (1638-1711), was made marquess of Granby and duke of Rutland in 1703. The third duke was the father of the soldier marquess of Granby, whose name is frequently found on inn signs. Charles, the 4th duke (1754-87), was lord-lieutenant of Ireland. The family estates are in Leicestershire and Derbyshire. The duke's eldest son bears the courtesy title of marquess of Granby.

John James Robert Mannors (1818-1906), who became the 7th duke in 1888, was born Dec. 13, 1818. Chosen M.P. for Newark in 1841. Lord John Mannors became a prominent member of the Young England Party. He was first commissioner of works in the Tory ministries of 1852, 1854-59, and 1866-68. He was postmaster-general, 1874-80 and 1885-86, and chancellor of the duchy of Lancaster, 1886-92. He died Aug. 4, 1906.

RUWENZORI. Mountain range of Africa. It lies between Lakes Albert and Edward in the Uganda Protectorate, and has been identified with the fabled mountains of the moon.



Ruthwell. The 7th century Celtic Cross



Sir Ernest Rutherford, British physicist
Elliott & Fry



Rutland. Map of the smallest county of England, with an area of 152 sq. m.

The length of the range is about 70 m., with a minimum breadth of about 30 m. The existence of Ruwenzori was first made known by Sir H. M. Stanley during his expedition of 1887-89. Some of the peaks rise to over 16,000 ft. The range feeds the four lakes, Edward, George, Albert, and Victoria, as well as the Semliki river. On the W. is the Ituri forest, the greater part of which is contained within the Belgian Congo.

RUYSDAEL, JAKOB VAN (c. 1628-82). Dutch painter. Born at Haarlem, he studied surgery as a youth, but took up painting on the advice of Nicolas Berchem. He became a citizen of Amsterdam in 1659, but the proceeds from his art were so poor that he was forced to apply to the Mennonite almshouse at Haarlem for maintenance. He painted the environs of Haarlem, and romantic woods, streams, waterfalls, and ruins, becoming one of the greatest landscapists of his time. He died March 14, 1682. Pron. Roisdahl.

RUYSER, MICHAEL ADRIANZSOON DE (1607-76). Dutch sailor. Born at Flushing, March 24, 1607, he went to sea. In 1640 he commanded the Dutch fleet against Spain, whom he defeated at the battle off Cape St. Vincent, Nov. 3, 1641. From 1653-65 he was engaged in various adventures in the Mediterranean and elsewhere. Sent with a fleet against England in 1666, he defeated Monk off the North Foreland, June 1-4, and chased the English up the Thames. The following year he again entered the Thames, burnt Chatham dockyard, and for a while threatened London. His next engagement of importance was at Southwold Bay, where he fought the French and English fleets, but failed to win a decisive victory. The remainder of his life was spent at sea, in constant battles against the French, in one of which he was mortally wounded off Messina, dying at Syracuse, April 29, 1676. Pron. Roiter.



M. A. de Ruys, Dutch sailor

RYAN. Loch or inlet on the N.W. coast of Wigtownshire, Scotland. It extends 8 m. S.E. from the Firth of Clyde to Stranraer, and is from 1½ to 3 m. wide.

RYDAL. Lake of Westmorland, usually known as Rydal Water. It is between Grasmere and Windermere. It is 1,000 yds. long and 500 yds. wide. Near the E. end is Rydal village. In the grounds of Rydal Hall are Rydal Falls. See Lake District.

Rydal Mount is a house overlooking Rydal Water. In it Wordsworth lived from 1813 until his death, April 23, 1850.

RYDE. Borough and watering place of the Isle of Wight. It stands on the N.E. coast 4 m. from Portsmouth. A terminus of the Isle of Wight Rly., it is also connected with Portsmouth and other ports by a steamboat service. There are a long pier, excellent sands, and public gardens. It is a yachting centre. About 2 m. from the town are the ruins of Quarr Abbey, a Cistercian house founded in 1131. The modern abbey belongs to the Benedictines, who settled here on the expulsion of the religious orders from France. Pop. 11,295.

RYE (Secale cereale). Cereal largely grown for grain in North Europe. The so-called "black" bread is made from the flour. In Great Britain it is nearly always cultivated as a forage crop for spring feed. Rye is more tolerant of poor soil than the other cereals. There are summer and winter varieties. The former is sown in spring and matures quickly, though it does not give a large yield. Winter rye ripens at the end of July or early in



7th Duke of Rutland, British statesman

August. The straw is used for thatching, and also makes good litter. See Agriculture; Crops.

RYE. Borough and market town of Sussex, one of the Cinque Ports. It is on the Rother, about 2 m. from the coast, on the Southern



Rye Land Gate, built by Edward III
Frith

Rly., and is 72 m. from London. Among the chief objects of interest are the large church of S. Mary, the Ypres tower built in the 12th century, the Land Gate and other remains of the fortifications. There are many old houses, and the appearance of the town is picturesque. The Mermaid Inn is famous. Pocock's School dates from the 17th century, and there are remains of an Augustinian foundation in the shape of a small chapel. Rye was a flourishing port soon after the Norman Conquest and became one of the chief of the Cinque Ports. The silting up of the harbour has caused the sea to recede. Market day, Wed. (alternate). Pop. 3,918. See Cinque Ports.

RYE GRASS (*Lolium perenne*). Perennial grass, useful in permanent pasture, and in mixed grass farming. Mixed with clover in the proportion of 25 p.c., rye grass forms a good pasture for sheep.

RYE HOUSE PLOT. Alleged plot to murder Charles II and his brother James and organize an insurrection in 1633. The name is derived from Rye House, near Hoddesdon in Hertfordshire. Of those implicated Lord William Russell and Algernon Sidney were beheaded, John Hampden was heavily fined, and the earl of Essex committed suicide. See Russell, Lord William.

Ryhope. Watering place of Durham. It stands on a bay 3 m. from Sunderland, on the L.N.E.R. Pop. 11,650.

RYKOFF, ALEXEI IVANOVITCH (b. 1881). Russian leader. Banished for treason under the tsardom, he escaped and joined the Bolsheviks. Later he was exiled to Siberia, but escaped in 1914. He became President of the Council of Commissaries of the U.S.S.R. In 1929 he was deprived of this post, but was allowed to retain that of president of the council of commissaries of the Great Russian Soviet Republic.

RYLANDS, JOHN (1801-88). British merchant. Born at St. Helens, Feb. 7, 1801, he became head in 1847 of a cotton manufacturing business founded in 1819 by his father and brother. He died at Stretford, Dec. 11, 1888.

The John Rylands library, in Deansgate, Manchester, was erected, equipped, and endowed by Enriqueta Augustina Rylands in memory of her husband. Of its 250,000 books and MSS., the nucleus was the Althorp Library. See Althorp; Manchester.

RYSWICK, TREATY OF. Treaty that, in 1697, ended the European War, that had raged since 1689. Ryswick is a village 2 m. S. of The Hague, where meetings took place

between the representatives of France, England, the Empire, and the Netherlands. The treaty was signed Sept. 20, 1697, by England, Spain, and the Netherlands. The emperor refused at first to agree, but on Oct. 30 came into the peace. The treaty was a humiliation for France, as Louis XIV surrendered all he had taken since 1679 except Strasbourg. He recognized William III as king of England, and promised to cease supporting James II. To him, on the other hand, Nova Scotia and Pondicherry were restored.

RYTON. Urban dist. of Durham. It stands on the river Tyne, 6 m. from Newcastle, with a station on the L.N.E.R. There are iron and steel works, collieries, and quarries. Pop. 14,263.

S. Nineteenth letter of the English and Latin alphabets. It is hard and sharp, as in sit, or soft and flat, as in his. It also represents zh, the French j, as in leisure. S always has a hard sound at the beginning of words. In the termination, sion, if a consonant precedes, sh is heard, as in passion (also in sure, sugar); if a vowel precedes, zh is heard, as in decision. S is mute in isle, island, viscount, Carlisle, Grosvenor, the preceding vowel being at the same time lengthened. See Alphabet.

SAALE. River of Germany, a tributary of the Elbe. It flows from the Fichtelgebirge in Bavaria for 226 m. to the Elbe, 25 m. above Magdeburg. It is canalised for 103 m. and leads by canal to Leipzig. Halle is the chief town on its banks, and another is Saalfeld, 31 m. from Jena.

SAAR OR SARRE. River of France and Germany. It rises in the Vosges Mts. in Alsace, and flows 152 m. into the Moselle, a few miles above Trèves. It is connected by the Saar Canal with the Rhine-Marne Canal.

SAAR BASIN. This district of Central Europe is under the control of the League of Nations. It lies between the new French frontier of the dept. of Moselle (Lorraine) and the detached portion of Oldenburg. Until 1934 the dist. is to be governed by a commission of five, chosen by the League of Nations; then a plébiscite is to decide for continuance of the status quo, or union with France, or with Germany. The area is 726 sq. m. The chief towns are Saarlouis, named after Louis XIV, who founded it as a fortress, and Saarbrücken. Pop. 770,000.

SAARBRÜCKEN. Town of the Saar Basin. It is 40 m. S.E. of Trèves, is the centre of an extensive coal district, and manufactures cloth, porcelain, leather, tobacco, oil, vinegar, and beer. It was founded in the 10th century Pop. 125,000.

SABADILLA (*Schoenocaulon officinale*). Bulbous perennial of the natural order Liliaceae. A native of Mexico, it has exceedingly long, narrow, grass-like leaves and a long, cylindrical spike of tiny yellow flowers. The seeds yield the drug veratrine, a powerful irritant poison, sometimes used as a remedy in neuralgia and rheumatism.



Sabadilla. Flower and leaf

SABAEAN. Ancient people in S.W. Arabia. Speaking a S. Semitic dialect, the Sabaeans engaged in agriculture, mining, and caravan transport. They controlled a gold and spice trade (Isaiah 60), and took toll of early commerce with India and E. Africa.

SABATIER, PAUL (1858-1928). French scholar. Born at S. Michel de Chabrillanoux, Aug. 3, 1858, his father was a Protestant

pastor. Educated at the university of Paris, he became in 1885 pastor of a church in Strasbourg, but in 1889 was expelled for refusing to abandon his French nationality. From 1889-93 he was pastor at S. Cierge in the Cévennes. He wrote a notable Life of S. Francis and A Frenchman's Thoughts on the War. He died March 20, 1928.

Sabatier's elder brother, Louis Auguste (1839-1901), was a professor at Strasbourg.

SABATINI, RAFAEL (b. 1875). British author. Born of Italian and English parentage, at Jesi, Italy, he was educated in Switzerland and Portugal. He is the author of a number of vividly written historical novels and tales. His books include The Tavern Knight, 1904; Bardelys the Magnificent, 1906 (dramatised 1910); Anthony Wilding, 1910; The Sea Hawk, 1915; The Snare, 1917; The Historical Nights' Entertainment, 1918-19; Scaramouch, 1921; and Captain Blood, 1922. He wrote a Life of Cesare Borgia, 1912, and Torquemada and the Spanish Inquisition, 1913.

SABBATH (Heb. shabbath, from shabath, to desist). In the Jewish religion, the seventh day of the week, kept sacred by worship and cessation of work. In the oldest parts of the Mosaic law, e.g. Ex. 23, 12, rest on the seventh day is enjoined. The Sabbath was observed by many Christians during the first three centuries, in addition to Sunday.

According to the Mosaic law, the Sabbatical Year was every seventh year (Ex. 23; Lev. 25; Deut. 15 and 21; Neh. 10). During it the land was to lie fallow; spontaneous growth was to be shared; with certain exceptions, debts were to be remitted. See Sunday.

SABINES. Ancient Italian people, comprising the Sabini, Sabelli, and Samnites of central and south Italian tribes. Their earliest home was Amitemnum, at the foot of the Apennines. They were for long the greatest power in Italy and are famous as the people

whose women were treacherously seized by the Romans at the festival of the Consualia. The Sabines were incorporated with Rome in 268 B.C.



Sable. Small mammal with valuable fur

SABLE (*Mustela zibellina*). Small carnivorous mammal. It belongs to the weasel tribe and resembles a marten. It is about 18 ins. long and its fur is of great value for commercial purposes. It was formerly common in N. Asia, but incessant trapping has restricted its range to the E. districts of Siberia.

In heraldry, sable is the name for black, represented in drawing by thin vertical and horizontal lines crossing one another. See Heraldry.

SABOT (Fr. wooden shoe). Shoe worn in France and Belgium. Carved in a single piece, the shape varies according to local custom. Pron. sah-bo.

The word sabotage is used in a special sense for outbreaks of violence in industrial disputes, especially the destruction and injury of works, machinery, etc., by employees.

SABRE (Magyar szablya). Heavy one-edged sword, generally curved towards the point, used by mounted troops. The regulation British cavalry sabre is a straight blade, 32 ins. long, and weighs 2 lb. The sabre is also used for fencing and duelling. See illus. p. 1183.

SACCHARIN (Gr. saccharon, sugar). Intensely sweet crystalline compound. Discovered by Remsen and Fahlberg at Baltimore in 1879, it is chemically benzoyl sulphonimide, and is employed in place of sugar in

aerated, heverages and for sweetening food for diabetic persons. It possesses antiseptic properties, and is in no sense a food. The name saccharin is also applied to a body, formed by the action of linc on invert sugar, used in brewing.

The saccharimeter is a form of polariscope employed for determining the amount of sugar in a liquid.

SACHEVERELL, HENRY (c. 1674-1724). English writer. Born at Marlborough, and educated at Magdalen College, Oxford, where he met Addison, he became chaplain at S. Saviour's, Southwark. He wrote a series of violently worded pamphlets and sermons in support of the High Church and Tory causes which led to his suspension from preaching for three years, and to what are known as the Sacheverell riots. In 1713 he was given the living of S. Andrew's, Holborn, and he died at Highgate, June 5, 1724. Pron. Sak-kev-c-rel.

SACHS, HANS (1494-1576). German poet and dramatist. He was born at Nuremberg, Nov. 5, 1494, became a Meistersinger, and travelled through Germany, living by his trade of shoe-making and indulging his art as singer. He died Jan. 19, 1576. Inspired by the Reformation, he left more than 6,000 separate productions, including 4,275 master songs and upwards of 200 pieces in dramatic form, valuable for their presentation of life in 16th century Germany.

Sack (Fr. sec, dry). Name given in the 16th and 17th centuries to a white wine similar to sherry or canary.

SACKBUT (Fr. saqueboute). Medieval wind instrument from which the modern trombone has been developed. Canon Galpin derives the name from the Spanish sacar, to draw, and bucha, pipe. The biblical "sack-but" (Dan., 3) was a stringed instrument.

SACK TREE (Antiaris saccidora). Tree of the order Artocarpaceae. A native of the East Indies, it has a tough inner bark from which ropes and matting are made. It is also made

to yield seamless rice-bags. The trunk is cut in lengths corresponding to the depth of sack required, soaked and beaten to separate the bark from the wood;



Sackbut. Musical instrument

then the bark is turned inside out, and the wood sawn off to leave a thin section for the bottom of the sack.

SACKVILLE. English family, now represented by that of Sackville-West. The founder, Richard Sackville, a Kentish landowner, held office under Henry VIII and was knighted. His son, Thomas Sackville the poet, was made earl of Dorset in 1604. This title, and that of duke, conferred on Lionel Sackville in 1720, were held

by members of the family until the death of the 5th duke in 1843. The estates, including Knole Park, passed to the Baroness Buckhurst, a daughter of the 3rd duke and the wife of Earl De La Warr. Her son was made Baron Sackville in 1876.

Victoria, a daughter of the 3rd baron and wife of Harold Nicolson, won the Hawthornden prize in 1927 with a poem The Land.

SACKVILLE, GEORGE SACKVILLE, 1ST Viscount (1716-85). British soldier and politician. A younger son of the 1st duke of Dorset, he fought at Fontenoy, led the British force at Minden, and as a secretary of state in 1775 had a good deal to do with directing the war in America. He retired in 1782 and was made a viscount. He took the name of Germain on inheriting estates under the will of Lady Betty Germain (d. 1769). He died on August 26, 1785.



Viscount Sackville, British soldier

SACRAMENT (Lat. sacramentum, a sacred thing or oath). Term which came into use in the 2nd century for the sacred ceremonies of the Church. The Roman Catholic Church recognizes seven sacraments, baptism, confirmation, holy communion, ordination, matrimony, penance, and extreme unction. They are according to its catechism "a visible sign of invisible grace instituted for our justification." To Roman Catholics they are the means of divine grace and can only be lawfully administered by a priest. The Church of England in its prayer book only recognizes two sacraments, baptism and holy communion. They are "the outward and visible sign of an inward and spiritual grace." Some high churchmen, however, accept the Roman Catholic idea of seven sacraments, and regard these as the sole channels of the divine grace. The Greek Church holds very similar views to the Roman one.

The Protestant evangelical churches, Presbyterians, Methodists, and others, speak of baptism and holy communion, especially the latter, as sacraments, but do not hold the sacramental idea that divine grace can only

come through a sacrament. Sacramentarians was the name applied by the Lutherans to the followers of Zwingli, who denied the Real Presence of Christ in the Eucharist, and maintained that the consecrated elements were sacramental symbols, and not the immediate vehicle of grace.

SACRAMENTO. City of California, U.S.A. The state capital and the co. seat of Sacramento co., it stands on the Sacramento river, 88 m. by rly. N.E. of San Francisco. Its leading industries are flour and grist milling, canning, slaughtering, and meat-packing, iron-founding, and the manufacture of carriages, brooms, pumps, furniture, and soap. There are extensive rly. repair shops. Settled in 1839, Sacramento became the state capital in 1854. Pop. 66,000.

The Sacramento river rises in the N. of California, and flows S. and W. to Suisun Bay, about 50 m. above San Francisco. It is about 400 m. long; or 600 m. if Pitt River, its main head-stream, be included.

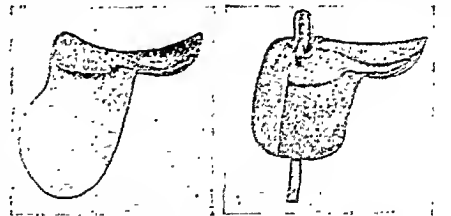
SACRIFICE (Lat. sacer, sacred; facere, to make). In a religious sense, an offering to a divinity, especially at an altar or shrine. The custom is common to most religions. Among the Jews of O.T. times, a sacrifice was a means of communion with Jehovah; a gift of tribute; and a means of atonement.

With the rise of Christianity material offerings were replaced, or believers were enjoined to replace them, by prayer, praise, thanksgiving, a humble and contrite heart, and Christian service. The word is used of the Crucifixion.

SACRILEGE (Lat. sacer, sacred; legere, to collect, steal). In English law, larceny from a church; and, in eccles. law, the alienation to lay purposes of property given to pious uses. By law it is a felony to break into any church, chapel, meeting house, or other place of divine worship. It is a like offence for anyone who, having committed a felony in such a place, breaks out.

SADDLE. Seat for a rider on horseback. Saddles are usually of leather, padded, secured by a girth, and provided with stirrups. A saddle is also a pneumatic or leather seat for the rider of a bicycle. As applied to machinery, etc., a saddle is a bridge-piece or carriage made to travel on a guideway or bed. Examples are the member carrying the slide or tool-rest of a lathe, a seating for a cylindrical steam boiler, a block over which the cables of a suspension bridge pass, or to which they are anchored, and the bearing of an axle box.

Saddlery is a term for saddles, harness, bridles, stirrups, and other accessories of horses and carriages. The Saddlers' Company, one of the London Livery Companies, was chartered in 1272. It has a hall in Cheapside.



Saddle. 1. Man's hunting saddle. 2. Woman's side saddle

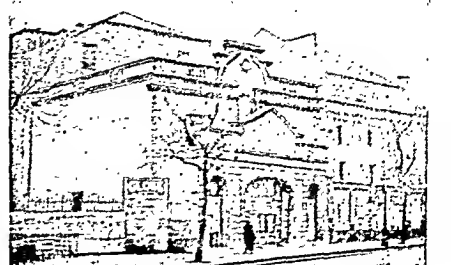
Courtesy of J. I. Soutter & Co

Saddleback. Mountain of Cumberland. Also called Blencathara, it is 4 m. from Keswick and is 2,847 ft. high.

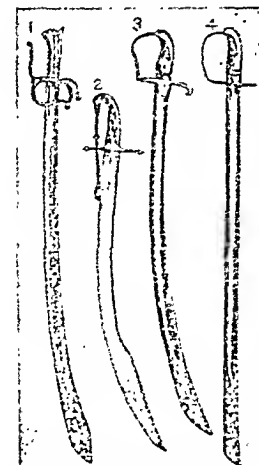
SADDLEWORTH. Urban dist. of Yorkshire (W.R.). It is on the Tame, 14 m. from Manchester, on the L.M.S. Rly. Woollens are manufactured. Pop. 12,565.

SADDUCEES. Jewish religious party. Named after Zadok, a high priest, they arose about 200 B.C. as the party of the priestly aristocracy. They denied the resurrection of the dead and the existence of angels and spirits; and maintained that the letter of the law was sufficient in itself and needed no explanation from tradition or the teaching of the rabbis. The sect disappeared after the final destruction of the Temple.

SADLER'S WELLS. London theatre, in the hor. of Islington. It derives its title from a surveyor named Sadler, who, in 1683, discovered a mineral well here and built a music hall on the site. The music hall was replaced in 1765 by a theatre, rebuilt in 1879. The theatre, which had a great vogue, 1844-62,



Sadler's Wells. Front view of the London theatre, prior to reconstruction



Sabre. 1. Oriental weapon. 2. Persian. 3. Light cavalry weapon. 4. Heavy cavalry sabre, 1815. See p. 1182

under Samuel Phelps, as a home of Shakespearean drama, was purchased in 1925 by a committee with the object of rebuilding it by public subscription and conducting it on the lines of the Old Vic in S.E. London.

SADOWA, BATTLE OF. Prussian victory over the Austrians in the Seven Weeks' War, July 3, 1866. The Austrian army, having retired along the line of the Elbe, were attacked by the Prussians at the bridge of Sadowa, near Königgrätz, early in the morning. By nightfall the Austrians had lost 40,000 men. The numbers engaged were, Prussians, 221,000; Austrians, 205,000.

SAFE. Structure for the secure storage of valuables against fire and burglary. In modern safes the walls are built of sheet iron and steel, or the outer wall is of cast steel, the inner wall laminated, and the space between filled with insulating material in which are embedded drill-proof steel rods. The doors are made so that no join is visible between the door and the safe. The locks usually consist of a handle or spindle which actuates the bolts, the latter being held in position by time or combination locks. The great safe deposits and bank vaults are not only protected by massive doors weighing often several hundred tons, but by electrical alarms to near-by police stations.

In 1928 the Midland Bank introduced automatic safes, to enable traders and others who carry on business after banking hours to deposit their money in safety.

SAFEGUARDING. Term used for the policy of protecting British industries from foreign competition, especially competition from the products of sweated labour. The McKenna duties, introduced in 1916 by Mr. R. McKenna, were at the rate of 33½ per cent on motor vehicles, cinema films, clocks, and musical instruments, but they are not usually classed as safeguarding duties.

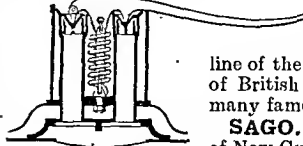
In 1921 the Safeguarding of Industries Act provided for a duty on certain imports, described as key industries, optical glass, for instance. In addition, other kinds of goods could be safeguarded in this way if a case was made out. This was done for three classes of articles made in Germany, gloves, glassware, and hollow-ware, and on these a safeguarding duty of 33½ was imposed.

In 1925 the principle of safeguarding was extended. It was provided that any industry affected by unfair competition could apply to the Board of Trade. An inquiry would then be held and, if the case for a duty was proved, an import duty, usually 33½ per cent, would be imposed. Under this proviso, imports of lace, gloves, incandescent gas mantles, and cutlery were taxed for five years. They expired, therefore, in 1930, when a Labour Government being again in office, they were not renewed. It was arranged that the McKenna duties, however, should remain, as lowered the duty on imports of silk and artificial flowers imposed in 1925.

SAFETY FIRST. Public movement for prevention of street and industrial accidents. In London a Safety First Council was formed in 1916, and this led to the foundation of the National Safety First Association, with headquarters at 119, Victoria Street, London, S.W.1.

SAFETY LAMP. Lamp used by miners which can be burned safely in an atmosphere containing the inflammable gas called fire-damp. The first practical lamp was made either by Sir Humphry Davy or by George Stephenson. Davy was the first to make his lamp public, 1815. Its principle is a hollow cylinder of wire or copper gauze surrounding the flame. Dr. Clanny improved the Davy lamp by substituting a glass cylinder for the lower part of the gauze, enabling the lamp to give out more light, and this construction is found in all modern designs. The gauze cylinder is generally protected from draughts by a metal cover or bonnet. See Davy, Sir H.

SAFETY VALVE. Contrivance fitted to vessels containing liquids or gases under pressure, to give relief if the pressure exceeds a prearranged limit. The valve of safety apparatus used on stationary steam boilers is circular, and pressed down against an annular seat by a weight or spring. In locomotive and marine boilers an adjustable spring restrains the valve or valves, acting directly or through a lever, as in the Ramsbottom type.



Safety Valve. Ramsbottom type as used for locomotives

SAFFLOWER, SAFFRON THISTLE, OR BASTARD SAFFRON (*Carthamus tinctorius*). Annual herb of the order Compositae, a native of Europe, Asia, and Africa. The leaves are oval with spiny teeth. The orange flowers are aggregated in terminal heads. They form a valuable dye stuff, yielding pink, rose, crimson, and scarlet, which is used chiefly for silks. Mixed with talc and the whole finely ground, safflower becomes rouge.

SAFFRON (*Crocus sativus*). Perennial herb of the order Iridaceae, a native of Europe and Asia. The root-stock is a corm like that of the garden crocus, but larger. The grass-like narrow leaves are delicately fringed along the edges and keel; and the light purple flowers appear in autumn. The stigma and upper part of the style are orange-coloured, and constitute the saffron of commerce. It is occasionally used in medicine and food, and yields an orange dye.



Saffron. Corm and flower

SAFFRON WALDEN. Mun. bor. and market town of Essex. It is 44 m. from London on the L.N.E.R. The church of S. Mary the Virgin is a fine Perpendicular edifice. The town has a 16th century grammar school and a museum. There are remains of a Norman castle. The industries include brewing and malting. The place was made a bor. in 1694. Known at first as Walden, its other name was due to the saffron crocus grown here until about 1750. Market day, Tues. Pop. 5,876.

SAGA (Icel. from *segja*, to say). In Icelandic literature, a prose narrative. The typical saga is a prose epic. The oldest sagas, some of which were written before A.D. 1100, are biographies. Ari (1067-1148) was the first great saga writer. After Sturla Thorðsson (1215-84) the saga decayed.

The great sagas give a vivid picture of Icelandic society in the period of its greatest vigour. The finest is, perhaps, that of *Burnt Njal* (c. 1250). Of sagas drawn from myths and legends the most famous is that of the *Volsungs*. Of historical sagas those describing the Viking discoveries in America are notable. In the 13-14 centuries sagas were drawn from the cycles of Alexander and Arthur.

SAGE (*Salvia officinalis*). Low shrub of the order Labiatae. A native of S. Europe, it is about a foot high, with a woolly stem and downy branches. The leaves are opposite, oblong, and wrinkled. The purple flowers are in whorls which form a spray. The plant has aromatic and bitter properties and is used in culinary preparations. See illus. below.

SAGITTARIA. Genus of about twelve species of perennial marsh and aquatic herbs. One of them, the arrowhead, is a native of Britain, Europe, and Asia; the others are all American. The leaves, which are floating or erect, spring from a short, thick root-stock, and in about half the species are arrow-shaped; in others lance-shaped or oval. The white flowers are produced in three to five whorls, the upper ones being males, the lower females.

SAGITTARIUS (Lat. archer). Ancient constellation and ninth sign of the Zodiac.

It follows the Scorpion on the line of the ecliptic, and lies near the S. horizon of British skies. The constellation contains many famous star clusters and nebulae.

SAGO. Trees of the order Palmae, natives of New Guinea, Malaya, etc. The stout trunks are terminated by a crown of long, leather-shaped leaves. The smooth sago palm (*Metroxylon laevis*) is the larger species, and distinguished from the prickly sago palm (*M. rumphii*) by the leaf-stalks of the latter being armed with long, sharp spines. The sago of commerce is prepared from the soft inner portion of the trunks by washing and pounding, by which process the starchy matter is separated. The name sago palm is also applied to the fern palms (*Cycas*), from whose seeds a kind of sago is prepared. See illus. below.

SAGUENAY. River of Quebec, Canada, a tributary of the St. Lawrence. It issues from Lake St. John by two rapids, its length is 120 m., and Tadoussac stands at its mouth; if its headstream, the Peribonka, is included, it is 405 m. in length. The Ashwamuchuan, which flows into Lake St. John, is sometimes called the Upper Saguenay.

SAHARA. Desert of N. Africa. It stretches from the Atlantic to the Nile, and includes the S. portion of Morocco, Algeria, Tunisia, and Libia Italiana, with portions of Egypt. The surface is broken by dunes, and in some places is below sea level, whilst in others it is marked by lofty plateaux crowned by mountain ranges. The atmosphere of the Sahara is relatively heavy.

Portions are dotted with fertile oases which mark the great caravan routes from the Mediterranean to the W. Sudan, from Tripoli, Benghazi, and other ports through Fezzan.

Much of the desert, especially in the regions N. of the Niger, is capable of sustaining herds of cattle. Huge tracts are strewn with rocks or covered with stones. The greater part of the Sahara forms part of French West Africa. In 1928 the French Government approved a plan for a railway, 2,250 miles long, from Algiers to Timbuktu. At various times proposals have been put forward to flood the Sahara and so make it fit for cultivation.

SAHIL. Village of Mesopotamia. It is in the estuary of the Shatt-el-Arab, 9 m. from Sahain. It gives its name to the battle fought there between the British and the Turks, Nov. 17, 1914. The Turks stood in a strongly entrenched position, but when the British and Indian troops advanced they suddenly broke and fled. The British casualties were about 350, and those of the Turks about 2,000.



Sage. Cutting of the aromatic herb. See article above

SAIGON. Capital of French Cochinchina. On the Saigon river, 40 m from the S. China Sea, it is the chief commercial centre of the colony, and also the principal French military and naval base in the Far East. The harbour is accessible to the largest steamers and is equipped with shipbuilding yards and repair shops. It is connected by rly. and electric trams with Cholon, a native commercial city, with 170,000 inhabitants. Saigon was ceded to France in 1862. Pop. 130,000.

SAIL. Sheet of canvas used to catch the wind and so drive forward a vessel. Sails are usually made of a strong fabric called sailcloth. There are many kinds of sail, named according to shape or position. See Jib; Lateen Sail.

SAILLY. Name of several villages of France: (1) In the dept. of Pas-de-Calais on the river Lys, 12 m. S.E. of Béthune. (2) In the dept. of Pas-de-Calais, 22 m. E. of Arras. (3) In the dept. of Nord, 5 m. N.W. of Cambrai. Sailly-le-Sec is a village on the N. bank of the Somme, 4 m. E.N.E. of Corbie.

Sailly-Saillisel is a village in the dept. of Somme, slightly S. of Lesboeufs. Prominent in the Great War, it changed hands several times. The village was adopted by Marylebone.



Sainfoin.
Field herb

SAINFOIN (*Onobrychis sativa*). Deep-rooted leguminous plant, suitable for haying or grazing purposes on calcareous soils in the warmer parts of Britain. Its long leaves have six to ten pairs of leaflets, with one at the end, and the pink flowers are arranged in conspicuous racemes. The pod is wrinkled and contains one brown seed. Pron. San-foyn.

SAINT (Lat. sanctus, holy). One whose life has been consecrated to the service of God. Thousands of saints are commemorated in the Bollandist *Acta Sanctorum*; those having days allotted to them in the English Prayer Book number 73. In accordance with ancient custom, churches, abbeys, monasteries, convents, hospitals, colleges, and many school churches are dedicated to or named after saints. The word enters largely into toponymy, and many countries and callings have their patron saints.

ST. ABB'S HEAD. Rocky headland of the Berwickshire coast, 4 m. N.W. of Eyemouth. S. Ebba founded a monastery here in the 7th century. The headland, 310 ft. high, is surmounted by a lighthouse. St. Abb's, formerly Coldinghamshore, a seaside resort and fishing village, lies 2½ m. S.E.

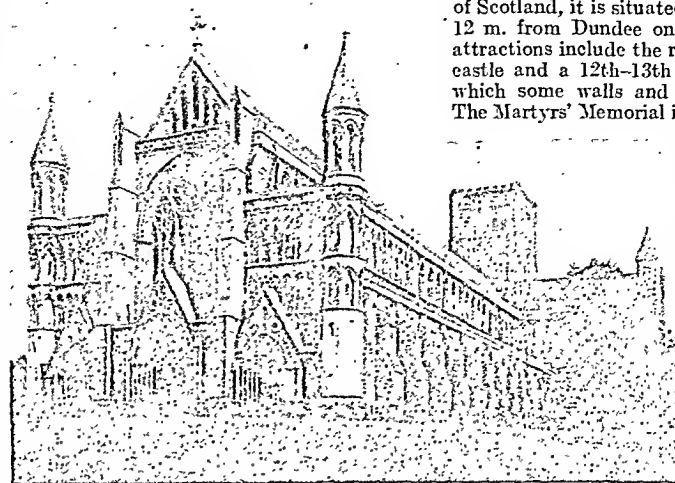
ST. AGNES. Seaport of Cornwall. It is 9 m. from Truro, on the G.W.R. Around are tin mines. John Opie, the painter, was a native. Near the town is St. Agnes beacon, 597 ft. high, and St. Agnes Head is about a mile away. Pop. 3,347.

St. Agnes is the name of one of the Scilly Islands. Pop. 130.



St. Andrews, Scotland. General view, from the cathedral, of the Scottish burgh and headquarters of golf

ST. ALBANS. Mun. bor., city, and market town of Hertfordshire. It is 21 m. N.W. of London, on the L.M.S. and L.N.E.



St. Albans Cathedral. West Front, showing the Norman tower and Gothic nave

Rlys. To the S., in Verulam Woods (named from the river Ver), are remnants of the British-Roman city of Verulamium, the objective of archaeological excavations in 1930.

The cruciform church, partly renovated by Sir Gilbert Scott and thoroughly restored by Baron Grimthorpe, was constituted in 1875 the cathedral of a new diocese. It has a central Norman tower faced with Roman tiles, 145 ft. high. The 14th century Abbey Gatehouse is the home of St. Albans grammar school. Three churches, S. Peter's, S. Stephen's, and S. Michael's, all restored, were founded in Saxon times. S. Michael's contains the tomb of Francis Bacon. Straw plaiting, brewing, and printing are carried on. Market days, Wed. and Sat. Pop. 25,593.

Two battles were fought here between Yorkists and Lancastrians, May 22, 1455, and Feb. 17, 1461. In the first the Yorkists, under the duke of York and earl of Warwick, defeated the Royalists under Henry VI; in the second the Yorkists, under Warwick, were routed.

ST. ALBANS, DUKE OF. British title borne by the family of Beaulieu since 1684. In 1660 Henry Jermyn, the favourite of Henrietta Maria, was made earl of St. Albans. On his death, in 1684, Charles II made his son, Charles Beaulieu (1670-1726), duke of St. Albans. Nell Gwynn was the boy's mother. The 9th duke married the actress, Harriet Mellon, widow of the banker Thomas Coutts. The family estates are at Bestwood, near Nottingham.

ST. ALDWYN, MICHAEL EDWARD HICKS-BEACH, 1st EARL (1837-1916). British statesman. Born Oct. 23, 1837, he succeeded his father in 1854 in a baronetcy dating from 1619. Educated at Eton and Oxford, he became an M.P. in 1864. As a Unionist he was twice chief secretary for Ireland, and secretary for the colonies 1878-80. He was chancellor of

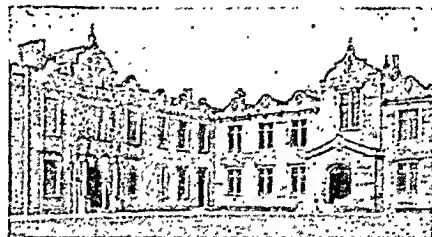
the exchequer in 1885-86 and again 1895-1902. In 1906 he was made a viscount, and in 1915 an earl. He died April 30, 1916.

ST. ANDREWS. City, burgh, and seaport of Fifeshire. Once the eccles. metropolis of Scotland, it is situated on St. Andrews Bay, 12 m. from Dundee on the L.N.E. Rly. Its attractions include the ruins of a 16th century castle and a 12th-13th century cathedral, of which some walls and towers alone remain. The Martyrs' Memorial is noteworthy. Madras

College is a celebrated school, and another is the girls' school that occupies the buildings of S. Leonard's College. Of the city gates only the West Port remains. St. Andrews is the headquarters of golf. The Royal and Ancient Club, founded in 1754, has its fine links here. The city has a small harbour and some shipping and fishing.

St. Andrews is said to owe its origin to the fact that S. Regulus, bearing the bones of the apostle, settled here in the 7th century. In the 9th century it was made a bishopric. Later its bishop became primate of Scotland and was an archbishop until 1688. It was made a royal burgh in 1124. Pop. 9,336.

The university of St. Andrews was founded in 1411 by Henry Wardlaw (d. 1440), who was consecrated bishop of St. Andrews in 1403. The colleges of S. Salvator and S. Leonard were founded in 1450 and 1512. In 1747 these were formed into the United College. The college buildings include S. Mary's College, which has part of the original edifice. University College, Dundee, dating from 1880, is part of the university.



St. Andrews University. Buildings of the United College of S. Salvator and S. Leonard

ST. ANNE'S HILL. Eminence near Chertsey, Surrey. In 1928 Sir William Berry (later Baron Camrose) gave 23 acres on top of the hill to Chertsey for an open space.

ST. ANNE'S-ON-SEA. District of Lancashire. Formerly a separate urban dist., it was made in 1922, together with the urban dist. of Lytham, into the borough of Lytham St. Anne's (q.v.).

ST. ASAPH. City and market town of Flintshire, Wales. It is 5 m. from Denbigh, on the L.M.S. Rly., near the junction of the Clywd and Elwy. The cathedral is a plain cruciform edifice dating mainly from the 15th century, and was restored by Sir Gilbert Scott. An agricultural trade is carried on. The city, called in Welsh Llanellwy, grew up around a monastery founded about 560. The church became the cathedral and took the name of Asaph, the successor of Kentigern. Market day, Thurs. 1,833. See illus. p. 1186.

ST. AUSTELL. Market town and urban dist. of S. Cornwall. It stands above St. Austell Bay, 14 m. from Truro, on the G.W.R.

The church of Holy Trinity, dating partly from the 13th century, has a splendid Perpendicular tower. Around are many old tin and copper mines, which yield a good deal of china clay. Market day, Fri. Pop. 3,247.



St. Asaph Flintshire. Cathedral from the south-west. See p. 1185

ST. BARTHOLOMEW, MASSACRE OF. Name given to the murder of the Huguenots in France which began on S. Bartholomew's Day (Aug. 24), 1572. A plot to murder Coligny having failed, the queen mother Catherine de Medici, the Guises and others, taking advantage of the fact that many Huguenots had come to Paris to attend the marriage of Henry of Navarre and the king's sister Marguerite, persuaded Charles IX to strike at their foes. He consented, and the massacre spread to the provinces, lasting until Oct. 3. One authority states that 50,000 were killed, but 25,000 is probably nearer the mark.

ST. BARTHOLOMEW. Church and hospital in London. The church of S. Bartholomew the Great, in Smithfield, is remarkable



St. Bartholomew's, London. Nave of the Norman church, looking east

for its magnificent Norman pillars and arched recesses. It is the choir and transepts of the church belonging to the priory founded in 1123 by Rahere, whose tomb is within. The lady chapel, rebuilt in 1896, was at one time a printing office. The crypt and cloisters are also notable.

Rahero also founded a hospital near his priory and this has developed into one of the great London hospitals. It was rebuilt in 1760, and extensions were opened in 1793 and 1907. In the great hall are some valuable portraits, and in the precincts is the church of S. Bartholomew the Less. The hospital has 687 beds and a convalescent home at Swanley.

ST. BEES OR **ST. BEGUA.** Town of Cumberland, 4 m. S. of Whitehaven, on the L.M.S. Rly. It derived its name from St. Begha, an Irish princess, who is said to have established a nunnery here about A.D. 650. This was succeeded by a Benedictine priory, to which the present church belonged. The grammar school, founded in 1587, is a large public school. Pop. 1,609.

ST. BERNARD DOG. Large dog of the mastiff group. It derives its name from the hospice on the Great St. Bernard Pass, where

these dogs were used for finding travellers lost in the snow. The original breed of the Great St. Bernard is of unknown descent. That in Britain has descended from a famous show dog, Barry, but is said to depart from the old type. The St. Bernard has a high head, deep-set eyes, pendulous lips, and moderate-sized pendent ears. The feet are large. The dog has remarkable intelligence.

ST. BERNARD PASS, GREAT. Mountain pass of the Pennine Alps, between Valais in Switzerland and Piedmont in Italy. It reaches an alt. of 8,110 ft., and was known to the Romans as Mons Poeninus. By this pass Napoleon led his army into Italy in 1800. The hospice, founded about 962 by S. Bernard de Menthon, has a church dating from 1680.

The Little St. Bernard Pass is a mt. route over the Graian Alps, between Italy and Savoy. It attains an alt. of 7,176 ft. and has a hospice with observatory. Hannibal is reputed to have crossed the Alps by this pass.

ST. BLAZEY.

Market town of Cornwall 4 m. from St. Austell, on the G.W.R. It has an important trade in connexion with the local tin mines. Market day, Sat. Pop. 3,146.

ST. BONIFACE.

City of Manitoba, Canada. It stands on the Red river, opposite Winnipeg, and is served by the C.P.R. and the C.N. Rlys. Bricks, flour, and agricultural implements are made, and there are lumber yards and grain elevators. It is the seat of a R. C. archbishop. Pop. 14,000.

St. Brelade. Village on the S.W. coast of Jersey. It is picturesquely situated on the W. side of St. Brelade's Bay. Pop. 2,300.

ST. BRIAVELS. Village of Gloucestershire. Overlooking the Wye, 7 m. from Chepstow, on the G.W. and L.M.S. joint rly., it is noted for its church and the ruins of its castle. Of the 11th century castle the ruined keep remains. Pop. 1,210.

ST. BRIDE'S OR **S. BRIDGER'S.** London church on S. side of Fleet Street. Burnt in 1666, it was rebuilt by Wren in 1680 and is noted for its tall steeple. Near by are St. Bride's and Bridewell schools, and the St. Bride Foundation Institute for printers. See Bridewell.

St. Budeaux. Village of Devonshire. It is 4 m. from Plymouth, on the S.R. Pop. 1,803.

ST. CATHARINES. City of Ontario, Canada. On the Welland Canal, near Lake Ontario, it is the centre of a fruit-growing district, and machinery, paper, etc., are manufactured. Pop. 19,881.

ST. CLOUD. Town of France. On the Seine, just outside Paris, it is notable for its park and as a pleasure resort. In the park was a palace, built about 1600 by a duke of Orléans. Pop. 13,519.

The Ordinances of St. Cloud were certain repressive laws suddenly promulgated here by Charles X and his ministers, July 26, 1830. They caused the so-called July revolution in Paris, which led to the abdication of Charles X. St. Cloud Ware is a semi-transparent porcelain produced at St. Cloud, 1697-1773.

ST. CYR. Village of France, 14 m. N.W. of Paris. Louis XIV founded a seminary here for impoverished daughters of the nobility, at the instigation of Madame de Maintenon.

Napoleon I, in 1806, transformed this into a now famous military school for infantry and cavalry cadets. Pop. 6,190.

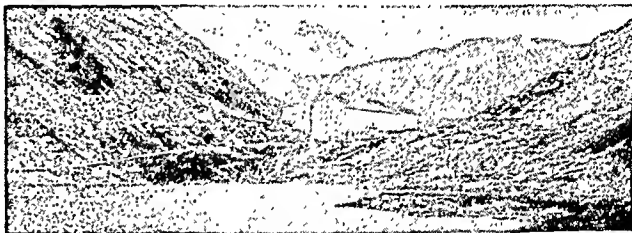


St. Bernard Dog. Champion specimen of the breed

ST. DAVIDS. City of Pembrokeshire, Wales, 1 m. from the N. side of St. Bride's Bay. S. David, the patron saint of Wales, founded the see, and died here in 601. Its earlier Roman name was Menevia. The Gothic cathedral, begun in 1180, was restored in 1862-78. The episcopal palace and S. Mary's College are interesting ruins. St. David's Head (100 ft. high), 3 m. N.W., is the most westerly point of

Wales. Pop. 1,644. See illus. below.

ST. DAVIDS, JOHN WYNFORD PHILLIPS, 1ST VISCOUNT (b. 1860). British financier. The eldest son of the Rev. Sir J. E. Phillips, the holder of an old baronetcy and the owner of estates in Pembrokeshire, he was born May 30, 1860. He was educated at Felsted School and Keble College, Oxford. He was Liberal M.P. for Mid-Lanark 1888-94; and Pembrokeshire 1898-1908, when he was made



Great St. Bernard, Switzerland. The hospice, founded by S. Bernard for travellers crossing the Alps; in the background, Mt. Velan

a baron. Becoming connected with various companies working chiefly in S. America, he was soon the head of a group with interests in many parts of the world. In 1918 he was made a viscount.

ST. DENIS. Town of France, in the dept. of Seine. It is on the Seine, 4 m. N. of Paris. The famous early Gothic church of S. Denis (restored 1806-47) was the burial place of most of the kings of France from 638. There are flour and cotton mills, chemical and dye works, and manufactures of machinery. The wharves form part of the port of Paris. Pop. 80,000.

ST. DONAT'S. Village of Glamorganshire. It is famous for its castle, founded in the 11th century. In the state rooms are carvings by Grinling Gibbons. The castle was bought and restored in the 20th century by Mr. W. R. Hearst. There is a church with a 14th century cross in the churchyard.

ST. DUNSTAN'S HOSTEL. London institution for the training of the blind. It is situated in Regent's Park. Sir C. A. Pearson having turned his attention to the welfare of soldiers and sailors blinded in the Great War, St. Dunstan's Lodge, a residence designed



St. Davids, Pembrokeshire. The Gothic cathedral from the south-east. See above

in 1830 for the marquess of Hertford, was placed at his disposal, and he opened it as a hostel and training centre with 14 blinded inmates, in March, 1915. Massage, shorthand writing, telephone operating, boot repairing, joinery, basket making, and market gardening are taught, and practically all the men learn to master Braille and the use of the typewriter.

SAINTE-BEUVE, CHARLES AUGUSTIN (1804-69). French critic. He was born at Boulogne-sur-Mer, Dec. 23, 1804. His father was a native of Picardy and a commissioner of taxes. Educated at Boulogne until he was 14, he studied at the Lycée Charlemagne, Collège Bourbon, and the School of Medicine, Paris. A friend of Victor Hugo, he at first wrote romantic verse, but gave this up for the work of historian and critic. His lectures at

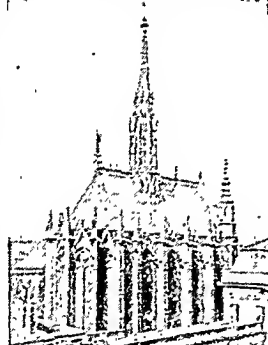


C. A. Sainte-Beuve
French critic

Lausanne, 1837, on Port-Royal, formed the nucleus of his most important work, *L'Histoire de Port-Royal*, 5 vols., 1840-48. Librarian of the Mazarin Library, 1840, and an Academician, 1845, he went to Liège University, his lectures here being published in 1860 as *Chateaubriand et son Groupe Littéraire*. After 1851 he was professor in the Collège de France, and 1857-61 at the École Normale. Made a senator in 1865, he died in Paris, Oct. 13, 1869.

Sainte-Beuve was the greatest literary critic of his time, and his numerous criticisms and appreciations, *Premiers Lundis*, *Causeries du Lundi*, *Nouveaux Lundis*, etc., are of permanent value.

SAINTE-CHAPELLE. Building in Paris. It was built in 1245-48 as a shrine for the sacred relics brought by St. Louis from the Holy Land in 1239; these included the Crown of Thorns and a piece of the true cross. One of the most beautiful Gothic buildings in the world, it contains some exquisite stained glass. The gilded spire is modern. The relics are now in Notre Dame, Paris.



Sainte-Chapelle, Paris. Exterior, with the graceful Gothic spire

ST. ELMO'S FIRE. Electrical discharge sometimes observed at night during thundery weather between the tops of masts, flagstuffs, trees, and housetops, and the air. The name is a corruption of S. Ermo, the popular rendering of S. Erasmus, patron saint of sailors in the Mediterranean.

ST. ELOI. Village of Belgium, in the prov. of W. Flanders. It is 2 m. S. of Ypres and 9½ m. N. of Armentières.

What are known as the battles of St. Eloi were fought here between the British and the Germans in 1915 and 1916. In 1915 the British, under Smith-Dorrien, were holding that portion of the line which encircled the village and included a large mound to the S.E. The Germans, on March 14, after mining the mound, occupied the village. On the following day the British recaptured all the lost trenches and, except for the mound, all the lost ground was recovered.

The second battle began on March 27, 1916, the British taking the offensive, and continued till April 19. The mound changed hands several times, but while the Germans

secured all the craters, the village remained in the hands of the British.

ST. ETIENNE. Town of France, capital of the dept. of Loire. Situated on the Furens, 36 m. S.W. of Lyons, it is a mining and manufacturing centre, owing its importance to the coal found in the vicinity. It manufactures silk, ribbons, velvets, and other textiles, ironmongery, bicycles, etc. There is an important school of mines. Pop. 193,700.

ST. GALL. City of Switzerland, capital of the canton of St. Gall. It stands on the Steinach, 9 m. by rly. S.W. of Rorschach, on Lake Constance. The abbey church of its famous monastery, restored 1756-68, was made a cathedral in 1846. The abbey library contains some of the most precious MSS. in the world. The city originated round a Benedictine abbey, which enclosed the cell of S. Gall, an Irish hermit, who lived here from 614 to 640. It became one of the chief centres of learning in Europe. Pop. 64,500.

SAINT-GAUDENS, AUGUSTUS (1848-1907). American sculptor. He was born in Dublin, March 1, 1848, of mixed French and Irish parentage, and was taken to New York when six months old. Beginning his career as a cameo cutter, he was president of the Society of American Artists, the friend of R. L. Stevenson (of whom he executed a memorable bust), and the sculptor of the Farragut statue in New York and the Lincoln at Chicago, a replica of which was unveiled at Westminster in 1920. He died Aug. 3, 1907.

St. George's Channel. Channel separating Ireland from Wales and connecting the Irish Sea with the Atlantic Ocean.

ST. GEORGE'S DAY. Feast day of St. George. It is held on April 23, the date of his martyrdom, a council held at Oxford in 1222 commanding that it be a holiday.

ST. GERMAIN-EN-LAYE. Town of France. In the dept. of Seine-et-Oise, it overlooks the Seine and the forest of St. Germain, 13 m. W. of Paris. The town dates from the 10th century, and grew round a convent in the forest, then known as Ledia. It became a royal residence in the time of Louis VI. Its imposing Renaissance château, begun by Charles V, has been a national museum since 1861. The forest extends over 10,000 acres, with a circuit of 21 m. Pop. 22,180.

The treaty of St. Germain-en-Laye is a document signed between the allied and associated powers and Austria, Sept. 10, 1919. The complement of the treaty of Versailles (q.v.), it settled the territorial and political status of Austria following the Great War. Its text was handed to the Austrian delegates on July 20, and it was ratified by the Austrian assembly on Oct. 17.

ST. GERMANS. Parish of Cornwall. It stands on an arm of Plymouth Sound, 9 m. from Plymouth, on the G.W.R. The beautiful church of St. Germans has a Norman front, the remainder being mainly Perpendicular work. St. Germans was in the 10th and 11th centuries the see of the bishop of Cornwall. Pop. 1,986.

The title of earl of St. Germans has been held since 1815 by the Cornish family of Eliot. In 1784 Edward Eliot, M.P. for Cornwall, was made a baron, and his son John was created an earl in 1815. In 1922 Granville John (b. 1867) became the 7th earl. The family seat is Port Eliot, near St. Germans.

ST. GOTTHARD or **ST. GOTHARD.** Group of mts., pass, and rly. of Switzerland. The mts. form a division of the Lepontine Alps, spread into four cantons, and hold the sources of the Rhine, Rhône, Reuss, and Ticino. The Sasso, or peak of St. Gotthard, is 8,235 ft. high; Pizzo Rotondo, 10,489 ft.; Piz Lukmanier, 9,115 ft.

The St. Gotthard is crossed by one of the oldest and most famous of the Alpine passes

(6,935 ft.) from Switzerland to Italy. The hospice on the summit is first mentioned in 1331. The St. Gotthard Rly., from Lucerne



St. Gotthard. The Alpine pass, near Giornico showing three lines of railway, one above the other

to Milan, now electrified, tunnels the range near Goeschenen in Uri and emerges above Airolo in Ticino. Built in 1872-82, it reaches an alt. of 3,786 ft., and has 80 tunnels and more than 300 bridges. The main tunnel, 28 ft. wide by 21 ft. high, is 9½ m. long. The rly. was purchased by the Swiss government in 1909.

ST. HELENA. British island in the S. Atlantic, an Admiralty coaling station. It is 800 m. S.E. of Ascension Island, 1,200 m. from the nearest point of Africa, and 1,500 m. N.W. of Walvis Bay. Of volcanic origin, the island is rugged, and rises to 2,700 ft. in the S.W.; the coast cliffs vary from 600 to 2,000 ft. sheer. Fibre, tow, rope, and twine are the main exports. The area is 47 sq. m. The people, of mixed origin, number 3,700. Administration is by a governor, and at the chief place, Jamestown, on the N.W., is an observatory, also a telegraph station.

A Portuguese sailor, João da Nova, discovered the island in 1502. Napoleon died here in exile in 1821.

ST. HELENS. Co. bor. and market town of Lancashire. It stands on a tributary of the Mersey, 14 m. from Liverpool, on the L.M.S. and L.N.E. Rlys. The town is the chief centre of the glass manufacture; other industries are the making of chemicals, patent medicines, and pottery. Iron, brass, and copper are worked, and around are extensive collieries. St. Helens sends one member to Parliament. In 1919 the town council purchased the estate of Winslehurst for a garden city. Market days, Mon. and Sat. Pop. (1921) 102,640.

ST. HELEN'S. Urban dist. of the Isle of Wight. It is 4 m. from Ryde, on the Southern Rly. It takes its name from that of a church which was pulled down about 1800, but the tower of which still stands. Pop. 5,705.

ST. HELIER. Seaport, market town, and the capital of Jersey. It stands on the S. side of the island and has regular steamboat communication with Southampton and ports in France. The town has a good harbour, protected by a breakwater, and its chief industries are fishing, shipbuilding, and brewing. In Elizabeth Castle Charles II and Clarendon lived during their exile. Fort Regent dates from 1806. Market days, Wed. and Sat. Pop. 26,314. See Jersey.

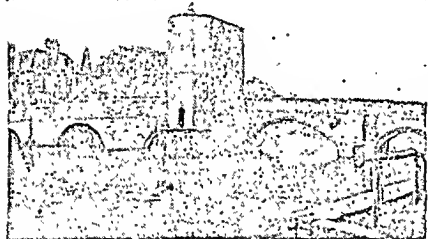
ST. HELIER, FRANCIS HENRY JEUNE, 1ST BARON (1843-1905). British judge. Born March 17, 1843, at St. Helier, Jersey, he was educated at Harrow and Balliol College, Oxford, and was called to the bar in 1868. Having won a high reputation in eccles. cases, he was appointed judge of the probate, divorce, and admiralty division, 1891, and president the following year. He resigned in Jan., 1905, when he was created a peer, and died April 9, 1905.

ST. HELIER. Suburb of London. In Surrey, between Mitcham and Sutton, the land here was acquired by the L.C.C. for housing, and many houses have been built. It was named after Lady St. Helier, a member of the L.C.C. and the author of *Memories of Fifty Years*, 1909.

ST. HYACINTHE. City of Quebec, Canada. It stands on the Yamaska, 36 m. from Montreal, near the U.S. border. There are some manufacturing industries. Pop. 10,859.

ST. IVES. Mun. bor. and market town of Huntingdonshire. It stands on the Ouse, 3 m. from Huntingdon on the L.N.E. and L.M.S. Rlys. There is an agricultural trade and important cattle markets are held. St. Ives was named after a 6th century missionary. An old bridge crosses the river, and on it is a 15th century building, originally a chapel. Market day, Mon. Pop. 2,797.

ST. IVES. Mun. bor., market town, and seaport of Cornwall. It is 8 m. from Penzance on the G.W.R. The town is pic-



St. Ives, Huntingdonshire. The old bridge with its medieval chapel

turesquely situated and has a 15th century church, and copper, slate, fishing, boat-building, and rope-making industries. There are good sands and bathing. St. Ives is named after a 5th century Irish princess, In or Hia. Market day, Sat. Pop. 6,845.

ST. JAMES'S PALACE. London building, in Pall Mall, S.W. It stands on the site of a 12th century leper hospital, dedicated to S. James the Less, which Henry VIII transformed into a manor house, at the same time enclosing the park. After Whitehall was burnt, St. James's Palace was a royal residence, 1698-1837. Royal levées are still held here, and representatives of foreign powers are accredited formally to the Court of St. James's. Of Henry VIII's brick building, all that remains are the gateway facing St. James's Street, the chapel royal, and the presence chamber or Tapestry Room.

St. James's Park, in London, extends from Whitehall to Buckingham Palace, includes the Horse Guards Parade, the Mall, and Birdcage Walk, and covers 93 acres.

St. James's Square, London, opens from Pall Mall, and is bounded N., W., and E. by York, King, and Charles Streets respectively. At No. 14 is the London Library.

St. James's Street is a London thoroughfare connecting Piccadilly with Pall Mall, and is noted for its clubs, including Arthur's, Boodle's, Brooks's, Conservative, Devonshire, Thatched House, and White's.

ST. JOHN. River of N. America. It rises in Maine and flows between that state and New Brunswick for some distance before entering the Canadian province. It is 450 m.

long, about 300 m. being Canadian water, and falls into the bay of Fundy. St. John stands at the mouth, and it is navigable to Fredericton. On it are Grand Falls, where the water drops 53 ft.

St. John is also the name of a lake in Quebec. Its waters are carried to the St. Lawrence by the river Saguenay.

ST. JOHN. City of New Brunswick, Canada. Situated on a peninsula at the mouth of the St. John river, 483 m. from Montreal, it is the winter terminus of the C.P.R., has a commodious harbour with good docks, and a regular steamer service to S. Africa and the West Indies. Industries include those connected with lumber, the manufacture of boots and shoes, cotton and woollen goods, furniture, soap, vinegar, and fishing and fish-curing. Pop. about 60,000.

ST. JOHN OF BLETSOE. BARON. English title borne since 1558 by the family of St. John. The first holder was Oliver St. John of Bletsoe, Bedfordshire, who also became Baron Beauchamp. When the second baron died in 1596 the two baronies were separated, but that of St. John was kept by the St. John family.

ST. JOHN, FLORENCE (1854-1912). Stage name of Maggie Greig, British actress and vocalist. Born at Tavistock, she was a star of musical comedy. She died Jan. 30, 1912.

ST. JOHN OF JERUSALEM. Order of chivalry. Its title came from a hospital founded at Jerusalem about 1070 by Amalfi merchants who formed themselves into a religious order the members of which were obliged to aid and defend pilgrims.

Driven from the Holy Land, 1290, the order went to Limasol, in Cyprus, and in 1310 to Rhodes. Forced from Rhodes in 1522, the knights, numbering some 4,000, went to Candia and Sicily, and settled in Malta in 1530. Charles V granted the island to the order, and Malta remained in their hands until 1798. The order then became religious in character, its headquarters being established at Rome in 1879.

Admission is restricted to those who bear 16 quarterings and profess the R.C. faith. The English order of S. John of Jerusalem, which has women members, received a charter in 1888. It devotes itself to organizing hospital and Red Cross work, notably the St. John Ambulance Association. Its chancery is at St. John's Gate, Clerkenwell, London, E.C. The ribbon of the order is black.

The Ambulance Association provides instruction in the treatment of sick and injured persons, in nursing, and conducts examinations and confers diplomas. See Red Cross.

ST. JOHN'S. Capital of Newfoundland. It stands on a fine harbour on the E. coast of the island, 560 m. from Halifax, N.S. It has a dry dock and a regular steamer service to Liverpool, New York, and Halifax. It is the headquarters of the fisheries, as well as the banking and general business centre. The city was founded by Sir Humphrey Gilbert in 1582. Pop. 41,000.

ST. JOHN'S. Town of Quebec, Canada, formerly called Dorchester. It stands on the Richelieu about 30 m. from Montreal, has a trade in lumber and farm produce, and

manufactures bricks, furniture, and straw hats. Pop. 7,734.

ST. JOHN'S. One of the colleges of Oxford University. It was founded in 1555 by Sir Thomas White, a member of the Merchant Taylors' Co., and is in St. Giles. The older buildings consist of two beautiful quadrangles, and the garden is perhaps the most beautiful in Oxford.

One of the colleges of Cambridge University is also called St. John's. Built on the site of an Augustinian hospital, 1135, it was founded in 1511 under the will of Lady Margaret, countess of Richmond and Derby. Of its four courts one is approached, across the Cam, by a covered bridge of one arch known as the Bridge of Sighs, 1827-31. The hall, is rivalled in elegance and proportion only by that of Trinity. The beautiful library, the gift of John Williams, bishop of London, contains many treasures. The Gothic chapel, designed by G. G. Scott, was opened in 1869.

ST. JOHN'S WOOD. Residential district of London. In the bor. of Marylebone, and built over in the 19th century, it lies N.W. of Regent's Park. Near to the St. John's Wood Road station of the Met. Rly. are Lord's cricket ground and S. John's Church, where is the grave of Joanna Southcott. The district derives its name from being once the property of S. John's Priory, Clerkenwell.

ST. JOHN'S WORT (*Hypericum perforatum*). Perennial herb of the order

Hypericaceae. A native of Europe, Asia, and N. Africa, it has slender, two-ridged brown stems, branching above, and opposite oblong leaves whose veins are pellucid, as are the glands with which the leaf is freely dotted. On holding a leaf to the light these appear like perforations. The bright yellow flowers are an inch across, and appear in clusters at the end of the branches. H. calycinum, a related species, is sometimes called Rose of Sharon.

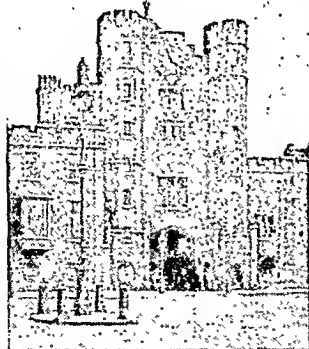
ST. JUST. Urban dist. and market town of Cornwall. It is 7 m. from Penzance, and is surrounded by ancient tin and copper mines. In a round, or amphitheatre, here, Cornish miracle plays were performed. Market day, Sat. Pop. 5,700.

ST. JUST, LOUIS ANTOINE LÉON DE (1767-94). French revolutionary. Born at Decize, Nièvre, Aug. 25, 1767, he was educated at Soissons, supported the revolutionary movement, and was elected to the assembly in Sept., 1792. Closely allied with Robespierre, he was a member of the committee of public safety, 1793. Becoming president of the convention, he was a follower of Robespierre, with whom he was guillotined, July 28, 1794.

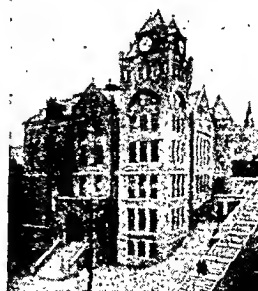
ST. KILDA. Island of the Outer Hebrides, Scotland. It belongs to Harris, Inverness-shire, and is 40 m. W. of North Uist. The chief of a group of about 17 rocky islets, its circumference is about 7 m.; its highest point is 1,220 ft.; it has lofty, precipitous cliffs around the coast, except in the S.E., where is the landing place. Sea-fowl abound. At their own request the population of 35 were removed to the mainland in 1930.



St. John of Jerusalem. Left, star worn by the knights; right, badge of the Ambulance Association



St. James's Palace, London. Gateway built by Henry VIII



St. John's. Court House in the capital of Newfoundland

St. Kilda is also the name of a watering place of Victoria, $3\frac{1}{2}$ m. from Melbourne.

ST. KITTS or **St. Christopher**. Third largest of the Leeward Islands, in the British West Indies. It lies 46 m. W.N.W. of Antigua, and has an area of 65 sq. m. Basseterre is the chief town. With Nevis and Anguilla, St. Kitts forms an administrative unit, which sends representatives to the federal legislative council of the Leeward Islands. The three islands form a presidency under an administrator, assisted by executive and legislative councils. Pop. 26,000.

ST. LAWRENCE. River of North America. It begins as the St. Louis, which enters Lake Superior near Duluth, and has a total length of 1,900 m. Below Lake Ontario it bears the name St. Lawrence. Its basin contains more than half the fresh water in the world, and includes Niagara. The river proper has an average width of $1\frac{1}{2}$ m.; it is 100 m. across the mouth near Anticosti Island. From the Atlantic Ocean, at the Strait of Belle Isle, to the head of Lake Superior is a water stretch of 2,264 m., which is navigable with the aid of canals. Ocean steamers reach Montreal, 986 m. from the ocean.

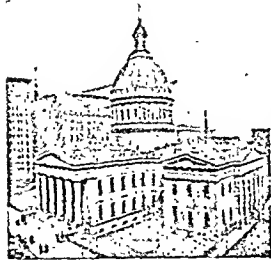
The Gulf of St. Lawrence is an arm of the N. Atlantic Ocean on the N.E. coast of America. It receives the waters of the St. Lawrence river, contains Anticosti, Prince Edward and the Magdalen islands, and is 500 m. from N. to S. and 240 m. across. See Canada.

ST. LEGER. British horse race. It takes place at Doncaster on the Wednesday of the annual Sept. meeting. The race was inaugurated by Col. St. Leger, of Parkhill, Doncaster, in 1776. Originally it was a sweepstake for three-year-olds, over a course of 2 m.; the first winner was Lord Rockingham's Sampson. Afterwards the course was altered to 1 m. 6 fur. 132 yds. Horses which had previously won the 2,000 guineas and the Derby have occasionally won the St. Leger also. Edward VII (then prince of Wales) won the St. Leger with his Derby winner, Diamond Jubilee, in 1896.

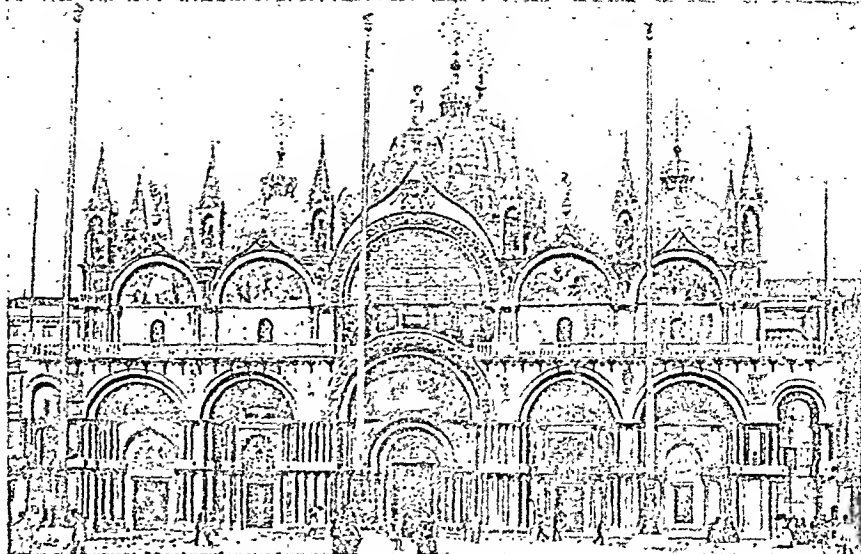
St. Leonard's Forest. Tract of land in Sussex, N.E. of Horsham. It formed part of the Andredsweald of the Saxons.

ST. LEONARD'S-ON-SEA. Watering place of Sussex, included in the borough of Hastings (q.v.). It is on the S.R. There are a pavilion, a pier, and fine promenade.

ST. LOUIS. Principal city and port of entry of Missouri, U.S.A. It is pleasantly situated on the Mississippi, 18 m. below its junction with the Missouri, has a river frontage of 19 m., and covers rather more than 61 sq. m. There are some 2,700 acres of parks, and many notable public structures. Washington University and St. Louis University are the chief institutions for higher education. Tobacco is the principal manufacture, upwards of 80,000,000 lb. being produced annually. Other industries include slaughtering and meat packing, zinc and lead smelting, printing and publishing, flour milling, and the manufacture of foundry and machine-shop products, clothing, boots and shoes, wagons, carriages, stoves, hardware, and bricks. An active trade in mules is carried on, and large quantities of cotton, wool, and coal are exported. St. Louis was founded in 1746 as a fur trading station. Pop. 848,000.



St. Louis, Missouri. The Broadway Court House



St. Mark's, Venice. Western façade and chief entrance of the Romanesque cathedral, on the Piazza San Marco

East St. Louis stands on the Mississippi, in Illinois, opposite St. Louis, Missouri, is an important rly. terminus, and is noted for its extensive stockyards, pork and beef packing houses, and mule markets. There are iron foundries, blast furnaces, pneumatic tool and silica works, glass works, rolling mills, etc. It has several parks. Pop. 66,767.

ST. LUCIA. Largest of the Windward Islands in the British West Indies. It is 25 m. N. of St. Vincent and 25 m. S. of Martinique. Its main importance is due to the excellence of the harbour of Castries, the chief town. The administrator is assisted by a nominated executive and legislative council. The island was discovered in 1502, and became British in 1803. Its area is 233 sq. m. Pop. 56,900.

St. Lucia Bay is a shallow, land-locked lagoon on the coast of Zululand, Natal. It was annexed by the British, Dec. 18, 1884.

ST. MALO. Seaport and watering place of N.W. France. In the dept. of Ille-et-Vilaine, on a rocky peninsula at the mouth of the Rance, opposite Dinard, it is surrounded by ancient towered ramparts, with eight gates, and has a castle built in the 14th-15th century, used as a barracks. The church, founded in the 12th century, is mainly of 15th-16th century work. Motor boats, called vedettes, connect with Dinard and Dinan; steam trams with Paramé, St. Servan, and Cancale; and steamers with the Channel Islands and Southampton. Timber and coal are imported; cattle, game, and dairy produce exported.

St. Malo is named after a Welsh monk, S. Malo or S. Maclou, who was bishop here in the 6th century. Pop. 13,137.

St. Margaret's. Residential dist. of Middlesex. On the S.R., it forms part of the urban dist. of Heston and Isleworth.

ST. MARGARET'S. London church. Adjoining Westminster Abbey, it was founded as the parish church of Westminster in the 12th century and was rebuilt in the 16th. In 1614 it was made the official church of the House of Commons, which it still is. Its bells are rung

when a new Speaker is admitted. It is rich in memorial windows and monuments. Its rector is usually chaplain to the Speaker and a canon of Westminster.

ST. MARGARET'S BAY. Watering place of Kent. It is 4 m. from Dover, on the Southern Rly. The bathing is good, and there are golf links.

ST. MARK'S. Cathedral in Venice. It is the largest of the Italian Byzantine churches, covering an area of 46,000 sq. ft. and measuring 260 ft. by 215 ft. externally. It was constructed of brick, which has since been overlaid with coloured marble, in the form of a Greek cross. The façade on the Piazza San Marco consists of two storeys, of which the lower has the main entrance in the centre of a line of five semi-circular arches, the design being repeated on a slightly smaller scale in the upper storey. See illus. above.

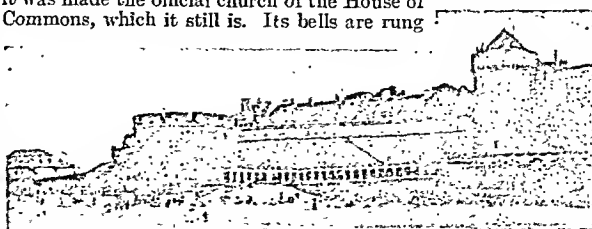
ST. MARTIN'S - IN - THE - FIELDS. London church. It is situated on the east side of Trafalgar Square and was built in 1721-26, on the site of an earlier church. During the Great War it was continuously open as a resting place for soldiers, and later, when Rev. H. R. L. Sheppard was rector, its services were frequently broadcast. The churchyard has been covered in.

ST. MARTIN'S SUMMER. Name given to the warm, calm, dry weather frequently experienced in the British Isles in the autumn. See Indian Summer; Martinmas.

ST. MARY'S. Largest of the Scilly Islands. About 27 m. W.S.W. of Land's End, it is about 2 m. in length and breadth. Star Castle is an Elizabethan fortress. Hugh Town, on the W. coast, is the capital of the group. It has a good harbour and a pier. Pop. 1,400.

ST. MARY'S. River between Lakes Superior and Huron, N. America. It is 40 m. long and is divided by islands into two main channels which each expand at intervals to a width of 10 m. Between the two lakes the fall is 21 ft., most of which occurs in the sault or rapids, which are about 1 m. long. Since 1855 canals have made the rapids navigable. See Sault Ste. Marie.

St. Mary's is also the name of a loch or lake in the W. of Selkirkshire, Scotland, 3 m. in length. It figures in Scott's poems.

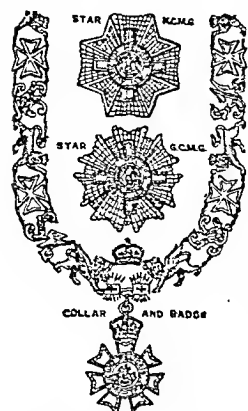


St. Malo, France. View of Grande Plage and 14th century castle

ST. MAURICE. River of Canada. A left-bank tributary of the St. Lawrence, it flows for 325 m. through Quebec, and joins the main stream at Three Rivers.

ST. MAWES. Summer resort of Cornwall. It stands on St. Mawes Harbour, an arm of Falmouth Bay, 3 m. E. of Falmouth. St. Mawes Castle (1542) was captured by Fairfax in 1646. Pop. 600.

ST. MICHAEL AND ST. GEORGE. British order of knighthood. It was founded in 1818 especially for natives of the Ionian Islands and the Mediterranean area. Later it became an order to reward services rendered in the British overseas dominions generally. Its statutes have been remodelled several times, one occasion being in 1902. The order has three grades: G.C.M.G., knight grand cross; K.C.M.G., knight commander; and C.M.G., companion. The first two are distinguished as Sir.



St. Michael and St. George. Collar, badge, and stars of the order

The badge is a white cross of 14 points, having in the centre the figure of S. Michael trampling on Satan. The motto is *Auspiciis melioris*

aevis (Augury of a better age). The ribbon is of Saxe blue with crimson centre. Membership is limited to 100 knights grand cross, 300 knights, and 600 companions. The prince of Wales is grand master, and the order has a chapel in S. Paul's cathedral.

ST. MICHAEL'S MOUNT. Rock in Mounts Bay, Cornwall. About 3 m. E. of Ponzance, and connected with the mainland by a low-tide causeway, it rises over 200 ft., and has at its summit a 6th century castle, long the seat of the St. Aubyn family. Mont St. Miel (q.v.), in Brittany, is sometimes known as St. Michael's Mount.

ST. MIHEL. Town of France. It stands on the slopes of the Côtes de Meuse, on the right bank of the river, 11 m. N.N.W. of Commercy and 20 m. S. by E. of Verdun. Its buildings include an 8th century Benedictine abbey and the churches of S. Michel and S. Étienne. Captured by the Germans, Sept. 25, 1914, it remained in their possession until Sept., 1918, when American and French troops retook it. A Franco-American monument was unveiled in 1919. Pop. 4,542.

ST. MORITZ. Watering place of the upper Engadine, in the canton of Grisons. It stands at an alt. of 6,090 ft., on the lake of St. Moritz, 27 m. S.E. of Coire (Chur). It is a favourite resort both for its winter sports, and for its chalybeate, sulphureous, and carbonic springs in summer. The noted Cresta run is here. Pop. 2,669.

ST. NAZAIRE. Town of France. It stands on the Loire near the sea, some 40 m. W. of Nantes, of which it is the port. There are regular sailings to S. America. Trade is carried on in grain, salt, tobacco, coffee, sardines, and cognac. In the Great War the British established a temporary base here and at Nantes for a few weeks in Aug.-Sept., 1914. Pop. 39,711.

ST. NEOTS. Urban dist. and market town of Huntingdonshire. It stands on the Ouse, 8 m. S.W. of Huntingdon, on the L. N. E. R. Named after S. Neot, whose relics were translated

from Cornwall to Eynesbury, near by, in 974. St. Neots has a fine parish church. The industries include paper making. Market day, Thursday. Pop. 4,109.

ST. OMER. Town of France, 42 m. from Lille. It stands on the Aa, and is connected with the sea by a canal. The chief buildings



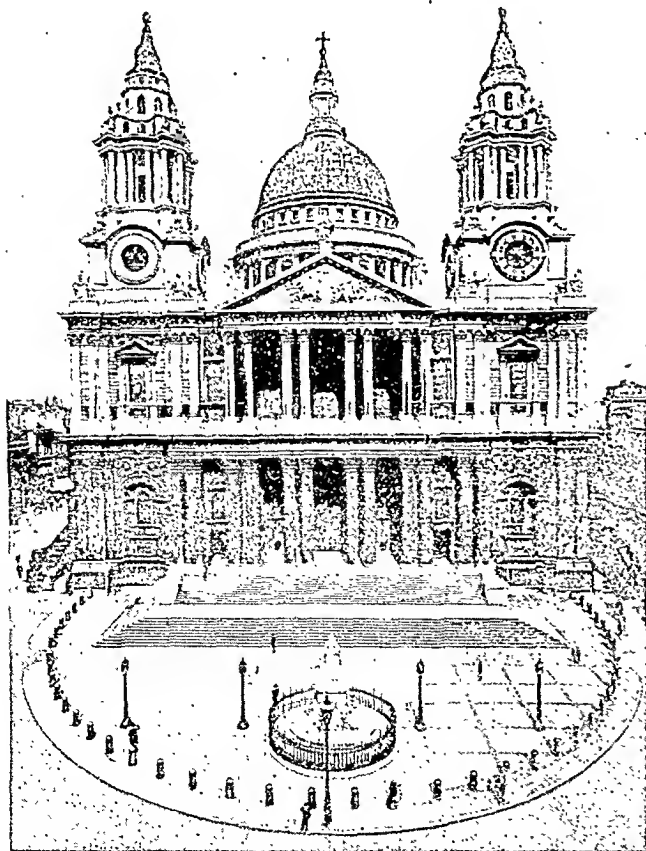
St. Michael's Mount, Cornwall. Granite rock crowned by an historic castle

include the church of Notre Dame, once a cathedral, the churches of S. Denis and S. Sepulchre, and the town hall. The Hôtel Colbert houses a museum. A massive tower, 190 ft. high, and other remains are reminders of the abbey of S. Bertin, founded here in the 7th century by S. Omer. The buildings of the Jesuit college, opened in 1592, remain, although put to other uses. In the Great War, from Oct. 12, 1914, to March 31, 1916, St. Omer was the British headquarters. Pop. 18,858.

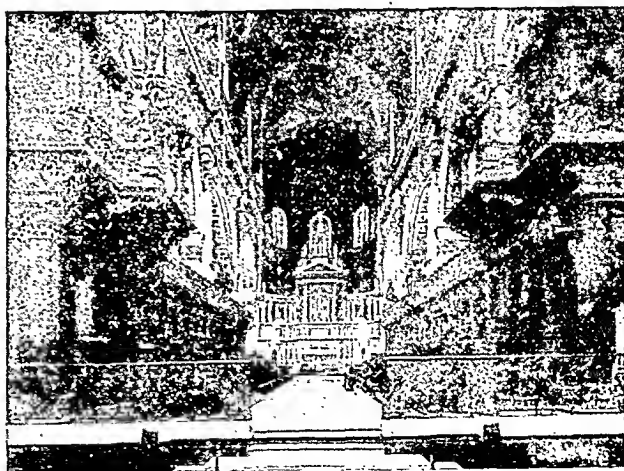
ST. OSYTH. Village of Essex. It stands on a creek of the Colne, 10 m. from Colchester, and owes its name to a nunery founded in honour of Osyth, a queen martyred by the Danes. Later a priory was built here, and remains of this are included in the house built in the 16th century and called St. Osyth's priory. St. Osyth has a large church with a massive western tower and a tidal mill.

ST. PANCRAS. Met. bor. of the eo. of London. Bounded E. by Islington, S. by Holborn, W. by Marylebone and Hampstead, and N. by Hornsey, it includes the districts of Somers Town, Chalk Farm, Camden Town, Kentish Town, and part of Highgate; the railway termini of Euston, St. Pancras and King's Cross, University College, and the North London or University College Hospital. The old church, dating from about 1180, in the St. Pancras Road, rebuilt in 1847-48, was succeeded as the parish church in 1822 by that in the Euston Road. Pop. 211,366.

ST. PATRICK. Irish order of knighthood. It was founded in 1783 by George III, after Ireland had obtained legislative independence, and its constitution was revised in 1905. It consists of only one class of knights, distinguished as K.P. and limited to 22. They wear a collar adorned with harps alternating with double roses and double knots, the roses being alternately red within white and white



St. Paul's, London. Left, west front of the cathedral built by Wren; the north-west tower, on the left, contains the peal of bells; in the other tower are the clock and the old bell called Great Paul. On the right is shown the interior of the choir, looking towards the High Altar. See p. 1191



within red. The hadge which hangs therefrom is an oval composed of a red saltire surrounded by a green crown within a circle of sky blue. The motto is *Quis Separabit* (Who shall separate?), surrounded by a wreath of shamrock. The ribbon is sky blue.

ST. PATRICK'S DAY.

Anniversary of the death of the national saint of Ireland, March 17. On it Irish soldiers and others wear the shamrock. It is omitted from the Church of England calendar. See Patrick.

ST. PATRICK'S PURGATORY.

Name of a cave on an island in Lough Derg, co. Donegal, Irish Free State. The island is called Station Island. St. Patrick's Purgatory has long been a place of pilgrimage from all parts of Europe.

ST. PAUL. City of Minnesota, U.S.A. The state capital, it stands on the Mississippi river, opposite Minneapolis. Among prominent buildings are the state capital and the Roman Catholic cathedral. Educational institutions include Hamline University. St. Paul is an important rly. and commercial centre. There is a large horse market. Printing and publishing are leading industries, and manufactures consist largely of foundry and machine shop products and fur goods. There are also meat packing establishments. Pop. 246,001.

ST. PAUL'S. Cathedral of London. Its foundation stone was laid June 21, 1675, the entire structure being completed in 1710. The third cathedral church built on this site, it was preceded by a Norman building which was virtually destroyed by the Great Fire in 1666; this in its turn followed a Saxon church, which was burnt in 1086. The present church was designed by Sir Christopher Wren. A product of the late Renaissance in Great Britain, it is unique among British cathedrals as the only non-Gothic building of its class. Wren's original plan was that of a Greek cross; but the clergy stipulated that the form should be a Latin cross, with a long nave and aisles, and Wren modified the design accordingly.

Its central feature is the dome, crowned by its cupola and lantern with the golden ball and cross. Constructionally, the dome is two-fold, consisting of an inner and outer shell. The two flanking towers at the W. end are crowned by cupolas. Linking the campanile towers together is the main portico, in two storeys, crowned by a triangular pediment. Two broad flights of stone steps lead up to the entrance. On the N. and S. sides the two-storey construction is repeated in the semi-circular porticoes, two orders, Corinthian and Composite, being used for these. The crypt extends under the entire building, and contains the tombs of Nelson, Wellington, and other famous men.

In April, 1925, to allow for more extensive repairs, the dome area was closed, and services were held in the nave. These were completed in 1930, when the cathedral was reopened. In the churchyard, which is converted into a public garden and gives its name to the surrounding thoroughfares, are remains of the famous open-air pulpit known as Paul's Cross. A handsome memorial cross with a kind of pulpit at the base was erected here in 1910. See Altar; London; Ludgate Hill, illus.; Renaissance; also illus. p. 1190.

ST. PAUL'S SCHOOL. English public school. Founded by John Colet (q.v.) in 1509, the first school was at the east end of the old cathedral. The third and last building on the same site was occupied until 1884, when the school was removed to Hammersmith,



St. Patrick. Collar, badge, and star of the Irish order

where large new buildings were erected. Its head is the high master.

ST. PETER. Lake of Canada, in Quebec. It is an expansion of the St. Lawrence river, 40 m. below Montreal. It is 30 m. long, 7 m. wide, and 130 sq. m. in area.

ST. PETER PORT.

Town of Guernsey, the capital of the island. It stands on the E. coast and has an extensive harbour. There is regular steamboat service to other Channel Islands. On a rocky island in the harbour is Castle Cornet, an old fort, and S. of the town is Fort George. The chief buildings are the Town Church, dating from the 13th and 14th centuries, the court house, where the island legislature meets, and Elizabeth College. Pop. 16,213. See Guernsey.

ST. PETER'S. Cathedral in Rome, the chief church of Roman Catholic Christendom, wherein the popes are crowned. A medieval cathedral formerly occupied the site of the present structure, but by the middle of the 15th century this had fallen into ruins. Plans having been prepared by Donato Bramante, the foundation stone was laid in 1506.

In the hands of several architects, both the plan and the details of the cathedral underwent much modification. Bramante had planned



St. Peter's, Rome. Western façade of S. Pietro in Vaticano, metropolitan cathedral and the largest church in the world. On the right is the main entrance to the Vatican palace, which rises behind

a Greek cross; Peruzzi's alterations were based on the plan of a Greek cross inscribed in a square; Sangallo, while retaining this form, modified the external design; Michelangelo completed the design for the dome and lantern so effectively that, though he did not live to see its completion, his work was faithfully carried out by Della Porta and Fontana. Maderna reconstructed the nave, and introduced a great deal of architectural detail that has been almost universally condemned. Finally, about 1660, Giovanni Bernini added the piazza with its colonnades.

ST. PIERRE. Island near Newfoundland, forming part of the French colony of St. Pierre and Miquelon. St. Pierre, with adjacent islets, has an area of 10 sq. m. The town of St. Pierre is the capital of the colony. The chief industry is the cod fishery. Pop. 3,040.

SAINT-PIERRE, JACQUES HENRI BERNARDIN DE (1737-1814). French author. Born at Havre, Jan. 19, 1737, and educated at Caen and Rouen, he became an engineer and

spent some time in rather aimless wanderings about Europe. After three years in Mauritius he returned, in 1771, to France, where he

became a friend of Rousseau, under whose influence he wrote his *Études de la Nature* and his *Harmonies de la Nature*. His famous idyll, *Paul et Virginie*, published in 1789, though over-sentimental for modern taste, still retains its charm. Saint-Pierre died Jan. 21, 1814.

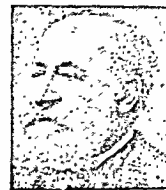


B. de Saint-Pierre, French author

ST. QUENTIN. Town of France. It is situated on the Somme, 95 m. N.E. of Paris. Industries include the making of textiles, sugar, and machinery. Among notable buildings are the collegiate church, dating from the 13th to the 15th century, and the 14th century town hall. During the German occupation, 1914-18, most of the town was destroyed, the collegiate church, burnt by the Germans, being partly reopened in 1920. Pop. 49,201.

St. Quentin figured prominently in the Great War. The St. Quentin sector, as it was called, was the scene of several Allied attacks in 1916-17, with the town, an important railway centre, as their objective. It was on the Allied front St. Quentin-La Fère that the great German attack on the British Fifth Army took place on March 21, 1918. Sometimes called the battle of St. Quentin, this is more correctly the second battle of the Somme (q.v.).

ST. RAPHAËL. Fishing town of France, in the dept. of Var. It is on the Mediterranean Sea, 2 m. S.E. of Fréjus. Napoleon landed here on his return from Egypt in 1799, and embarked from here for Elba in 1814. The buildings include an old church, once fortified, and the modern one of Notre Dame de la Victoire. There are relics of a Roman aqueduct. From here starts the Corniche d'Or, a fine coast road to La Napoule, completed in 1903. The town is a bathing and winter resort. Pop. 5,000.



C. C. Saint-Saëns, French composer

SAINT-SAËNS, CHARLES CAMILLE (1835-1921). French composer. Born in Paris, Oct. 9, 1835, he studied under Benoist and Halévy at the Conservatoire, was organist of S. Merri, 1853-58, and of the Madeleine, 1858-77. The most successful of his operas

were Samson and Delilah, produced at Weimar, 1877, and at the Opéra, Paris, 1892; and Henry VIII, 1883. His orchestral symphonic poems have much dramatic force. Saint-Saëns published several volumes of criticism, essays, etc. He died Dec. 17, 1921.

ST. SAMPSON. Town of Guernsey. It is on the E. coast, 2½ m. N. of St. Peter Port. It has a tidal harbour, sheltered by a breakwater 650 ft. long, a 12th century church, and an extensive trade in stone. Pop. 6,000.

SAINTSBURY, GEORGE EDWARD BATEMAN (b. 1845). British scholar. He was born at Southampton, Oct. 23, 1845, and educated at King's College School



G. E. B. Saintsbury,
British scholar
Russell

and Merton College, Oxford. After eight years as a schoolmaster, and 20 years as a journalist, he was professor of rhetoric and English literature at Edinburgh University, 1895-1915. His numerous works, characterised by great range of knowledge and marked individuality of style, include *A Short History of French Literature*, 1882; *A Short History of English Literature*, 1898; *A History of Criticism*, 1900-4; *A History of English Prosody*, 1906-10; *The English Novel*, 1913; *Notes on a Cellar Book*, 1920, and three *Scrap Books*, the last appearing in 1924.

ST. SERVAN. Town of France. It stands at the mouth of the Rance, about a mile from St. Malo. It is defended by a fort known as the "Cité." The Tour de Solidor dates from the 14th century. Pop. 12,622.

SAINT-SIMON, CLAUDE HENRI, COMTE DE (1760-1825). French economist. Born in Paris, Oct. 17, 1760, he fought against the British in the American War of Independence. Imprisoned as an aristocrat during the French Revolution, he yet sympathised with its principles, but suffered from disillusionment as he realized the incapacity of the mob for government. He died May 19, 1825.

Saint-Simon's socialist theories are expounded chiefly in *The Industrial System*, 1821. The corner stone of the socialist community, as outlined by him, was to be an aristocracy of intellect, a body of experts regulating society in a scientific way.

SAINT-SIMON, LOUIS DE ROUVROY, DUC DE (1675-1755). French writer. He was born at Versailles, Jan. 16, 1675, and became a soldier. In 1696 he married Gabriel de Durfort, and on the death of Louis XIV he

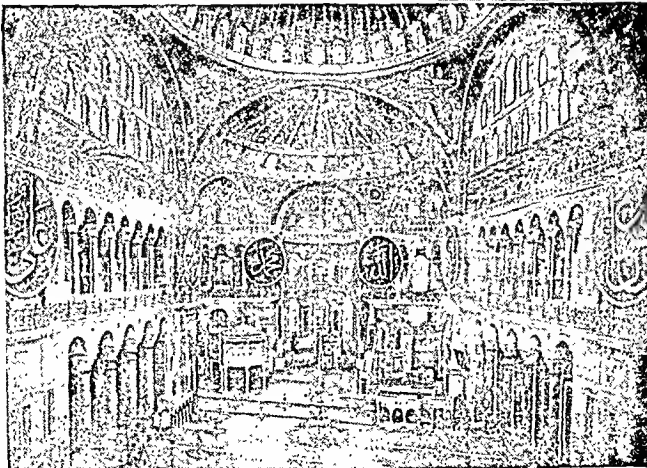
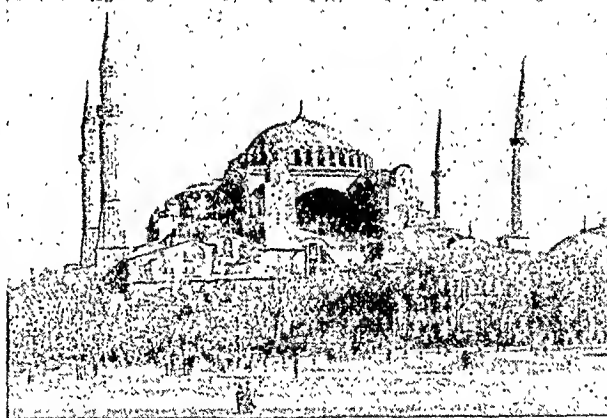
became a member of the council of regency. In 1721 he went to Spain to arrange the marriage of Louis XV with the Infanta, and shortly after his return, 1723, retired to La Ferté-Vidame, where he devoted a great part of his time to the writing of his famous memoirs. He died in Paris, March 2, 1755.



Duc de Saint-Simon,
French writer

Some portions of Saint-Simon's Memoirs were published from time to time surreptitiously, but it was not until 1839 that they were issued in full. His memoirs are unmatched for their pen-portraits of people whom the writer had met, and are invaluable for the light they throw on the life of his period.

ST. SOPHIA. Mosque in Istanbul (q.v.). It was originally a Christian church, of which the foundation stone was laid by Justinian, Feb. 23, 532. The church was completed within six years, and on Dec. 26, 537, was formally dedicated to Hagia Sophia (Holy Wisdom). In ground plan the church is nearly square, the measurements, excluding the apse and narthex, being 250 ft. by 237 ft. The main building is reached through an outer and an inner narthex. A great central door, or royal gate, leads into an oval-shaped nave, of which the centre consists of a square (107 ft. sides) bounded by massive piers, of which the semicircular arches support a great dome. On either side of the nave is an aisle in two storeys, and the semicircular ends of the nave are crowned by semi-domes linked up with the main dome. The walls are of brick, lined with precious marbles, and the columns are con-



St. Sophia, Istanbul. Top, view from the south, showing the minarets added by the Turks. Below, interior of the nave, with its splendid Byzantine architecture

ST. THOMAS. City of Ontario, Canada. It stands on Kettle Creek, near Lake Erie, 167 m. from Toronto, and is served by the C.N. Rlys. and the C.P.R. - The industries include rly. shops, flour mills, and the making of clothing and agricultural implements, and the city is a market for the fruit and other produce of the vicinity. Pop. 16,026.

ST. THOMAS'S HOSPITAL. Charitable medical institution in London. The buildings are on the Albert Embankment, adjoining Westminster Bridge. It was founded in the reign of William II out of the proceeds of a ferry over the Thames near London Bridge. Destroyed by fire in 1207 and rebuilt in 1228, the hospital was endowed and incorporated by Edward VI in 1553. The present building was opened by Queen Victoria in 1871. It contains over 1,000 beds, and has a large and excellent medical school attached to the hospital. See London.

ST. VALENTINE'S DAY. Feast of S. Valentine (Valentinus), an Italian saint, celebrated Feb. 14. The feast has been regarded since the Middle Ages as a lovers' festival. A friend or sweetheart chosen on that day was a "valentine" for the rest of the year.

ST. VINCENT. One of the Windward Islands, West Indies. A British possession, it lies S. of St. Lucia. In the N. is the volcano of Soufrière. The fertile valleys yield sugar, arrowroot, cacao, spices, and Sea Island cotton. In 1902 the Soufrière erupted, simultaneously with Mont Pelée, and a third of the island was devastated. Kingstown is the capital. The area is 150 sq. m. Pop. 51,426.

ST. VINCENT, CAPE. Promontory forming the S.W. corner of Portugal. It is famed for several naval battles fought in its vicinity. The most important is that fought on Feb. 14, 1797, when the British under Jervis overwhelmed the Spanish fleet. This victory, which was largely due to the genius of Nelson, frustrated the scheme for the Spanish-French invasion of England. There is a lighthouse on the cape, and near is Sagres.

The gulf of St. Vincent is an indentation of the coast of S. Australia. It is separated from Spencer Gulf by Yorke Peninsula; off the mouth lies Kangaroo Island. It is 90 m. long and 40 m. wide.

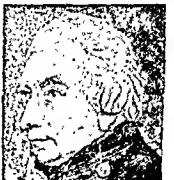
The city of Adelaide is on the E. shore.

structed of porphyry and verd antique.

The church became a Mahomedan mosque in 1453, but beyond a number of minarets and other adjuncts, added by the Turks to its exterior, little alteration was made, and it remains a perfect specimen of Byzantine craftsmanship.

ST. THOMAS. One of the Virgin Isles, W. Indies, belonging to the U.S.A. It is situated about 38 m. E. of Porto Rico, is 14 m. long, and has an area of 32 sq. m. The capital is Charlotte Amalie.

ST. VINCENT, JOHN JERVIS, EARL OF (1735-1823). British sailor. Born Jan. 9, 1735, he went to sea at the age of fourteen. In 1775 he was appointed to command the *Foudroyant*, in which he had several actions with the French, took part in the relief of Gibraltar, and in the battle off Cape Spartel, 1782. In 1794 he sailed to the West Indies and captured Martinique and Guadeloupe. In 1795 he was appointed commander-in-chief in the Mediterranean, and off Cape St. Vincent he effected a brilliant victory, 1797, over the Spanish fleet. For this he was made an earl. He commanded the Channel fleet, 1799-1801, and was first lord of the admiralty 1801-4. He died March 13, 1823, when his earldom became extinct. A nephew became Viscount St. Vincent, and this title persists.



Earl St. Vincent,
British sailor
J. Keenan

ST. VITUS'S DANCE. Popular name for chorea (q.v.). Sufferers from epidemic dancing mania in medieval Germany resorted to the shrines of S. Vitus or Guy, a boy who was martyred under Valerian or Diocletian.

SAKARIA. River of Asia Minor. It rises in the ranges E. of Kutaya, and, after a sinuous course, flows into the Black Sea about 90 m. E. of Istanbul (Constantinople).

The battle of Sakaria was fought between the Greeks and the Turks in Aug.-Sept., 1921. The Turks gained a slight advantage, but the losses on both sides were about equal.

SAKÉ. Japanese national beverage. A kind of beer, made chiefly from rice, it is an alcoholic, fermented beverage produced by a complicated process in which bacteria obtained from *Aspergillus oryzae* play an important part. The first fermentation lasts for about a month, the second for a little over a week. Light in colour and unpleasing to the European palate, saké quickly produces intoxication.

SAKHALIN OR **SAGHALIEN.** Island of E. Asia divided between Soviet Russia and Japan. It is situated on the W. side of the sea of Okhotsk, and is separated from the mainland by the gulf of Tartary. Larch, fir, spruce, and birch occur in the extensive forests. Fishing is the chief industry. There are important coalfields. The island was used by the Russians as a penal colony. The S. portion, known as Karafuto, was ceded by Russia to Japan in 1905, at the close of the Russo-Japanese War. The total area is 24,560 sq. m. The area of Karafuto is about 13,934 sq. m. and the pop. 221,243.

SAKI (Pithecia). Group of American monkeys with non-prehensile tails. The body is usually covered with long, dark hair, and the face is yellow or whitish. They occur only in Guiana and the valley of the Amazon.

SAKKARA OR **SAQQARA.** Village near the left Nile bank midway between Gizeh (El Giza) and Dahshur, in Egypt. The plateau westward was used under the Old Kingdom as a necropolis. Of its many pyramids, mostly in ruins, the IIIrd dynasty step pyramid of Tcheser is a transitional mastaba (q.v.). The VIth dynasty pyramid of Unas contains a basalt sarcophagus. The Vth and VIth dynasty tombs are many-chambered structures with exquisite mural reliefs. See Apis; Serapis.

SAL (*Shorea robusta*). Timber tree of the order Dipterocarpaceae. A native of India, it attains a height of about 100 ft., has alternate oval leaves and clusters of sweet-smelling yellow flowers. The resin from the trunk yields dammar, and the tough, close-grained wood, stronger and heavier than teak is extensively used in shipbuilding.

SALA, GEORGE AUGUSTUS HENRY (1828-95). British journalist. Born Nov. 24, 1828, in London, where, and in Paris, he had a desultory education, he became a clerk, then a theatrical scene painter and book illustrator.



G. A. Sala,
British journalist

In 1848 he edited *Chat*; he wrote regularly for *Household Words*. 1851-56; and in 1857 began his long connexion with *The Daily Telegraph*, for which he acted as special correspondent with the North during the American Civil War, 1861-66; with the French, in the Franco-Prussian War,

1870-71; in Russia, 1876; in Australia, 1885; and elsewhere. He founded and edited *Temple Bar* and wrote several novels and books of travel. He died at Brighton, Dec. 8, 1895.

SALAAM (Arab. salām, peace). Oriental salutation. Strictly the salaam is the verbal salutation between Mahomedans, but the word is applied in the East to any salutation, especially to a ceremonious obeisance, such as that performed in India by bending low the head and body and placing the palm of the right hand on the forehead.

SALADIN (Ar. Salah-ud-din, honouring the faith). Sultan of Syria and Egypt. He spent his youth in Damascus, of which city his father was governor. For five years he fought the Christians who came to the aid of Egypt, and by 1170 he had become vizier. On the death, in 1174, of his master, Nur-ed-din, sultan of Syria, Saladin hastened north and by the following year had made himself master of the realm and been declared sultan. The next few years were spent in extending his territory and in strengthening his hand for the inevitable struggle with the Christians which he opened in 1187 by a brilliant sweep through Palestine, culminating in the capture of Jerusalem, Oct. 2, 1187. Saladin died at Damascus, March 4, 1193.

The Saladin tithe was a tax levied in England in 1188 to procure money for the third crusade.

SALAMANCA (anc. Salmantica). City of Spain. It is 172 m. by rly. N.W. of Madrid, on the river Tormes, here crossed by a bridge of 27 arches, more than half of Roman construction. The city contains many relics of the time when it was the seat of one of the most celebrated universities in Europe. Its great colonnaded square is one of the finest in Spain. The 12th century cathedral is a fine example of the Transition style, while the new one, built 1513-1734, is an imposing Gothic building. The university was founded about 1230. Long famous for its

leather-work, the city also makes cloth, linen, and pottery. It is an important rly. junction. Pop. 36,530

The battle of Salamanca was a British victory in the Peninsular War, July 22, 1812. Wellington had taken up his position south of Salamanca and was guarding the road to Ciudad Rodrigo, by which his communications passed to Portugal. He was then attacked by the French, who were repulsed after a sanguinary fight.

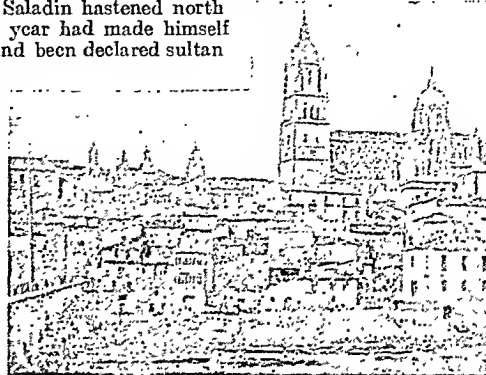
SALAMANDER (*Salamandra*). Genus of tailed hatrachians. It consists of three species only, natives of Europe and W. Asia. In general form resembling the newts (q.v.), they differ in having five toes on each of the short, stout limbs, in the tail being rounded instead of compressed, and in the body being of heavier build. The spotted S. (S.

maculosa) of Europe (except Britain), Algeria, and Asia Minor, is usually 5 or 6 ins., but occasionally 8 ins., in length. It is black in colour with patches of yellow on the back and limbs. The animal is poisonous, its venom consisting of a milky fluid squirted from the pores of the smooth skin. The head is as broad as long. The females retain their eggs until the larvae are ready to hatch, then seek the water and deposit either eggs or larvae. When the tadpole stage is completed the young leave the water, and live henceforth in moist situations on land. See Axolotl.



Salamander in heraldry.
See below

SALAMAN- DER. Legendary creature, supposed to live in fire. It had the form of a dragon, and its skin was so incombustible that a fireproof cloth, really made of asbestos, was said to be made from it. According to Paracelsus, a salamander is an elemental spirit of the fire. In heraldry the salamander is a four-



Salamanca, Spain. City from the left bank of the river showing the Gothic cathedral

legged and long-tailed creature, surrounded by flames. See illus. above.

SALAMIS. Island of Greece, in the Saronic Gulf, W. of Athens. Crescent-shaped, it covers 36 sq. m. Pop. 12,000.

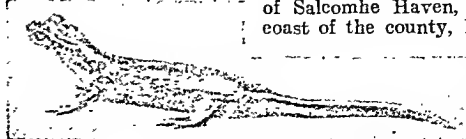
Salamis is famous for the naval engagement fought between the Greeks and Persians, 480 B.C. To bring the Persians to action, Themistocles sent a messenger declaring that the Greeks intended to withdraw and advising them to blockade the entrances to the bay of Eleusis, and so cut off their retreat. The Persians proceeded to do so, feeling confident of success with 1,000 ships against 360. After a fight of over several hours, victory at last rested with the Greeks.

Another Salamis was a town of Cyprus, afterwards called Konstantia.

SAL AMMONIAC. Ammonium chloride NH_4Cl . It is used as an electrolyte in batteries, as a flux in soldering, in dyeing and calico printing. In medicine sal ammoniac is used in bronchitis and pneumonia as an expectorant.

SALANDRA, ANTONIO (b. 1853). Italian statesman. Born near Foggia, Aug. 31, 1853, he became a lawyer. Elected to parliament, 1886, he served in the treasury, 1891-96; was minister of agriculture, 1899-1900; and of finance, 1906, 1908-10. In 1914 he became premier, and was at the head of the government which placed Italy on the side of the Allies and entered the Great War, 1915. He resigned in 1917, but represented Italy at the Peace Conference of 1919.

SALCOMBE. Urban dist. and watering place of Devonshire. It stands on the W. side of Salcombe Haven, an opening on the S. coast of the county, 11 m. from Dartmouth. The station is Kingsbridge, on the G.W.R. At one time the Salcombe clippers were noted. There was once a castle here. Pop. 2,201.



Salamander. Specimen of black or alpine salamander
W. S. Berridge, F.Z.S.

SALE. Contract whereby one person, called the seller, or vendor, transfers or agrees to transfer property to another, called the buyer or purchaser, in return for a money payment, called the price. If the price is not in money, the transaction is barter.

SALE OF GOODS ACT. This is a law of 1893 codifying the law relating to the sale of goods in the United Kingdom. It introduced little new law, and was a very successful attempt to compress into some 60 sections the results of an enormous number of decisions on this important business subject, together with one or two statutory provisions. It defines sale and distinguishes between a sale and an agreement to sell. The first is where the property is, by the contract itself, transferred to the buyer. The second is where the transfer of the property is to take place at a future time or on the fulfilment of a condition.

SALE. Urban dist. of Cheshire. It stands on the Mersey, 5 m. from Manchester, and is served by the L.M.S., L.N.E., and Cheshire Lines Rlys., also by the Bridgewater Canal. It is really a residential suburb of Manchester. Pop. 16,337.

Sale is the name of a township of Victoria, Australia. On the Thomson river, 128 m. by rail from Melbourne, it is the chief town in Gippsland and a centre of gold mining and dairying. Pop. 4,020.

SALEM. City of the Jebusites, of which, in Abraham's time, Melchizedek was king (Gen. 14, 18; Heb. 7, 1-2). It has been identified with Jerusalem (Ps. 76, 2), of which it still serves as a poetical name.

SALEM. City of Massachusetts, U.S.A. A port of entry, on the N. side of Massachusetts Bay, it is 16 m. N.E. of Boston. Among its buildings are the city hall, custom house, court house, and armoury. Some interesting old houses remain, including the one in which Hawthorne was born, his House of the Seven Gables, and the witch house, so called because witches were examined here. There are manufactures of machinery, boots and shoes, and lumber products. Salem was settled in 1626, and the names of John Endecott and Roger Williams are associated with its early

history. In 1692 a number of persons were tried for witchcraft here, and 20 put to death. In 1774 the first assembly of Massachusetts met here. Pop. 42,821.

SALERNO (anc. Salernum). Seaport and city of Italy. It stands at the head of the gulf of Salerno, 34 m. by rly. S.E. of Naples, and is built on the slopes of a hill dominated by an ancient castle. The cathedral, built by Robert Guiscard (1076-84), is architecturally and historically interesting, with fine bronze doors, splendid marble ambons, and ivory carvings. There are some manufactures. In the Middle Ages the medical school of Salerno was world famous, as was its university, founded in 1150 and closed in 1817. Pop. 63,106.

SALFORD. City and county borough of Lancashire. It stands on the W. bank of the Irwell, which divides it from Manchester, 190 m. from London, and is served by the L.M.S. Rly. The buildings include the town hall, municipal buildings, technical institute and museum and art gallery, and there is a fine Roman Catholic cathedral. Among the many open spaces are Peel Park, Albert Park, Seedley Park, and Kersal Moor. The industries resemble those of Manchester. Here are the principal docks of the Manchester Ship Canal. Salford was made a city in 1926. Pop. 239,100. See Manchester.

SALICIN (Lat. salix, willow). Crystalline substance prepared from the bark of various species of willows and poplars. It occurs as colourless, intensely bitter crystals, and is used in medicine in practically the same way as salicylic acid.

SALICYLIC ACID. One of the carbon, hydrogen, and oxygen compounds. It occurs in many plants, is the chief component of oil of wintergreen, and is found in small quantities in many fruits. It is a powerful antiseptic, and being odourless and with little taste in small quantities, it has been used in the preservation of food, for which purpose, however, it is regarded with disfavour by many authorities. The salts of salicylic acid are called salicylates.

SALISBURY. City of Wiltshire, also the county town. It stands on the Avon, 84 m. from London, with stations on the G.W. and Southern Rlys. The glory of Salisbury is its cathedral, a perfect specimen of Early English, finely situated near the Avon. Built mainly in the 13th century, it is 473 ft. long and the spire is 404 ft. high. Features include the cloisters, chapter house, lady chapel, and library. In the close are the King's House, renovated for a training college, the bishop's palace, and other old buildings. Other churches include S. Thomas's, founded as a chapel to the cathedral in the 13th century, S. Martin's, and S. Edmund's, originally collegiate. The city has a large market place, and the poultry cross still stands. The hall built by John Halle and the Joiners' Hall are notable. The city proper is laid out in squares, known as chequers. Industries include brewing, while it is an agricultural and a military centre.

Salisbury was founded in 1220 by Bishop Poore, who decided to move his cathedral city from Old Sarum to its present site. The city is officially called New Sarum. Pop. 30,000. See Sarum.

SALISBURY. City of Rhodesia, capital of S. Rhodesia. It stands at an alt. of 4,825 ft. and is 300 m. by rail from Bulawayo and 374 from Beira. The buildings include government house, town house, library, and a court house.

There is an Anglican cathedral. The city is the centre of a mining and agricultural district. Pop. (white) 8,045. See Rhodesia.

SALISBURY, EARL AND MARQUESS OF. English titles now held by the family of Cecil. The title of earl was granted about 1149 to Patriek de Salisbury, a feudal lord in Wiltshire, and was held by other powerful nobles. From Thomas de Montacute it passed to his son-in-law, Richard Neville, falling into abeyance when his son, the earl of Warwick, was killed in 1471.

In 1605 Robert Cecil, son of the great Lord Burghley, was created earl of Salisbury. He was made secretary of state in 1596 and succeeded his father as Elizabeth's chief adviser. From 1608 until his death, May 24, 1612, he was lord treasurer, and in the confidence of James I. James, the 7th earl, lord chamberlain, 1783-1804, was made marquess of Salisbury in 1789. James, the 2nd marquess (1791-1868), was lord privy seal, 1852, and lord president, 1858-59. His marriage with Frances Mary Gascoyne introduced that name into the family. Their son, the 3rd marquess, was the prime minister. His eldest son is known as Viscount Cranborne. The family seat is Hatfield House, Hertfordshire. See Burghley, Lord; Cecil; Hatfield.



Robert Cecil, earl of Salisbury, English statesman
Zucchero

SALISBURY, ROBERT ARTHUR TALBOT GASCOYNE CECIL, 3RD MARQUESS OF (1830-1903). British statesman. The second son of the 2nd marquess, he was born at Hatfield, Feb. 3, 1830. He went from Eton to Christ Church, Oxford, and became a fellow of All Souls College. In 1853 he entered Parliament as M.P. for Stamford, where he made his name by his incisive attacks on the Liberal ministry. He was also a regular contributor to The Saturday and The

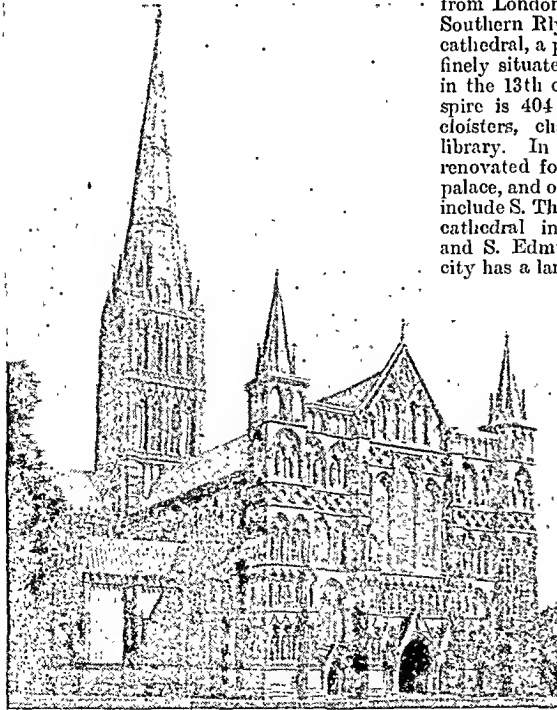


Lord Salisbury, English statesman
Russell

Quarterly Reviews, his writings, like his speeches, being attempts, pungent and powerful, to stay the tide of democracy. In 1865 he became, by the death of his elder brother, Viscount Cranborne, and in 1868 he succeeded to the titles and estates. In 1866 he began his long official career as secretary for India, but, disagreeing with the policy of Disraeli, he resigned in 1867. However, in 1874 he again became secretary for India in Disraeli's cabinet, and he remained there until made foreign secretary in 1878.

In 1881, on Beaconsfield's death, Salisbury became leader of the Conservative party, and as such he took office as prime minister in 1885. His term of office was brief, but he returned after the general election of 1886 and was in power until 1892. After three years in opposition, he became premier for the third time in 1895, this time as the head of a ministry which included Joseph Chamberlain and other Liberal Unionists. He was himself foreign secretary as well as prime minister until 1900. He resigned in July, 1902, and died Aug. 22, 1903.

Lord Salisbury took a keen interest in scientific matters and was president of the British Association in 1894. Of his five sons, Robert and Hugh won fame in politics. William was made bishop of Exeter in 1916, Edward was financial adviser to the government of Egypt. Lord Salisbury's Life was written by his daughter Gwendolen. See Cecil.



Salisbury. West front of the cathedral, ornamented with modern statues and sculptures. The 14th century spire is 404 ft. high

SALISBURY, JAMES EDWARD HUBERT GASCOYNE CECIL, 4TH MARQUESS OF (b. 1861). British politician. Born in London, Oct. 23, 1861, the eldest son of the 3rd marquess, he was educated at Eton and University College, Oxford. As Viscount Cranborne he was M.P. for the Darwen division, 1885-92, and for Rochester, 1893-1903, and was under-secretary for foreign affairs, 1900-3. From 1903-5 he was lord privy seal, and in 1905 president of the board of trade. Lord Salisbury was lord president of the council, Oct., 1922-Jan., 1924, and became lord privy seal and leader of the Conservative Government in the House of Lords in Nov., 1924, retaining office until 1929.

SALISBURY PLAIN. District of Wiltshire. Composed of rolling chalky downs, it is about 20 m. long by 15 broad, and lies to the N. of Salisbury. On the plain is Stonehenge, as well as Amesbury and other villages. A large part is used for military purposes. The chief camps are at Bulford, Tidworth, Larkhill, and Netheravon. The air force has a centre at Upavon. See Stonehenge.

SALIVA (Lat. spittle). Secretion poured into the mouth from the salivary glands. It contains about 0.5 p.c. of solids, chiefly mucin and ptyalin, and is slightly alkaline. The functions of the saliva are two-fold; first, to moisten and lubricate food, thereby facilitating swallowing; and secondly, by virtue of its ptyalin, to act upon starchy constituents of the food, preparing them for digestion by splitting them into simpler bodies.

Excessive flow of saliva is called salivation. It may be due to ulceration of the mouth, or to chronic poisoning by mercury and certain other drugs. It is most often seen in persons taking mercury for the treatment of syphilis, and is then an indication that the mercurial treatment should be stopped.

SALLUST (86-34 B.C.). Roman historian whose full name was Gaius Sallustius Crispus. He was born at Amiternum in central Italy and had a distinguished public career, ending with the governorship of Numidia, a post which he owed to Julius Caesar, with whose fortunes he had been largely associated. Returning to Rome a wealthy man, he spent the latter part of his life in luxurious retirement, devoting himself to literature. Only two of his historical works have been preserved complete, a history of the war with Jugurtha, and a history of the conspiracy of Catiline. His chief work, of which only fragments remain, was a history of Rome from 78-67.

SALMON (*Salmo salar*). Large food-fish of the Teleostean family, Salmonidae, inhabiting the seas and rivers on both sides of the Atlantic. Large salmon are about 4 ft. to 5 ft. long, and weigh from 20 lb. to about 40 lb. The flesh is pink.

Between Sept. and Jan. salmon that have reached maturity in the sea enter the rivers and journey upstream to the shallow waters near the source. At the spawning ground the female deposits her eggs, which are fertilised by the male. After the larval stage the fish, now nearly a year old, becomes a parr. About six months later the young salmon, now called smolts, begin to congregate in large companies in the broader waters of the rivers ready for their journey seaward. They are now about 5 ins. long. Some return from the sea a year later, but most of them remain for two or three years. The returned fish, mostly sexually

mature males, and known as grilse, may weigh 10 lb. or more. The females and many males remain at sea several years longer.

SALMON FISHING. The right of fishing a salmon river belongs to the riparian land-owners, who often lease the sporting rights for very large rents. The capture of salmon on economic lines is effected by nets when the fish are proceeding up the river for spawning. There is a close time for salmon in English waters; for nets from Sept. 1, and for rods from Nov. 2, both ending on Feb. 1; but the ministry of agriculture and fisheries has power to vary the dates for different rivers. In Scotland there is a further difference; and Ireland has its own dates. See Angling.

SALMOND, SIR JOHN MAITLAND (b. 1881). British airman. Born July 17, 1881, a son of Major-General Sir W. Salmond, he entered the army in 1901, and served in South Africa, 1901-2. He joined the R.F.C. in 1912, and in Jan., 1918, he succeeded Sir H. M. Trenchard (q.v.) as head of the fighting air force in France. Salmond was in Iraq from 1922 to 1924, and from 1925-29 had charge of the air defences at home. In 1929 he was made a member of the air council and in 1930 chief of the air staff. In 1919 he was knighted, and in 1929 was made an air chief marshal.

His brother, Sir William Geoffrey Hanson Salmond (b. 1878), was also a soldier. In 1913 he joined the air force, and in 1919 he commanded the R.A.F. in Egypt. He went to India in 1927 as head of the air force there.

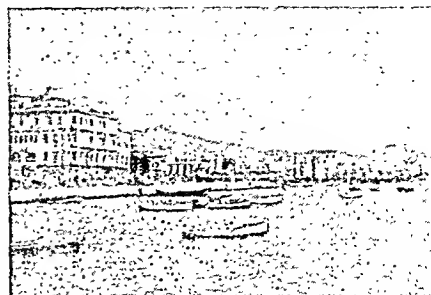
SALOMÉ. Name of the sister of Herod the Great, assassinated for plotting against his sons; and of the daughter of Herodias, who, at her mother's instigation, danced before Herod Antipas, and as a reward was granted the head of John the Baptist. It was the name also of the sister of Mary, the mother of Jesus. Oscar Wilde wrote a play called Salome.

SALONICA or **SALONIKA.** City of Greece. Situated at the head of the gulf of the same name, it is the terminus of the rly. from Belgrade-Nish, and is an important rly. junction. It has a magnificent harbour. Its ancient name was Thessalonica, and it was thus known to S. Paul, who addressed the two Epistles to the Thessalonians to its Christian people.

During the Great War a British-French force turned the city and the surrounding country into a vast fortified camp. In 1916 a revolution against the Greek government broke out, and shortly afterwards a provisional government was established under Venizelos, with Salonica as its centre. The city was half destroyed by fire, Aug. 18, 1917. By an arrangement with Greece, Yugoslavia has access to the port and a free zone in the harbour. A university was founded in 1925. Pop. 236,524.

EXPEDITION TO SALONICA. On Oct. 3-8, 1915, the Allies landed 20,000 forces at Salonica, and by the end of the month the expedition comprised between 30,000 and 40,000 men, mainly French, under General Sarrail, with some British under Sir Bryan Mahon. On Oct. 11 Bulgaria invaded Serbia, and French troops proceeded up the Vardar to effect a junction with the S. Serbian army. The British took up a position near Lake Doiran, and covered the French right. The Allied effort to expel the Bulgarians from Serbia, involving heavy fighting in Nov.-Dec., failed, and the Allies decided to hold Salonica as a base for future operations.

During the winter the force grew to 300,000 men, to whom in May, 1916, were added 100,000 Serbians from Corfu. General Milne



Salonica. General view of the harbour and quays, showing the famous Byzantine White Tower

succeeded Mahon on May 9, 1916, in command of the British, who in June and July occupied the right bank of the Struma. The French took up the line from Lake Doiran to a point W. of the Vardar, where they linked up with the Serbians. The campaign during this year was marked by some Allied successes, including the capture of Monastir. In May, 1917, the Allies undertook a general offensive, in which Greek forces assisted, but it failed in its purpose. On Sept. 15, 1918, the final offensive began which ended in the unconditional surrender of Bulgaria and the expulsion of the Germans and the Austrians from the Balkans.

Salop. Abbreviated name frequently used for the English co. of Shropshire (q.v.).

SALSETTE. Island of Bombay Presidency, India. It is situated N. of Bombay Island, with which it is connected by a causeway and bridge. Near Thana, on the E. coast, the chief town, are rock caves with colossal statues of Buddha. Ruins of Portuguese convents, churches, and villas are a reminder of the Portuguese occupation, which ended in 1739. Its area is 241 sq. m. Pop. 125,000.

SALSIFY or **SALSIFY** (*Tragopogon porrifolius*). Biennial plant of the order Compositae. It has an edible root, and is known generally as the vegetable oyster. It requires deeply dug soil, similar to that suitable for parsnips, and a sunny, open position.

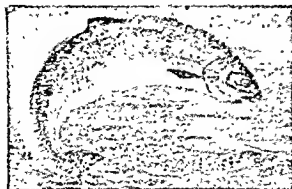
The purple flowers are seen in May or June, and should be removed as soon as they appear, for the benefit of the root. The roots are ready for use at the end of Oct., and throughout the winter, and may be preserved in the same way as parsnips.

SALT. Chloride of sodium, NaCl. Salt is widely distributed in nature, and occurs in several forms. The chief are as an ingredient of sea water, as rock salt or massive salt deposits, in brine deposits and springs. A number of impurities, these being chiefly gypsum and magnesium and calcium chlorides.

Salt is freely soluble in water, to the extent of 36 parts in 100. It is apparently essential to many forms of life, acts as an emetic in large doses, and has a therapeutic effect when applied in the form of baths. It is largely used as a meat preservative, in the manufacture of butter, etc., and in the preparation of caustic soda, sodium carbonate, soda ash, and other sodium and chlorine compounds. Salt is obtained in two ways. The simplest method is by the evaporation of sea water. Brine is also evaporated, and in the case of some salt deposits water is poured down a well in the



Sir John Salmond, British airman
Langflier



Salmon leaping while being played on a line



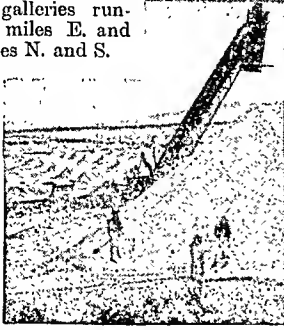
Salsify. Leaves and root

deposit, the artificial brine brought to the surface and then evaporated. Where there are large rock salt deposits the salt is mined. The salt mines in Wieliczka, near Cracow, have galleries running over six miles E. and W. and two miles N. and S.

Spirits of salt is the name given by Glauber to hydrochloric acid (q.v.), which he first prepared by pouring oil of vitriol (sulphuric acid) upon sea salt.

SALT, Sir Titus (1803–76). British manufacturer.

Born at Marley, Yorks, Sept. 20, 1803, he went to Bradford as an apprentice in the woollen trade. With his father he started in business in 1824, and developing great inventive genius devised a method of using alpaca



Salt. A pile of salt collected from the evaporation pans



Sir Titus Salt, British manufacturer

for the manufacture of cloth. The business of woollen and worsted manufacturers then grew so enormously that the town of Saltaire was erected for it just outside Bradford. For a short time Salt was Liberal M.P. for Bradford. He was made a baronet in 1869, and died on September 20, 1876.

SALTAIRE. Town of Yorkshire (W.R.). On the Aire, 4 m. from Bradford, it is served by the L.M.S. Rly., and owes its name and origin to Sir Titus Salt, who established his mills here. Other mills were built, as were churches, schools, etc. Pop. 13,500.

SALTASH. Borough, seaport, and market town of Cornwall. It stands on the Tamar, 4 m. from Devonport, on the G.W. Rly. The chief industries are fishing and malting, and there is a coasting trade. The fine bridge across the Tamar here was built by Brunel. Market days, first and third Mon. Pop. 3,631.

SALTBURN-BY-THE-SEA. Urban dist. and watering place of Yorkshire (N.R.). On the E. coast, 4 m. from Redcar, it has a station on the L.N.E. Rly. Its attractions include good sands and bathing. Pop. 4,688.

SALTCOATS. Burgh and watering place of Ayrshire, Scotland. It stands on the E. shore of the Firth of Clyde, 30 m. from Glasgow, on the L.M.S. Rly. The name is due to the salt industry which flourished here from about 1600–1800. Pop. 13,477.

SALTIRE. In heraldry, one of the ordinaries. A four-limbed figure, composed of two bands placed over each other diagonally, it has been described by some heraldic writers as a park gate or barrier, by others as a house gable, but it is generally recognized as the cross of S. Andrew, or erux decussata. A shield may be divided "per saltire," and charges grouped "in saltire." See Heraldry.

SALT LAKE CITY. City of Utah, U.S.A. The state capital, it is 11 m. S.E. of Great Salt Lake, and is the headquarters of the Mormons. Among a number of buildings belonging to the Mormons are the granite temple and the tabernacle. Other structures include the city and co. building, the Federal building, S. Mark's cathedral, and the state capitol. Salt Lake City is the seat of the university of Utah. Manufactures include boots and shoes, confectionery, tobacco, and cigars. There are also large smelters, and an

extensive business in minerals and live stock is carried on. Salt Lake City was founded by Mormons under Brigham Young in 1847. Pop. 130,948. See Mormons.

SALTNEY. Town of Flintshire, Wales. It stands on the Dee, 2 m. from Chester, on the G.W. Rly. There are docks and wharves, and ironworks. The G.W. Rly has carriage shops here. Pop. 3,500.

SALTPETRE. Potassium nitrate or nitre KNO_3 . It is a colourless solid, with a bitter, salty taste, and is found as a superficial deposit on the soil of many hot climates. The name is also given to Chile saltpetre, or sodium nitrate, NaNO_3 , and calcium nitrate (wall or lime saltpetre) $\text{Ca(NO}_3)_2$. Saltpetre is found in superficial deposits in Spain, in India and other parts of Asia, and in N. America. A powerful oxidising agent, it is used in metallurgy, the manufacture of gunpowder, as a brine in salting meat, etc.

Chile saltpetre is found in deposits spread over a large area in S. America, and known locally as caliche. It is largely used in the manufacture of ordinary saltpetre, nitric acid manufactures, as a manure, etc. Wall or lime saltpetre is manufactured by fixation of nitrogen from the air. This variety of saltpetre is employed as a manure. See Potassium.

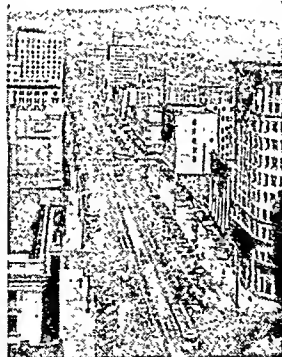
SALTWORT

(Salsola kali). Annual herb of the natural order Chenopodiaceae. It is a native of Europe, Asia, Africa, Australia, N. and S. America. Its small greenish flowers are without petals and are produced at the base of the leaves. It grows on sea-shores and was formerly important as the source of barilla, an impure carbonate of soda, which is still used in the production of glass and soap.



Saltwort. Leaves and flowers of the seashore plant

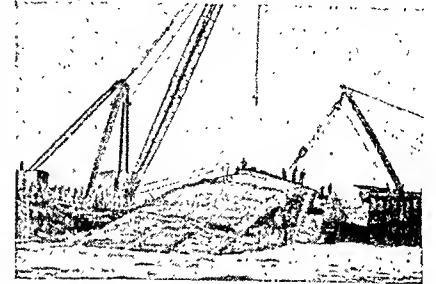
SALVADOR. Republic of Central America. It lies between the Pacific Ocean and Honduras, with Guatemala on the W. and the Gulf of Fonseca on the E. On the N. spurs of the Sierra Madro extend into Salvador; the Pacific coast plain is narrow, and is backed by the coast range of mountains, which contain the majority of the numerous volcanoes. Between the two mountain ridges lies a lofty fertile valley, the most populous area in the republic. The country is liable to earthquakes. Coffee is the chief crop and the chief export; cacao, balsam, sugar, indigo, and tobacco are grown. Cattle are numerous. The minerals include gold, silver, copper, iron, and mercury. San Salvador is the capital. The republic is a member of the League of Nations. Its area is 13,176 sq. m. and its population 1,722,579. See Central America.



Salt Lake City. Main street of the capital of Utah. It is 132 ft. wide

employed in connexion with the raising of wrecks, or rescue of vessels which have been abandoned or disabled.

The more usual methods of raising a wreck are by lifting her with hawsers, by filling her with compressed air, or by pumping her out. When a sunken vessel is to be lifted, wire



Salvage. Raising a sunken German warship at Scapa Flow

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hawsers are passed under her hull and made fast to special lighters placed on each side of the wreck. The lighters are lowered in the water by filling their ballast tanks from the sea. After the hawsers are made fast, the lighters are pumped out, which gives them increased buoyancy. This, added to the lift of the tide as it rises, enables the vessel to be hauled off the bottom and carried in the wire cradle to a place of security.

When compressed air is employed this is forced into the wreck by powerful compressors which drive out the water until the ship becomes buoyant. For pumping operations the salvage engineer uses large steam and motor driven pumps possessing a capacity of up to 800 tons per hour, and submersible electric pumps. The latter work under water.

LAW OF SALVAGE. The salvage of vessels abandoned at sea or in the hands of an enemy is governed by statute, and in all matters connected with it the admiralty division of the high court has jurisdiction. In the case of recapture from an enemy there is a fixed rate of salvage, namely, one-eighth of the value in the case of warships, and one-sixth in that of private vessels. In other cases the rate is either fixed by agreement between the owners of the rescued ship and the salvors, or is decided by the judge of the admiralty court, according to the amount of labour and risk involved.

SALVAGE CORPS. The business of salvaging property from burning buildings is of great importance in connexion with the settlement of insurance claims, and in London and one or two other large cities is specially attended to by salvage corps maintained by contributions from the principal insurance companies. The London salvage corps, which was established in 1866, is recruited from men of the Royal Navy, and cooperates with the fire brigade. The headquarters are at 63–66, Watling Street, E.C. See Fire Brigade.

SALVATION ARMY. Religious organization founded by William Booth (q.v.). Its origin was the East End Revival Society, begun by him in East London, which became the Christian Mission in 1865. Borrowing the idea of military rank and discipline, Booth selected the name Salvation Army in 1877, and was himself called general, having under him colonels, adjutants, corporals, and others. The motto adopted was Through Blood and Fire, and the buildings were called barracks. The army initiated on novel lines its work in foreign countries; in India, beginning in 1882, its officers adopted native costumes, and generally its policy was to gain confidence by intimate association with the poorest and least regarded of the population.

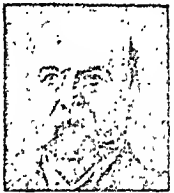
In 1912 Booth's eldest son, William Bramwell Booth, became head of the Army, and

he held office until 1929, when the high council was called together for the first time in its existence to decide upon the future control of the army. Meeting at Sunbury Court, the council almost unanimously declared the general deposed, and E. J. Higgins (q.v.) was elected as his successor.

The Army publishes a large amount of literature on its own behalf, and has been singularly fortunate in developing journalistic ability in the conduct of its weekly newspaper, *The War Cry*, founded in Dec., 1879, its monthly magazine, *All the World*, founded in 1885, and many other periodicals in languages suited to the home and foreign field. The Army has its own printing works at St. Albans.

In December, 1928, the number of officers, cadets, and employees was 35,074, and of unpaid officers, 110,025. The Army operated in 82 countries and used 72 languages. Connected with it are 323 industrial homes, 90 maternity homes and 104 children's homes, 12 farms, and 2,007 industrial schools, as well as shelters and cheap food depots.

SALVINI, TOMMASO (1829-1915). Italian actor. He was born at Milan, Jan. 1, 1829, and first attracted attention in Rome in 1847 by playing Orestes to Adelaide Ristori's Electra in Alfieri's Orestes. His greatest part was Othello, a part he first played at Vicenza in 1856. Other great rôles which he filled were Hamlet, Romeo, Macbeth, King Lear, Conrad in Giacometti's *La Morte Civile*, Oedipus in Nicolini's play of that name, Paolo in Silvio Pellico's *Francesca da Rimini*, and Saul in Alfieri's *Saul*. Salvini died at Florence, Dec. 31, 1915.



Tommaso Salvini,
Italian actor

SAL VOLATILE OR AROMATIC SPIRITS OF AMMONIA. Alcoholic solution containing ammonium carbonate and ammonium hydroxide, with small amounts of oil of nutmeg and oil of lemon. It is used as a stimulant in cases of fainting. Pron. Sal volatilly.

SALWEEN. River of Asia. It rises in Tibet and flows through China into the Shan States, whence it flows through Lower Burma to its mouth on the gulf of Martaban, near Moulmein. Its length is estimated at 1,800 m. West of the river is the Salween dist. of Burma. It is a small inland, unfertile area, bounded E. by Siam and N. by Karenni. Its area is 2,666 sq. m. Pop. 50,379.

SALZBURG. City of Austria, capital of the prov. of Salzburg. It stands on the Salzach, 156 m. W.S.W. of Vienna. The chief building is the cathedral, a model of S. Peter's at Rome. Other churches include the Franciscan church of the 13th century, and the churches of S. Sebastian, with the tomb of Paracelsus, and S. Peter, a Romanesque basilica of the 12th century. The palace was long a residence of the Hapsburg family. The Mirabell palace, once an archiepiscopal residence, is now public property. The Benedictine abbey of S. Peter and the Capuchin monastery are two of several religious houses. The Neutor is a tunnel, cut in the Monchsberg, to connect the old town with one of its

suburbs. In 1928 the Benedictine theological faculty was made into a Roman Catholic university. Pop. 37,856.

The duchy of Salzburg, now the province, originated in the lands ruled by the archbishop of Salzburg, and until 1802 was an important German state.

SAMARA. Town of Russia, capital of the prov. of the same name. It stands on the Volga, near its junction with the Samara. It is connected with the interior by three rly. systems, and is an important centre for the transport of grain, cattle, tobacco, and oil. There are large granaries. A university was established in 1919. Pop. 171,952.

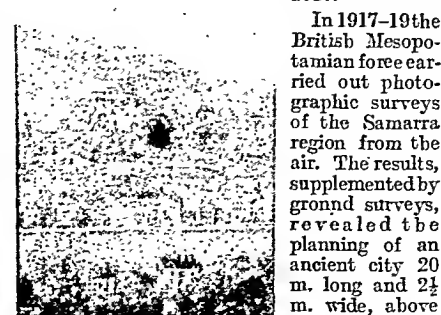
SAMARIA. Prov. in central Palestine. It was colonised by the remnants of the tribes of Manasseh and Ephraim, with an admixture of Assyrian immigrants. The city of Samaria was founded about 920 B.C. by Omri, who transferred the seat of government to it from Shechem. Destroyed by Sargon, it was rebuilt by Herod the Great, who styled it Sebaste. It was captured by the British in Sept., 1918.

THE SAMARITANS. Inhabitants of the region of Samaria, a small community of whom still exists in Nablus, the ancient Shechem. After the fall of Samaria, 721 B.C., Sargon deported a large part of the population, and replaced it with captives brought from Babylonia, Syria, and Arabia (2 Kings 17, 24-41). These, and later colonists, mingled with the old Hebrew population that remained, and the resultant new and mixed race came to be known as the Samaritans. The foreign colonists decided to worship Jehovah, the god of the land, but they blended this worship with their own heathen cults. This syncretism offended the Jews, who were strict worshippers of Jehovah, and accounts for that strife between Jews and Samaritans. Their language is a dialect of Western Aramaic.

SAMARIUM. Rare earth metal of the cerium group, chemical symbol Sa, atomic weight 150.43; atomic number 62. Its oxide was discovered in 1879 by Lecoq de Boisbaudran in samarskite.

SAMARKAND OR SAMARQAND. Town of Central Asia, capital of the Uzbek Soviet Socialist Republic (Uzbekistan). It stands near the Zarafshan (Kara Daria). Samarkand, the ancient Maracanda and the capital of Sogdiana, in the 14th century became the capital of the empire of Timur, who was buried here, and the centre of the intellectual life of Mahomedan Asia. After Timur's death, which took place in 1405, Samarkand was subject to Bokhara, until it was taken by the Russians in 1868. Pop. 101,400.

SAMARRA. Town in Iraq. On the left bank of the Tigris, it is 65 m. N.W. by N. of Bagdad. Its brick mosque has a square-based minaret 163 ft. high, ascended by an external spiral stairway recalling the old Babylonian zigurrats. It is a place of pilgrimage for Shia Moslems. It was captured by the British, April 23, 1917.

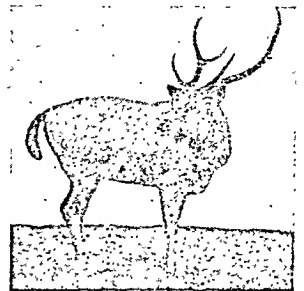


Samarra. Castle of the prince-bishops overlooking the town

In 1917-19 the British Mesopotamian force carried out photographic surveys of the Samarra region from the air. The results, supplemented by ground surveys, revealed the planning of an ancient city 20 m. long and 2½ m. wide, above and below the present town,

between the Tigris and an ancient canal. Gold coins, pottery, and tear-bottles were found. Pop. 8,000.

SAMBAR DEER (*Cervus unicolor*). Species of large deer found in India and Ceylon. It stands about 4½ ft. at the shoulder, has dark, yellowish-brown hair, and bears a fine pair of branched antlers which sometimes exceed 3 ft. in length. The neck bears a conspicuous mane of long hair. The sambar has its habitation in the forests and visits its grazing grounds chiefly by night.



Sambar Deer. Male specimen of the large deer of India and Ceylon

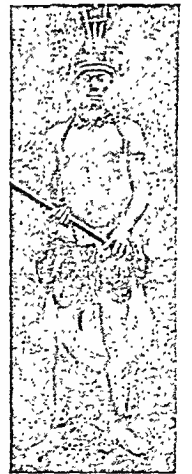
SAMBOURNE, EDWARD LINLEY (1844-1910). British artist. Born in London, Jan. 4, 1844, and educated at the City of London School and the S. Kensington School of Art, he began to contribute to Punch in 1867. He joined the regular staff in 1871, and succeeded Sir John Tenniel as chief cartoonist in 1900. Sambourne died at Kensington, Aug. 3, 1910.

SAMBRE. River of France and Belgium. Rising in the dept. of Aisne, it flows N.E. through Nord into the Meuse at Namur in Belgium. Its length is 112 m. It is connected with the Oise and Schelde by canals.

BATTLE OF THE SAMBRE. British victory in the Great War. It opened Nov. 1, 1918, and involved the capture of the Hermann Stellung, one of the great German lines which ran along the Sambre and the Oise canal. The preliminary to the main battle was the capture of Valenciennes by an enveloping movement, so as to spare the town itself. The British encircled Le Quesnoy in the centre, and pressed far into the forest of Mormal.

On Nov. 6 the Canadians took Angre, crossing the Aunelle and Honnelle rivers; and early next day the Guards entered Bayai. In the night of Nov. 7-8 there were clear signs that the Germans were in general retreat. On Nov. 9 Maubeuge was captured by the Guards, and on Nov. 9 and 10 the advance continued. Fighting continued until about 3 minutes to 11, when the Armistice ended the war. In this battle the British advanced 25 m. and took 19,000 prisoners and 460 guns.

SAMOA OR NAVIGATORS' ISLANDS. Group of islands in the W. Pacific. They lie 130 m. N. of Tonga, and 400 to 500 m. N.E. of Fiji. By an agreement between Britain and Germany made in 1899 and ratified by the U.S.A. in 1900, Britain renounced all rights in favour of Germany in the case of Savaii, Upolu, Apolima, and Manono, and in respect of Tutuila and the remainder in favour of the U.S.A. As a consequence of the Great War the German islands became the territory of Western Samoa, administered by New Zealand under mandate. The total area is more than 1,250 sq. m., and the only good harbour is at Pago Pago. Copra, cacao, and fruit are the principal products. Apia, on Upolu, is the chief British town.



Samoa. Native warrior in typical headdress

SAMOS. Greek island in the Aegean Sea. It lies off the W. coast of Asia Minor about 40 m. S.W. of Smyrna, and has an area of about 180 sq. m. Colonised by the Ionians about 1000 B.C., Samos passed to the Persians in the 6th century, but regained its freedom after the victory of Mycale, 479. Rome took it in 84 B.C. The chief city was Samos, near which was the Heraeum, or temple of Hera. The modern capital is Vathy. The island was a centre of art and gave its name to the glazed earthenware known as Samian. Pop. 70,000. See Greece.

SAMOYEDE. Breed of dog. In common with other Arctic breeds it has a foxy head, small, erect ears, and a tail curled over the back. Although capable of drawing heavy weights, the dogs are on the small side, the males weighing about 50 lb., and the hitches about 10 lb. less.

The Samo-yeds, after whom the dogs are named, are a people of Altaian stock living in the extreme north of Europe and Asia.

SAMPAN. Light boat. It is about 15 ft. long, and is in common use in the Eastern inland and coastal waters. It is wholly or partly covered in and is sometimes used as a houseboat.

SAMPHIRE (*Crithmum maritimum*). Fleshy perennial herb of the order Umbelliferae. It is a native of the coasts of the Mediterranean, Black Sea, and N. Atlantic, growing on rocks above sea level, and common on rock's round Great Britain. It has a woody base and stout stem, which, like the leaves, is of a blue-green tint. The real outline of the leaves is wedge-shaped, but they are so broken up into slender, rounded leaflets that the latter look like leaves. The minute flowers are white, but the umhels in which they are clustered give the general effect of yellow. The leaves have a salt, spicy flavour, and are made into a pickle.

SAMPLER (late Lat. exemplarium, a copy). Piece of embroidery, usually on canvas or silk. Samplers, which in England date from the 17th century onwards, continued in fashion until well into the 19th century, and many interesting specimens are preserved.

SAMSON. Biblical character. A man of miraculous strength, he was a redoubtable foe of the Philistines until Delilah cut off his hair and he fell into the hands of his enemies, who put out his eyes. His strength having been restored to him in answer to prayer, he pulled away the supports of the building where the Philistines were feasting and with them was destroyed. Milton's poem, *Samson Agonistes*, deals with his unhappy fate.

SAMSON, CHARLES RUMNEY (b. 1883). British airman. Born in 1883, he entered the navy in 1898. In 1910 he became an airman, and was in command of the aeroplane and armoured car support of the R.N.A.S. in the autumn of 1914. In Jan., 1915, he dropped bombs on the German positions in Brussels, and in Feb. commanded the aeroplane attack on Zeebrugge and Ostend. Having served in Gallipoli and Egypt, he took command of the seaplane carrier *Ben My Chree* on the Syrian coast. In 1922 he was made an air commodore.



Samos. Specimen of Samian ware found among Roman remains at Manchester

SAMUEL. First prophet of Israel and the last of the judges. He was born at Ramah, in answer to the prayers of his mother Hannah, was dedicated to the service of God from birth, and was taken to Eli the priest to serve him as a boy attendant. The misconduct of Samuel's sons, who were expected to succeed to the judgeship, led to a popular demand for a king, and Saul was chosen. Samuel was often brought into conflict with him, and later he anointed the youth David, who afterwards took refuge with him from the king's anger. In his later days he seems to have conducted a school of the prophets, and he had a house of his own at Ramah, where he was buried.

SAMUEL, THE BOOKS OF. The O.T. First and Second Books of Samuel are so called in the Hebrew Bible because one of the chief characters in their story is the prophet Samuel. In the Septuagint (cod. Vat.) they are called the First and Second Books of Kingdoms, and in the Vulgate the First and Second Books of Kings (our 1 and 2 Kings being the Fourth and Fifth Books).

The contents of the books of Samuel fall into five sections: (1) Eli and Samuel, 1 Sam. 1-7; (2) Samuel and Saul, 1 Sam. 8-14; (3) Saul and David, 1 Sam. 15-31; (4) David, 2 Sam. 1-20; (5) an Appendix, 2 Sam. 20-24. The period covered is therefore from about 1070 or 1050 to 970 B.C. The only ancient source mentioned in the books is the Book of Jasher (2 Sam. 1, 18; cf. Josh. 10, 13). From this, David's elegy over Saul and Jonathan is said to have been taken.

SAMUEL, SIR HERBERT LOUIS (b. 1870). British politician. Born in Liverpool, Nov. 6, 1870, he entered the House of Commons in 1902 as M.P. for the Cleveland division. In 1905 he joined the Liberal Government as under-secretary to the home office, and in 1909 entered the Cabinet as chancellor of the duchy. From 1910 to 1914 he was postmaster-general, and in 1914 was transferred to the local government board as president. When the Coalition Government was formed in 1915 he reverted to his earlier post of postmaster-general, and in 1916 he was for a short time home secretary. From 1920 to 1925 he was high commissioner for Palestine, and in 1926 was chairman of the commission that inquired into the state of the coalmining industry. In 1929 he re-entered the House of Commons as M.P. for the Darwen division and acted as one of the Liberal leaders.

SAMURAI (Japanese). Name of a Japanese military class. In early

feudal times the term was applied to all who bore arms, but eventually it was restricted to the gentry, and roughly corresponded to the esquires of medieval times, as distinguished from the daimio or nobles. On the abolition of the feudal system in 1871 the samurai were forbidden to wear swords, and in 1878 the designation was changed to shizoku or gentry.

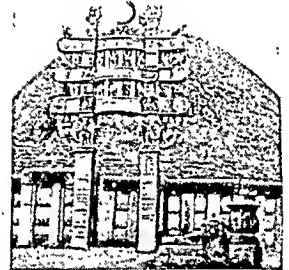


C. R. Samson, British naval airman Elliott & Fry

SAN. River of Poland. Rising in the Beskid Mts (Carpathians), it flows N.N.W., passing Przemysl (q.v.), thence N.W., and joins the Vistula 4 m. N.E. of Sandomir. Its length is about 260 m. It was the scene of much fighting during the Great War.

SAN ANTONIO. City of Texas, U.S.A. It stands on the San Antonio river, 212 m. by rly. W. of Houston. The San Fernando cathedral is notable. San Antonio is an invalid resort, with hot mineral wells. Its manufactures include iron and steel, textiles, and leather goods. It is the centre of a rich oil area, and is the seat of a large military establishment. In 1836 Fort Adams was stormed by Mexicans, the entire garrison of 188 being massacred. Pop. 250,000. See Texas.

SANCHI. Village of Bhopal, India. It is famous for its topes, or memorial mounds, perhaps the oldest buildings in the land. The largest of these, probably built by Asoka, has four gateways, on which are sculptures symbolising the life of Buddha. Long in a state of ruin these topes have been restored. See Asoka.



Sanchi. Imposing Buddhist shrine raised by Asoka, showing one of the sculptured stone gateways

SANCROFT, WILLIAM (1617-93). English prelate. Born at Fressingfield, Suffolk, Jan. 30, 1617, he was educated at Emmanuel College, Cambridge. After the Restoration he became master of Emmanuel College. Later he was successively dean of York and of S. Paul's. In Jan., 1678, he was consecrated archbishop of Canterbury, and he was one of the Seven Bishops who in May, 1688, drew up and signed the petition against the second declaration of indulgence. Refusing to recognize William III as the lawful sovereign, he was suspended in 1689 and deprived of the archbishopric in Feb., 1690. He died Nov. 24, 1693. See Nonjurors.

SANCTUARY (Lat. sanctus, sacred). In a religious sense, any consecrated place, or a place where sacred things are kept. Specifically, the term was applied to the Temple at Jerusalem, especially to that part of it, the sanctum sanctorum, or Holy of Holies, which none but the high priest might enter, and then only on the sacred Day of Atonement.

Christian churches, like pagan temples, at one time



Sampler in embroidery, dated 1794

afforded temporary sanctuary from the processes of the law, a privilege abolished in England in the 17th century, but still supposed to attach to Holyrood in Scotland. The Sanctuary at Westminster was a privileged precinct. That part of a church in which the altar is placed is known as the sanctuary.

SANCTUS, THE (Lat. holy). Hymn said or sung before the prayer of consecration at the Holy Communion service. The words Holy, Holy, Holy, etc., are based on Is. 6, 3; Ps. 118, 26; and Matt. 21, 9: but the closing words were altered in 1549 from Hosanna in the Highest to Glory be to Thee, O Lord most High. In the Roman Catholic rite, except in the pontifical chapel and during exposition of the Sacrament, a small bell, called the sacring bell is rung.

SAND. Loose, incoherent mass of small particles of various minerals, chiefly quartz, mica, and felspar. It is formed by the chemical and mechanical disintegration of rocks by weathering and other causes. Sands which contain the greatest amount of quartz are nearly white, and form the silver or glass sands of commerce. Green sands, which cover a large part of the bed of the ocean, contain glauconite. New sands are composed of sharp-edged particles, and coarse sands are known as grits. The older sands are smoother, consequent on the constant movements of the particles together. Sand is valuable in agriculture; as an ingredient in bricks; and as a polishing, cutting, cleaning, or etching agent.

SANDSTORM. A desert storm in which large quantities of sand are carried by the wind is called a sandstorm. They are of two kinds. The first, caused by a strong current of air blowing steadily in a constant direction, facilitates the building of sand dunes. The second is a cyclonic swirl of wind, which carries enormous quantities of sand, and frequently causes much destruction. The simoom is the sandstorm of the Sahara, Arabian, Sind, and Baluchistan deserts.

SAND CLOCK. Instrument used by the Greeks for measuring time. In one form, sand passed successively through the compartments of a drum-shaped cylinder acting as a pulley to a cord with a counter-weight, the rapidity of motion being determined by the quantity of the sand, or the bore of the orifice through which it escaped.

SAND. River of S. Africa. It rises in the Orange Free State and flows mainly E. until it joins the Vet. On its banks was signed the convention by which, in 1852, Great Britain granted independence to the emigrant farmers beyond the Vaal river. See South Africa.

SAND, GEORGE (1804-76). Pen-name of Armandine Lucile Aurore Dupin, French novelist. Born in Paris, July 5, 1804, her father was Maurice Dupin, an officer and a grandson of Marshal Saxe. She married a man named Dudevant in 1822 and had two children, but in 1831 she left him and settled in Paris, where her lovers included Alfred de Musset and Chopin.

Between 1831, when she entered the life of the Latin Quarter, and her death at Nohant, June 8, 1876, she wrote 120 volumes: novels, autobiography, letters, and plays. Her first novel, *Rose et Blanche*, 1831, was written in collaboration with Jules Sandeau and published as by Jules Sand. Among its successors are *Mauprat*, 1837; *Consuelo*, 1842-44; *La Mare au Diable*, 1846; *Lucrezia Floriani*, 1847; *La Petite Fadette* and *François le Champi*, 1848; *Elle et Lui*, 1859; *Mlle. la Quintinie*, 1863; *Her Histoire de ma Vie*, 1876, fills several volumes.

SANDAL (Persian, slipper). Light shoe consisting of a sole attached to the foot by means of straps or thongs. They were



Sandal. Type worn in ancient Rome

generally worn by the Greeks and Romans and other people of antiquity, and among the Romans especially were very elaborate and showed exquisite workmanship in every detail. Sandals were made of leather, wood, cork, wickerwork, and even gold and silver.

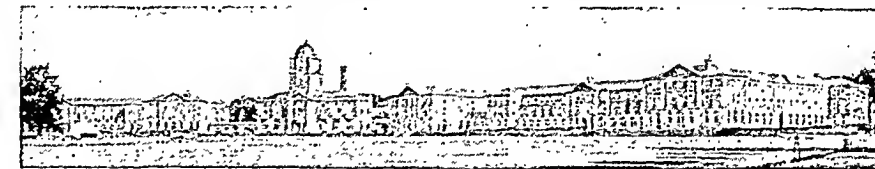
SANDAL MAGNA. Village of Yorkshire (W.R.). It is 3 m. from Wakefield, on the L.N.E. Rly. It is famous for the remains of its castle, built about 1300. This was a stronghold of Richard, duke of York, who from Sandal went to the battle of Wakefield. Pop. 2,905.

SANDALWOOD (*Santalum album*). Small evergreen tree of the order Santalaceae. A native of the East Indies, it has oval or lance-shaped leaves with pale undersides. The heart-wood when dry gives off a sweet perfume, and is esteemed for incense. Sandalwood oil, distilled from the wood, is a viscid pale yellow oil with strong aromatic odour, and is used in medicine.



Sandalwood. Leaves and flower sprays of evergreen tree

SANDARAC. Variety of resin found in N. Africa. A product of the sandarac tree (*Callitris quadrivalvis*), a conifer of Algeria, it is a pale yellow resin which becomes brittle on drying, and is soluble in turpentine. Known also as gum juniper, it is used in the manufacture of varnishes. Australian sandarac, from allied species, is called white pine resin.



Sandhurst. Buildings of the Royal Military College, where officers are trained for the British army

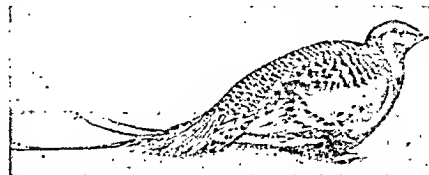
SANDBACH. Urban dist. and market town of Cheshire. It stands 4 m. N.E. of Crewe on the L.M.S. Rly. In the market place are two crosses assigned by some to the 7th century. The buildings include a fine old church, the town hall, and the grammar school. Market day, Thurs. Pop. 6,086.

SAND-BOX TREE OR **MONKEY'S DINNER** **BELL** (*Hura crepitans*). Evergreen tree of the order Euphorbiaceae. A native of tropical America, it grows to a height of about 40 ft. and has glossy, heart-shaped leaves. The small, inconspicuous, reddish flowers are succeeded by a large fruit, the size of an orange, but compressed above and below, with rounded ribs. When dry these ribs split with a loud report, to release the seeds. Unripe fruits, after the extraction of the seeds, were bound round with wire and used to hold the fine sand formerly employed in place of blotting-paper.

SANDBY, PAUL (1725-1809). British artist. Born at Nottingham, he was appointed draughtsman to the survey of the Scottish Highlands, and drawing master at Woolwich. He was an original member of the Academy, and one of the first to apply water colour to topographical drawings. Sandby greatly in-

fluenced the development of water colour art and introduced the aquatint process of engraving. He died in London, Nov. 9, 1809.

SANDERLING (*Calidris arenaria*). Shore bird, related to the plover. It is about 8 ins. long, and has brown and grey plumage on the upper parts, with white beneath, and a long and straight beak. It is a migratory bird, arriving in Great Britain in Aug., and leaving about April, but breeding farther N.



Sand Grouse. Specimen of Pallas's sand grouse From the Cambridge Natural History (Macmillan)

SANDGATE. Urban dist. and watering place of Kent. It is 2 m. W. of Folkestone, on the Southern Rly. The castle, built by Henry VIII, is now a museum. Near is Shorncliffe Camp. Pop. 2,777.

SAND GROUSE. Game bird of the family Pteroclididae, related to the pigeon. Occurring in Africa, in Central and S. Asia, and occasionally in Europe, the best known species is Pallas's sand grouse (*Syrhaptes paradoxus*). The plumage is buff, grey, and black, and is well adapted to make the bird inconspicuous in its native haunts. It feeds upon insects and vegetable matter. See illus. above.

SAND HOPPER (*Talitrus locusta*). Amphipod crustacean, which swarms in the sand between tide marks, and may usually be found under decaying animal matter. It is dirty white in colour, and burrows rapidly in the sand when alarmed. It serves a useful purpose as a scavenger of the shore.

SANDHURST. Village of Berkshire. It is 4½ m. S.S.E. of Wokingham, on the Southern Rly. Its chief interest is the Royal Military College. Here candidates for commissions in

the cavalry, infantry, and other arms are trained. They must be between 18 and 19½ years at the time of entrance, which is after a competitive examination. Cadets for the Indian army are also trained here.

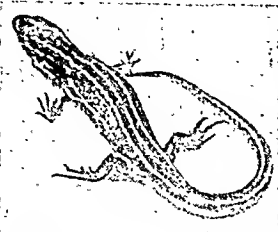
The title of Viscount Sandhurst was held by the family of Mansfield from 1871 to 1921. William Rose Mansfield, the 1st viscount (1819-76), having been chief of the staff during the Mutiny, was commander-in-chief in India 1865-70, and in Ireland 1870-75. His son, William, the 2nd viscount (1855-1921), was governor of Bombay 1895-1900, and lord chamberlain 1912-21. The title became extinct on his death, Nov. 2, 1921.

SAND LAUNCE OR **SAND EEL** (*Ammodytes*). Genus of small carnivorous fishes of the family Ophidiidae. They have long bodies, with a dorsal fin extending nearly the whole length of the back and a pointed head with protruding lower jaw. They frequent sandy shores and swim near the surface of the water. When the tide is out they bury themselves in the sand. They feed chiefly upon small sprats and the fry of other fish, and are themselves much in demand as bait for anglers. Great Britain has two species.



George Sand, French novelist After A. Charpentier

SAND LIZARD (*Lacerta agilis*). British lizard. The average size of the male is $7\frac{1}{2}$ ins.; the female is a little larger. The male is a pronounced green colour, the female brown and grey, and they affect sandy districts. The eggs are deposited in the sand, and are hatched out by the heat of the sun. See Lizard.



Sand Lizard. Small reptile that lives in sandy districts
W. S. Berridge, F.Z.S.

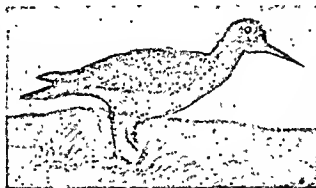
Alternative name of the West Indian republic and also of its capital, usually known as Santo Domingo (q.v.).

SANDOW, EUGEN (1867-1925). Wrestler and physical culturist. Born at Königsberg, April 2, 1867, he was educated at Göttingen, and acquired a reputation as an amateur gymnast and wrestler. Proceeding to Brussels, he toured in Holland before coming to England to secure an engagement at the Crystal Palace. His crowning achievement as a wrestler, however, was his defeat of his former adversary, the Italian Sali, and two others, who were permitted to attack him simultaneously. On Jan 28, 1891, he defeated Hercules in a weight-lifting contest, and was awarded the world's championship belt. In 1897 he wrote *Strength and How to Obtain It*, and in 1898 founded *Physical Culture*, a periodical publication. Sandow died Oct. 14, 1925.

SANDOWN. Urban dist. and watering place of the Isle of Wight. It stands on Sandown Bay, an opening of the S.E. coast of the island, 6 m. from Ryde, on the Southern Rly. It has fine sands, a pier, good bathing, and golf links. Pop. 7,664.

SANDOWN PARK. Racecourse in Surrey. It is 15 m. S.W. of London, near Esher station on the Southern Rly. The July meeting is one of the most popular, the principal race being the Eclipse Stakes, run over a distance of $1\frac{1}{4}$ m.

SANDPIPER. Group of migratory birds related to the plover. The common sandpiper (*Totanus hypoleucos*) is not uncommon about streams between April and Sept., especially in the wilder parts of Scotland. It nests in hollows beside streams. The purple sandpiper (*T. striata*) is found about the coasts of Great Britain during the autumn and winter, and has blackish upper parts with purple reflections. The curlew sandpiper (*T. subarquata*) has a curved beak like a curlew, and is found in the migrating season on the E. coast of Great Britain. The wood sandpiper (*T. glareola*), which closely resembles the green sandpiper, is found in autumn on the E. and S. coasts.



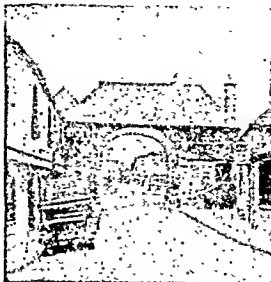
Sandpiper. Specimen of common sandpiper or summer snipe
W. S. Berridge, F.Z.S.

SANDRINGHAM. Royal residence in Norfolk. It is 6 m. N.E. of King's Lynn and 2 m. E. of Wolferton station on the L.N.E. Rly. Sandringham House was built by Edward VII when prince of Wales. Of red brick in the Elizabethan style, it stands in a picturesque park. York Cottage is a secondary residence.

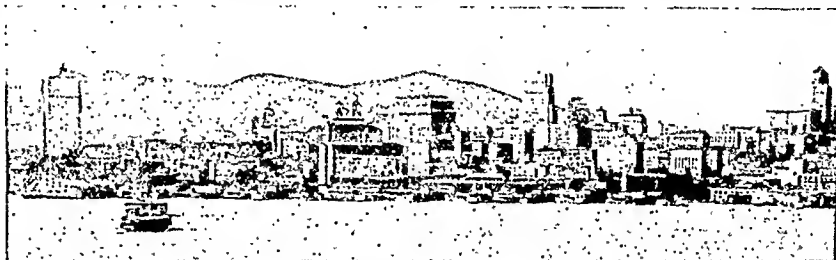
Sandringham, in Victoria, Australia, 11 m. by rly. S. of Melbourne on the shores of Port Phillip, is a residential suburb of the capital.

SANDWICH. Borough and market town of Kent, also one of the Cinque Ports. On the right bank of the Stour, 2 m. from the sea and

13 from Dover, it is on the Southern Rly. Among the chief buildings are the guildhall, S. Clement's church, with Norman tower, S. Peter's church, S. Mary's church, S. Bartholomew's Hospital, with a beautiful Early English chapel, and S. Thomas's Hospital. Of the town's fortifications, Fisher's Gate and the Barbican remain. The grammar school is an old foundation. There are fine golf links. Sandwich was one of the chief English ports, but it decayed owing to the gradual closing of the channel. Market day, alternate Monday. Pop. 3,161.



Sandwich, Kent. Barbican or toll gate of the historic town



San Francisco. The oldest seaport on the N. Pacific coast of America, seen from Goat Island in the bay

SANDWICH, EDWARD MONTAGU, 1ST EARL OF (1625-72). English sailor. Born July 27, 1625, he fought for the Parliament at Marston Moor and Naseby. Created earl of Sandwich in 1660, he distinguished himself in the Dutch war of 1664-65, and was ambassador to Spain, 1666-68. Returning to take part in the second Dutch war, he was killed in his victory of Southwold Bay, May 28, 1672.

John Montagu, the 4th earl, was born Nov. 3, 1718. From 1748-51 he was first lord of the admiralty, and from 1763-65 was a principal secretary of state. Having been postmaster-general, he was again secretary of state, 1770-71, and first lord of the admiralty, 1771-82. An associate of Wilkes, and a member of the hell-fire club, he won from the populace, when he took part in prosecuting Wilkes, the name of *Jemmy Twitcher*. He died April 30, 1792. This earl gave his name to the Sandwich Islands and also to the article of food. The present earl is his descendant. His eldest son is called Viscount Hinchinbrooke.

Sandwich Islands. Alternative name for the Hawaiian Islands. See Hawaii.



Sandringham House, Norfolk. Country residence of the King and Queen

SANDWORT (*Arenaria*). Genus of annual and perennial herbs of the order Caryophyllaceae, natives of temperate and cold regions. They have slender, jointed stems, swollen at the nodes, where the pairs of broad or narrow stalkless leaves arise. The flowers are small and of regular form, in loose, forking clusters, mostly white—a few rosy or purple.

SANDY. Village of Bedfordshire. It is 7 m. E. of Bedford, on the L.N.E. Rly. Evidences of Roman occupation have been excavated. Pop. 3,409.

SANDY HOOK. Sandy peninsula of New Jersey, U.S.A. Partly enclosing New York Lower Bay, it has a lighthouse. The America Cup (q.v.) course lies off Sandy Hook.

SAN FRANCISCO. City of California, U.S.A. It stands on San Francisco Bay, which has access to the ocean through a strait known as the Golden Gate. The city is built on the slope of a semicircle of hills. Below the twin peaks of Las Pajas stands the Mission Dolores, a relic of the old Spanish days. Market Street is the main business thorough-

fare. The shopping district extends into Grant Avenue and Post Street. The city hall, the municipal centre, and the post office are just off Market Street. The U.S. Branch Mint is a massive building of classical design. Chinatown is near Noh Hill. In Pacific Street is the "Barbary Coast," the region of dancé halls, saloons, and wild amusement, frequented by sailors. The Presidio is a military post. Golden Gate Park runs over the heights to the Pacific, and leads to Sutra Heights, overlooking the Seal Rocks and their sea-lions.

San Francisco is the seat of the university of California (at Berkeley) and Leland Stanford Junior University (near Palo Alto). At the Union Iron Works many warships have been built. There is a large shipping trade. The earthquake of 1906 did enormous damage, but the city was greatly improved by replacing the old wooden houses with brick or concrete structures. Pop. 698,963. See Earthquake.

SANGALLO. Florentine family of architects. Giuliano (d. 1516) was employed by Lorenzo the Magnificent to design various buildings, including a convent by the gate of San Gallo, Florence, from which he took his name. Settling in Rome, he became one of the founders of the Roman school of architecture. He returned to Florence to build fortresses for defence against Pisa, and in 1514 was made architect to S. Peter's in conjunction with Raphael.

SANGER, GEORGE (1827-1911). Circus proprietor and showman, who called himself Lord George Sanger. He was born at Newbury, Dec. 23, 1827, and later took over the circus which his father, John Sanger, had started in 1821. In 1871 Sanger purchased Astley's amphitheatre and menagerie, and about the same time leased the Agricultural Hall, Islington. Besides these, he ran circuses at Birmingham, Liverpool, Glasgow, Dundee, Aberdeen, Bath, Bristol, and Plymouth. In 1905 he disposed of his circus property. He was shot dead by an employee, Nov. 28, 1911.

SANHEDRIN (Gr. synedrion, council). Supreme council or senate of the Jews. Established apparently shortly before the time of Antiochus the Great, its exact origin is unknown. It consisted of persons of the upper classes, seventy-one in number, who met under the presidency of the high priest. It acted as the supreme court of justice, with jurisdiction over Jews in all countries, and was allowed considerable freedom of action by both Greeks and Romans.

SANICLE (*Sanicula europaea*). Perennial herb of the order Umbelliferae. A native of Europe, Asia, and Africa, it has a stout, creeping root-stock, and long-stalked, glossy leaves, cut into five wedge-shaped lobes. The minute white or pink flowers are clustered in compound umbels about $\frac{1}{2}$ in. across. The leaves have a bitter taste, and were held in high repute for their supposed healing virtues.

SANITATION. Branch of hygiene. Sanitation implies the adoption of those sanitary measures which conduce to preserve the health of the community. Strictly the term is synonymous with hygiene; but it has grown to be regarded as limited in its application to the material provisions of health in connexion with the home.

The local sanitary authorities are charged with the duty of securing the provision and maintenance of proper sanitary conditions. The public health legislation which they administer enables them to make public sanitary provisions and services—such as a public water supply; the collection, removal, and disposal of household refuse; public sewers and arrangements for the disposal of sewage. Their local by-laws lay down the permissible mode of construction, including the sanitation of all new buildings; and it is the duty of local sanitary authorities to see that nuisances arising from defective sanitation are promptly abated. See Hygiene; Public Health.

SANJAK OR **SANYAT** (Turkish, standard). Name given to an administrative subdivision of Turkey. The empire was divided into vilayets or governments, each under a vali or governor-general. Each vilayet was subdivided into sanjaks, over which supervision was exercised by inferior authorities responsible to the vali. The name is retained in some districts formerly under Turkish rule, e.g. the sanjak of Novi Pazar in Yugoslavia.



Ira D. Sankey
American evangelist

SANKEY, IRA DAVIN (1840-1908). American evangelist. Born at Edinburgh, Penn., Aug. 28, 1840, he devoted himself to mission work and became famous through his association with D. L. Moody, which began in 1870. The pair conducted revival services all over the U.S.A., and met also with great success in their visits to Great Britain in 1873-75, 1881-84, and 1891-92. Responsible for the musical part of the services, Sankey used his fine voice with great effect. He was the compiler of the popular Sacred Songs and Solos, 1873. In 1903 he became blind, and he died Aug. 14, 1908. See Moody, D. L.

SANKEY, JOHN SANKEY, 1ST BARON (b. 1866). British lawyer. Born Oct. 26, 1866, the son of Thomas Sankey, he was educated at Lancing and Jesus College, Oxford. Having been called to the bar in 1892, in 1909 he was made chancellor of the diocese of Llandaff. In 1914 he became a judge of the high court. On account of his acquaintance with the coal mining industry, he was chosen in 1919 to preside over the commission that inquired into the wages and conditions of labour in the mines. Sankey was knighted in 1914. In

1928 he was made a lord justice of appeal, and in 1929 he joined the labour ministry as lord chancellor and was made a peer.

SAN MARINO. European republic. Surrounded by Italian territory, it lies 12 m. S.W. of Rimini, between the provinces of



San Marino. Citadel of the mountain republic in the heart of Italy

Forlì and Pesaro e Urbino, claims to be the oldest state in Europe, and is one of the smallest states in the world. Authority rests in the great council of 60 popularly elected members, a third of whom are renewable every three years, and from whom two selected councillors act as regents for periods of six months. The frontier is 24 m. long, and encloses an area of 38 sq. m. The state is hilly, embracing spurs of the Apennines, one of which is the capital, San Marino. In 1631 the pope formally acknowledged its independence, which was recognized by Italy in 1862. Pop. 13,013.

SAN MARTIN, JOSÉ DE (1778-1850). Spanish soldier. Born in Spanish America, Feb. 25, 1778, he was educated in Spain and served in the army. In 1812 he went to America and led the army which, after several victories, freed Chile from Spanish rule. In 1820 he entered Lima and was chosen protector of Peru, but in 1822 he gave way to Bolívar. San Martín returned to Europe, and died at Boulogne, Aug. 17, 1850.

SANNA-I-YAT. Village of Iraq (Mesopotamia). It stands on the river Tigris some 12 m. from Kut, and came into prominence during the Great War. When Townshend, in Dec., 1915, was besieged in Kut, the Turks converted Sanna-i-yat into an almost impregnable fortress. The British relief force made a number of efforts to storm it and on 'failing,' withdrew their line. In Dec., 1916, the British occupied an entrenched position opposite that of the Turks at Sanna-i-yat, and the village was in British hands on Feb. 23, 1917. See Kut.

SANQUHAR.

Burgh of Dumfriesshire. It stands on the Nith, 26 m. from Dumfries, with a station on the L.M.S. Rly. In the vicinity are coal mines, and the town is an agricultural centre. There are ruins of a castle. A monument marks the site of the town cross, to which were affixed in 1680 and 1685, by the Covenanters Richard Cameron and James Renwick, the Sanquhar Declarations. Pop. 1,700.



Lord Sankey,
British politician
Russell

SAN REMO. City of Italy. It is 26 m. E.N.E. of Nice on the Riviera and is a resort of sufferers from pulmonary troubles.

The old city, crowning a steep hill, with narrow crooked streets and badly built houses, is in contrast with the new city along the coast. It was the scene of a conference of the Allied Powers in April, 1920. Pop. 24,739.

SAN SALVADOR. Capital of the republic of Salvador, Central America. The dist. is subject to earthquakes, and the buildings are low, most of them, including the cathedral, being of wood. Indigo and tobacco are the chief agricultural products. Pop. 89,066.

There is a town in the N. of Angola called San Salvador. In the 15th century it was an important Portuguese settlement, and there are remains of ecclesiastical establishments.

SANSCULOTTES (Fr. without breeches). Term applied by the court to the common people in the French Revolution. According to Littré, the Sansculottes were so called because they gave up the knee-breeches in fashion previous to the Revolution, and wore trousers or pantaloons. The excesses of the Revolutionaries gave a sinister association to the word, which is occasionally used of persons of advanced political ideas.

SAN SEBASTIAN. Seaport and watering place of Spain. It stands on the Bay of Biscay, 11 m. by rly. W. of Irun, on the French frontier. It was chosen as a summer residence of the court in 1886, and speedily became the most fashionable seaside resort in Spain. Long a formidable fortress, San Sebastian has often been besieged, notably in 1719, 1794, and 1808, when it was taken by the French; in 1813, when Wellington drove out the French and utterly destroyed the town; and in 1836, by the Carlists. Pop. 76,016.

Other but smaller San Sebastians are a town on the island of Gomera in the Canaries, and a town in Porto Rico.

SANSKRIT. Old sacred language of the Hindus, in which all their literature is written. It is a member of the Indo-European family. The name means "carefully made," as opposed to Prakrit (common, natural). Its most ancient form is to be found in the Vedas, certain parts of which probably go back to about 2000 B.C.

The Sanskrit of the Vedas may to some extent be considered a popular dialect, differing from classical Sanskrit as the Greek of Homer from classical Greek. About the 4th century B.C. the famous grammarian Pāṇini stereotyped the rules of grammar and syntax, and from that time Sanskrit became to all intents and purposes a dead

language. Sanskrit is usually written and printed in the Devanagari character, a development of the Semitic alphabet. In the matter of grammatical forms it is richer than Greek and Latin. It has eight cases, including an instrumental and a locative and the verbal formations are extremely varied.

Like the language, Sanskrit literature may be divided into two main periods, the Vedic and the classical, beginning in the 5th or 6th century. Veda (knowledge) is the name given to four collections of hymns: Rig-Veda, Yajur-Veda, Sama-Veda, Atharva-Veda, the Veda of verses, of sacrificial formulae, of chants of the priestly family of the Atharvas.

SANSOVINO, ANDREA, OR CONTUCCI (1460-1529). Italian sculptor and architect. Born at Monte San Savino, Tuscany, he studied

Vowels	
अ, आ, इ, ई, उ, ऊ, ए, ऐ, ओ, औ	
Simple Consonants	
Gutturals, क, ख, ग, घ, ङ	
Palatals, च, छ, ज, झ, ञ	
Cerebrals, ट, ठ, ड, ढ, ण	
Dentals, त, थ, द, ध, न	
Labials, प, फ, ब, भ, म	
Semivowels, य, र, ल, व	
Sibilants, श, ष, स, ह	
Numerals	
० १ २ ३ ४ ५ ६ ७ ८ ९ १० ११ १२ १३ १४ १५ १६ १७ १८ १९ २० २१ २२ २३ २४ २५ २६ २७ २८ २९ ३० ३१ ३२ ३३ ३४ ३५ ३६ ३७ ३८ ३९ ४० ४१ ४२ ४३ ४४ ४५ ४६ ४७ ४८ ४९ ५० ५१ ५२ ५३ ५४ ५५ ५६ ५७ ५८ ५९ ६० ६१ ६२ ६३ ६४ ६५ ६६ ६७ ६८ ६९ ७० ७१ ७२ ७३ ७४ ७५ ७६ ७७ ७८ ७९ ८० ८१ ८२ ८३ ८४ ८५ ८६ ८७ ८८ ८९ ९० ९१ ९२ ९३ ९४ ९५ ९६ ९७ ९८ ९९ १००	
Sanskrit. Characters from Monier Williams's Sanskrit Grammar	

By courtesy of the Oxford University Press

under Antonio Pollaiuolo. After a visit to Portugal he returned to Florence in 1490, when he was employed in the decoration of S. Spirito, and, in 1500, executed the statues of Christ and S. John Baptist over the east door of the baptistery. His chief work, however, was the Sforza monument in S. Maria del Popolo, Rome, 1506.

SANT, JAMES (1820-1916). British artist. Born at Croydon, April 23, 1820, he studied at the Royal Academy schools, and became a regular exhibitor of subject pictures at the Royal Academy exhibitions, also making a reputation as a portrait painter. Elected A.R.A. in 1861, he became R.A. in 1869. His picture, *The Schoolmaster's Daughter*, is in the diploma gallery of the R.A. One of Sant's most popular pictures, widely circulated in reproduction, was *The Soul's Awakening*, exhibited in 1888. He died July 12, 1916.

SANTA BARBARA. City of California, U.S.A. On the Pacific coast, it is 105 m. by rly. W.N.W. of Los Angeles. The Franciscan Mission dates from 1786. Pop. 22,435.

SANTA CLAUS. Corruption of Saint Nicholas, the patron saint of children. Under this name he is especially associated with the giving of presents about the Christmas season. The Dutch custom of hanging up a stocking in which Santa Claus can put his gifts on Christmas Eve has become widespread among children. See Nicholas.

SANTA CRUZ. Group of islands in the Pacific Ocean, included in the British Protectorate of the Solomon Islands. Nitendi, Tupua, and Vanikoro are the largest islands of the group which lies S.E. of the Solomons and N. of the New Hebrides. The coral islets known as the Swallow Islands are included. Nitendi, sometimes called Santa Cruz, has an area of 212 sq. m. Tinakula is an active volcano.

SANTA CRUZ or St. Croix. Island of the Lesser Antilles, belonging to the U.S.A. It is in the Caribbean Sea, 60 m. E.S.E. of Porto Rico, and has an area, including some islets, of 84 sq. m. The capital is Christiansted. The island was successively held by the Spaniards, English, and Dutch. In 1651 it was bought for the Knights of Malta, who sold it in 1664 to the French West India Co., by whom it was sold to Denmark in 1733. In 1801 it was taken by the British, who soon restored it. Retaken by the British in 1807, it was again restored in 1814 to the Danes, who sold it to the U.S.A. in 1916. Pop. 15,500.

SANTA CRUZ. Seaport and coaling station on the island of Tenerife. It is the capital of the island and also of the Canary Isles. The houses, built in the Spanish style, have flat roofs and central patios or courtyards. The exports include silk, sugar, cochineal, tomatoes, bananas, potatoes, wine, and brandy. It was twice bombarded by British fleets: under Blake, April 20, 1657, and Nelson, July 24, 1797. Nelson lost his arm in this action. Pop. 56,309.

SANTA FÉ (Span. Holy Faith). City of central Argentina, capital of the province of the same name. It stands on the Rio Salado, 95 m. N. of Rosario (q.v.), and its port is Colastiné on the Paraná, 7 m. away. It has a cathedral, university, and schools. The chief industry is shipbuilding, and the principal exports are timber, cattle, and wool. Pop. 59,574.

Another Santa Fé is the capital of the state of New Mexico. It stands on the Santa Fé river, 50 m. W. of Las Vegas. Pop. 7,200.

SANTANDER. Seaport and watering place of Spain. It stands on a sheltered bay, 316 m. by rly. N. of Madrid. There is an old town and a new town, the latter laid out with large open plazas and boulevards. The 13th century cathedral has been spoilt by restoration. It has a fine harbour. The exports

include flour, wine, metals, and foodstuffs. There are manufactures of paper, flour, beer, cotton, and iron goods. Pop. 82,239.

SANTA SCALA (Ital. holy steps). Staircase belonging to the Lateran palace in Rome. It consists of a flight of 28 marble steps, said to have been ascended by Christ when he was in the house of Pilate at Jerusalem. They are protected with wood and are ascended only on the knees. An adjacent flight is provided for the descent.

SANTIAGO. Capital of Chile. It is 68 m. E.S.E. of Valparaiso, and is one of the best built and most attractive cities of Latin America. The Plaza de Armas in the centre of the town is the heart of its life, and here on the W. stands the cathedral, on the N. the post office buildings, while there are arched commercial structures on the E. and S. Congress building, in the Callo



Compañía, is an imposing structure. To the S. stands the Plaza de la Moneda, the whole of one side being occupied by the Palacio de la Moneda, with the residence of the president. Grouped in this part of the city are most of the other government buildings.

One of the most notable features of the city is the magnificent Avenida de las Delicias, also known as the Alameda, a spacious boulevard bordered with oak, elm, and acacia trees. The hill (Cerro) of Santa Lucia, where the Spanish governor of Chile, Pedro de Valdivia, in 1541 made his camp and fortified himself against the Araucanian Indians at the founding of the city, has been turned into a public resort, and there are numerous other public parks. The university dates from 1743. Among the many churches the most notable, other than the cathedral, is that of La Merced. Pop. 507,296.

SANTIAGO. City of Cuba. It lies on the bay of Santiago, 540 m. S.E. of Havana. Ironfoundry and the manufacture of machine shop products and tobacco are carried on, and the port has a large trade. It was the capital of Cuba from 1515 to 1556. Pop. 62,083.

SANTIAGO. City of Spain. It is 26 m. by rly. N.N.E. of its port, Carril, and 33 m. S.S.W. of Corunna. The cathedral, one of the most striking examples of early Romanesque architecture in the peninsula, contains the shrine of the patron saint of Spain, James the Greater or Sant' Iago. The cloisters are regarded as the finest in Spain. Santiago possesses numerous churches, chapels, and religious fraternities, with hospitals, hospices, etc., for pilgrims. The university was founded in 1504. The Hospital Real was founded by Ferdinand and Isabella for pilgrims, while the convents of San Martin and San Francisco are worthy of note. The city is the headquarters of the Order of Knights of Santiago.

SANTLEY, SIR CHARLES (1834-1922). British singer. Born at Liverpool, Feb. 28, 1834, he studied at Milan, and later in London under Garcia, and made a speedy success as a baritone oratorio singer. He first appeared in grand opera at Covent Garden, 1859, and from 1875 toured extensively with the Carl Rosa Opera Company. He sang in the U.S.A. in 1871 and 1891, and in Australia, 1890. Knighted in 1907, he published *The Art of Singing*, 1908, and *Reminiscences*, 1909, and composed some sacred music, and several songs under the pseudonym of Ralph Betterton. He died Sept. 22, 1922.



Sir Charles Santley.
British singer

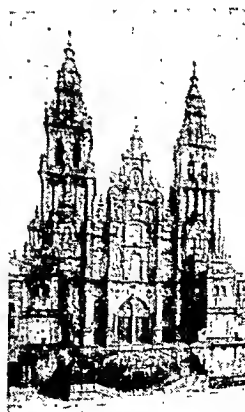
SANTO DOMINGO. Republic of the W. Indies. It occupies the E. coast portion (about two-thirds) of the island of Haiti (q.v.). Its area is estimated at 19,332 sq. m. The chief industry is agriculture, and exports include sugar, tobacco, cocoa, and coffee. There are large forested tracts throughout the country. Cattle rearing is extensively carried on. The capital is Santo Domingo (or San Domingo), and the chief port is Puerto Plata.

The Dominican Republic was established in 1844. A proposal to annex it in 1869 was rejected by the U.S. senate. After a period of disorder the United States intervened in 1916 and placed naval officers in charge of the departments of state. In 1922 a provisional government was set up, and in 1924 Horacio Vasquez was elected president. The U.S.A. forces withdrew after the signing of a new convention, which provided the country with a loan secured on the customs, which remained under American control. A revised constitution was passed in 1929. Pop. 897,405.

SANTO DOMINGO. Capital of the republic of Santo Domingo. It stands at the mouth of the river Ozama, on the S. coast. The principal buildings are the cathedral, arsenal, government palace, and former Jesuit college. A large trade is carried on, chiefly in sugar and coffee. The bones of Columbus were brought here about 1542, and remained in the cathedral until 1795. In Sept., 1930, much destruction and loss of life resulted from a hurricane. Pop. 30,957.

SANTOS. Seaport of Brazil. It is on the Atlantic seaboard, 200 m. S.W. of Rio de Janeiro. A great coffee port, it owes its importance almost entirely to the exigencies of the coffee planters of São Paulo. Hides, cacao, tobacco, frozen meat, and bananas are also exported. Pop. 101,000.

SANTOS-DUMONT, ALBERTO (b. 1873). Brazilian airman. Born at São Paulo, Brazil, July 20, 1873,



Santiago, Spain. Romanesque cathedral of S. James

he studied aeronautics, made his first balloon voyage in 1897, and devoted his attention to the problem of the navigable balloon. Between 1898 and 1906 he constructed numerous small airships, from which the non-rigid airship developed. He won the Deutsch prize of £10,000 at Paris in 1901. During the next few years he turned his energies to inventing

heavier-than-air machines, and on Aug. 22, 1906, he made the first hops from the ground with a power-driven machine, and on Oct. 23 achieved a flight of 800 ft. He published *My Airships: a Story of My Life*, 1904. See Aeronautics.

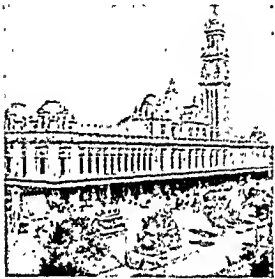
SAÔNE. River of France. It rises in the Vosges, and flows S. into the Rhône at Lyons. It traverses the plains of Burgundy, and is connected with the Rhine by the Rhine and Rhône canal, and with the Loire by the Canal du Centre.

A department of France is called Saône et Loire. In the E. of the country, its area is 3,330 sq. m. Cereal crops are largely grown. Cattle, horses, sheep, and pigs are reared. Mâcon is the chief town. In the Middle Ages the department was included in Burgundy. Pop. 549,240.

SÃO PAULO. City of Brazil. It lies 45 m. inland from its port, Santos. The new municipal theatre is one of the finest buildings of its type in the world. The magnificent Ypiranga palace was built as a memorial of the declaration of independence of 1822. The marketing and distribution of coffee is the chief industry, followed by meat packing. The city originally



A. Santos-Dumont,
Brazilian inventor



São Paulo. Finely built railway station of this Brazilian city

nated in 1554 as a Jesuit mission station. Pop. 625,000. See Brazil.

SAP. Juices of plants. The ascending sap consists of water in which mineral salts are dissolved, collected by the root hairs from the soil, and conducted through the roots and the wood cells and vessels of the stem and leaf stalks to the leaves. Here it is vaporized by contact with the air circulating around the cells of the leaf, and passes out through the stomata. The mineral matter is retained and combined with carbon extracted from the air, and from the mixture sugar, amides, etc., are formed. These are carried away in the descending sap through the phloem, or soft cellular tissue on the outside of the fibrovascular bundles, to those parts of the plant where they are required as cell-forming materials for present or future purposes. See Plant.

SAPODILLA PLUM or **BULLY-TREE** (Aehras sapota). Evergreen tree of the natural order Sapotaceae. A native of Central America and W. Indies, it has wide-spreading branches, the bark is astringent, and the juice milky. It has elliptic-oblong leaves, and large, whitish, urn-shaped flowers. The fruit is apple-shaped, luscious, and edible.

SAPONIN. Glucoside, which occurs in several plants, characterised by its property of giving a froth when shaken with water. The chief sources are soapwort, soap bark, and senega root. Saponin is a white powder which causes sneezing when distributed in the air. It is used for giving a froth to aerated and other beverages, and for washing where soap would injure.

SAPPAN TREE (Caesalpinia sappan). East Indian tree of the order Leguminosae. It grows to a height of 40 ft., has prickly branches, with leaves divided into 10 or 12 pairs of oval leaflets, and clustered sprays of yellow flowers. The dull red wood, known

as Brazil wood, hnkum wood or sappan wood, is used as a dyestuff. An orange dye is obtained from the roots.

SAPPER. Originally a soldier employed in cutting saps and also in building fortifications. From 1813 to 1856 there was a corps in the British army called the royal sappers and miners, but in 1856 this was merged in the corps of royal engineers. The word sapper is still used for privates in this branch of the service. The Indian army retains the term, its engineer units being known as sappers and miners. See Engineers, Royal.

SAPPHIRE. Blue variety of the mineral corundum. It has the same composition as the ruby, Al_2O_3 , and is found usually in the same localities. Slightly harder than the ruby, dichroic, the most valuable varieties are of a pure cornflower blue in colour. Sapphires are often spotted with yellow and white, and the blue colour disappears if the gem is heated. White topaz is sometimes called water sapphire, while yellow sapphire is a yellow variety of corundum. Colourless corundum is known as white sapphire or leucosapphire. The most valuable sapphires are found in Siam with the ruby, and Ceylon has long been known for the gem. See Corundum; Gem.

SAPPHO. In astronomy, one of the minor planets. It was discovered in 1864, and revolves round the sun at a mean distance of 275,000,000 m. Together with Iris and Victoria, it was used by Sir D. Gill to establish a measurement of the sun's distance.

SAPPHO (c. 580 B.C.). Greek poetess. She lived at Mitylenē, and with her contemporary Alcaeus was one of the greatest of the Aeolic group of poets and the leader of a literary society of women. Of noble birth, she is said to have been banished for political reasons and to have gone to Sicily. The story that unrequited love for Phaon led her to leap from the Leucadian rocks is fictitious.

Of her numerous poems, apart from many small fragments, only two are extant, including the magnificent ode to Aphrodite. These show that her genius was extraordinary, and she has been called the greatest woman poet. Her work, almost entirely erotic, is marked by depth of passion and exquisite grace. She is known to have employed at least 50 metres.

SAPROPHYTES. Plants which, lacking chlorophyll, are unable to manufacture carbohydrates in their leaves from the carbonic-acid gas of the atmosphere. Saprophytes live upon the decaying remains of animals or plants. Most of them get this from the humus of the soil. In saprophytes the leaves are lacking, or are reduced to small scales. Flowering plants that are saprophytes obtain their

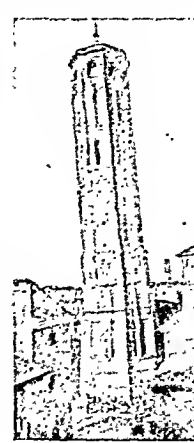


Sapodilla Plum. Foliage and flower; inset, fruit.

food through the intervention of a fungus, called Mycorrhiza, attached to their rootlets. Most of the fungi that grow in the ground or on dead trees are saprophytes, as distinguished from those that attack living plants. See Botany; Parasite; Plant.

SARACEN. Name formerly applied to Mahomedans. The name was given in classic times to the Arab tribes of Syria and the adjacent deserts, and thence came to include all Arabs. In the Middle Ages the term Saracen was applied to Mahomedans generally, but especially to those who fought the Crusaders in Palestine and Spain. See Arabia; Crusades; Mahomedanism; Saladin.

SÁRAGOSSA (Sp. Zaragoza). City of Spain. It stands on the Ebro, 212 m. by rly. N.E. of Madrid. The former capital of



Saragossa. 1. The 16th century leaning clock tower. 2. Bridge over the Ebro and Cathedral del Pilar

Spanish national heroine, Augustina (d. 1857) was so called for her courage during the defence of Saragossa against the French, 1808-9. Her deeds are described in Byron's *Childe Harold*. Pop. 155,520.

SARAH or **SARA.** Biblical character. A Hebrew word, meaning princess, it was the name of Abraham's wife, and was long very popular among both Jews and Christians.

SARASATE, PABLO MARTÍN MELITÓN (1844-1908). Spanish violinist. Born at Pampeluna, March 10, 1844, he early showed signs of great technical ability, and studied at the Paris Conservatoire from 1856-59. He speedily made a European reputation as a violin virtuoso, strengthened after he ceased to strive after mere brilliance. He first played in London at the Crystal Palace, 1861, visited the U.S.A. in 1870, and toured in most parts of the world.



P. M. M. Sarasate,
Spanish violinist

He died at Biarritz, Sept. 21, 1908.

SARATOGA SPRINGS. Watering place of New York. It is 38 m. from Albany and has mineral springs, the waters of which are good for rheumatism and dyspepsia. It is reached by several railways and situated amid beautiful scenery. Industries include paper-making machinery, silk goods, etc. Pop. 13,880.

Near here two battles were fought in the American War of Independence. One, on Sept. 19, 1777, was indecisive, both sides losing heavily. The other, on Oct. 7, ended in the defeat of the British force under Sir John Burgoyne, which surrendered a few days later. It was agreed that the English soldiers should be allowed to leave America, on promising not to serve again, but Congress refused to agree to these terms.

SARAWAK. British protected state in the N.W. of Borneo. It is bounded N.E. by Brunei, and elsewhere by Dutch Borneo and the S. China Sea. The est. area is about 50,000 sq. m. Important towns are Kuching, the capital, and Sibü. The chief agricultural products are coffee, pepper, sago, rubber,

camphor, rattans, and tapioca. Coal and petroleum are found. There are large exports of timber, mostly to Hong Kong. Sarawak is administered by a raja, Sir Charles Vyner Brooke. Portions of Sarawak were ceded to Sir James Brooke (q.v.) in 1842. Pop. about 600,000. See Borneo.

SARCEY, FRANCISQUE (1827-99). French writer and critic. Born Oct. 8, 1827, he became a teacher. He published critical articles in various journals, and also several novels, including *Le Nouveau Seigneur de Village*, 1862, and acted as dramatic critic for *L'Opinion Nationale*, 1859-67. His fame rested chiefly, however, on his regular dramatic criticism which appeared in *Le Temps* from 1867 until his death on May 16, 1899.

SARCOMA (Gr. sarx, flesh). Malignant tumour which differs from cancer in being formed from connective tissue, and in containing more fibrous tissue. Sarcomata may originate in the skin or subcutaneous tissues, the periosteum which invests bone, the deeper parts of bone, the breast, testicle, or any other organ of the body which contains connective tissue. The tumour may occur at any age, but is more common below the age of 40, while cancer tends to occur after that age.

A sarcoma as it extends invades adjacent tissues, and the growing tumour may come to press upon a vital organ and so cause death. In its early stages a sarcoma is confined to the locality in which it originates.

SARCOPHAGUS (Gr. sarx, flesh; phagcin, to eat). Coffin, usually of stone, especially one bearing sculptural enrichments or funerary inscriptions. The term denotes the supposed caustic action of certain stones. Originating in early Egypt for providing the dead with a house of eternity, the reproduction of contemporary dwellings passed into a mummiform type. The finest in England is the semi-translucent coffin of Seti I (Soane Museum).

Christian art adapted pagan sculpture to its ends; famous examples are the Julius Bassus, the Helena, the Constantia at Rome, and the S. Barbara at Ravenna. See Invalides; Phoenicia.

SARD. Variety of the cornelian. It ranges in colour from a light chestnut hue to an orange brown, and is much valued as a setting for signet rings.

SARDA CANAL. Indian irrigation canal opened in 1928. With its channels it is about 4,000 m. long. It irrigates about 7,000,000 acres of land in the United Provinces. It cost over £7,000,000 and took eight years to make.

SARDANAPÁLUS. Legendary Assyrian king. According to Ctesias, Diodorus, and other Greek writers, he was an effeminate voluptuary who reigned in the 9th century B.C. Besieged in Nineveh for two years by a Median satrap Arbaces, he caused himself, his harem, and treasure to be burned on a funeral pyre, 400 ft. high. The name and date are reminiscent of Ashurbanipal, the rebellious son of Shalmaneser III, about 825. The story embodies also confused memories of authentic events two centuries later, especially under the peaceably disposed but not effeminate Ashurbanipal (q.v.), and under his brother Shamash-shum-ukin, who in 648 burned himself in his palace in Babylon. See Nineveh.

SARDINE. Word originally used for a small fish of the herring family, when it is preserved in oil. The name is a corruption of

Sardinia, as many fish for preserving were taken around that island. It has been held, however, that the word sardine is applicable only to the pilehard (q.v.).

SARDINIA. Island in the Mediterranean. It has an area of 9,299 sq. m., and is separated from Corsica by the Strait of Bonifacio. It is chiefly mountainous. Minerals include silver-lead, manganese, and iron ores. Forests cover a fifth of the area. Wheat, wine, and olive oil are produced. Charcoal, fish, salt, wine, olives, and minerals are the principal exports. There are universities at Cagliari, the capital, and Sassari. The island abounds in remains of the Bronze Age. Pop. 955,303.

Sardinia was under Spanish viceroys from 1478 to 1713, when it passed to Austria, and in 1720 to Savoy, whose duke, Victor Amadeus II, became king of Sardinia. In 1730 Victor Amadeus abdicated in favour of his son, Charles Emmanuel I, but the latter's son was driven from his throne by Napoleon in 1796, and Savoy and Nice were annexed to France. The Congress of Vienna, 1814, reinstated the house of Savoy and added the territory of the former republic of Genoa to their realm.

The kingdom thus comprised Genoa, Savoy, Aosta, Piedmont, Nice, and Sardinia. Victor Emmanuel I abdicated in 1821 in favour of his brother, Charles Felix, upon whose death ten years later the crown of Sardinia passed to the Carignano branch in the person of Charles Albert. His son, by participation in the Crimean War, raised Sardinia to a seat in the council of nations, and by the sacrifice of Nice and Savoy, Cavour bought the assistance of Napoleon III to drive the Austrians from Italy; but the kingdom ceased to exist when Victor Emmanuel was crowned king of Italy in 1861. See Cavour; Italy (map); Savoy; Victor Emmanuel.

SARDIS. Capital of the old kingdom of Lydia. Captured by the Persians in 546 B.C., it figured later in the Ionian revolt. After Alexander the Great took it in 334 B.C. it became a Greek city of importance. It was the seat of one of the earliest Christian bishoprics, and was one of the seven churches of Asia addressed in the Apocalypse. The city was destroyed by Tamerlane in the 15th century, and is now represented by a village called Sart, about 50 m. N.E. of Smyrna.

SARDONYX. Variety of onyx. It displays alternate rings of white and brown. It is mounted in jewelry with a plain table surface, carved or engraved, and is used for other ornamental purposes. See Gem.

SARDOU, VICTORIEN (1831-1908). French dramatist. Born in Paris, Sept. 7, 1831, he achieved success in 1860 with *Monsieur Garat* and *Les Prés Saint-Gervais*. A writer of extraordinary fertility and cleverness, he succeeded in almost all forms of drama, in the comedy of intrigue, e.g. *Les Pattes de Mouche*, 1860, familiar in English as *A Scrap of Paper*; in the comedy of manners; in political comedy, e.g. *Rabagas*; and in historical drama, e.g. *Patrie*, *Thérémidor*, and *Madame Sans-Gêne*. Many of his later melodramas, e.g. *La Tosea*, were written for Sarah

Bernhardt, and Sardou also wrote two plays, *Robespierre*, 1902, and *Dante*, 1903, for Henry Irving. He died in Paris, Nov. 8, 1908.

SARGASSO SEA. Region of the Atlantic Ocean off the American coast about the latitude of Florida, reaching about halfway towards Africa. It is composed of floating masses of seaweed characterised by numerous berry-like bladders. This dense gulf weed (*Sargassum bacciferum*) is the home of many small marine animals. Columbus discovered the Sargasso Sea, which long had an unenviable reputation as being dangerous to navigation.

SARGENT, JOHN SINGER (1856-1925). Anglo-American painter. Born in Florence, of American parents, he studied at Florence, and in Paris under Carolus-Duran. Settling in Chelsea, he soon attracted attention as a portrait painter. He became A.R.A. in 1894 and R.A. in 1897; and was a conspicuous exhibitor at the Salon. Among his works are portraits of Ellen Terry as Lady Macbeth, the Misses Wertheimer, Mrs. Carl Meyer and Children, Joseph Chamberlain, and "Carmenita." Later the slashing bravura of his earlier style refined itself, and sunlit landscapes occupied him. His *Carnation*, *Lily*, *Lily*, *Rose*, is in the Tate Gallery. He died April 14, 1925. See p. 730.



John S. Sargent, Anglo-American painter

SARGON. King of Assyria, 722-705 B.C. The Biblical spelling represents the euneiform Sharrukin, assumed by a military usurper who

founded the Sargonid, the last Assyrian dynasty. After the capture of Samaria he deported its inhabitants. He overthrew Hamath, 720; Carchemish, 717; Ashdod, 711 (Is. 20); and Mita of Mushku and Merodach-baladan of Babylon, 709. His son Sennacherib succeeded him. See Assyria; Samaria.

Another Sargon, or Sharrukin, was king of Akkad, Babylonia. The Neo-Babylonian tradition which dates him about 3800 B.C. is regarded by many scholars as 1,000 years too early.

SARI BAIR. Hill of Gallipoli peninsula. In the S.W., a few miles from the coast, it gives its name to a steep rock, Sari Bair Point, midway between Suvla Bay and Gaba Tepe (q.v.). Its height is 972 ft. The hill was prominent in the Allied campaign in Gallipoli in the Great War. See Dardanelles; Gallipoli, Campaign in; Suvla Bay.

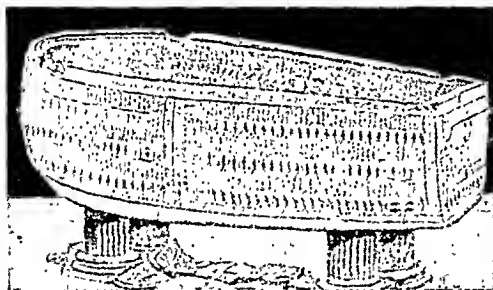
SARK. One of the Channel Islands. About 1,270 acres in area, it lies 6 m. E. of Guernsey, and consists of two peninsulas, Great Sark and Little Sark, joined by a causeway called the Coupée. It has a tiny harbour on the E. coast known as Creux, and is remarkable for its fine cliffs and caves. It is a dependency of Guernsey. Pop. 500. See Channel Islands.

SARK. Stream of Dumfriesshire, Scotland. It rises in the Collin Hags and flows into the estuary of the Esk at the E. end of Solway Firth. For 7 of its 13 m. it forms the boundary between England and Scotland.

SARNIA. City and port of Ontario, Canada. On the river St. Clair, near Lake Huron, 170 m. from Toronto, it is a station on the C.N. Rlys., and steamers go from here to



Sargon, king of Assyria. From a relief



Sarcophagus. Magnificent coffin of Seti I of Egypt, carved out of a block of argonite. Soane Museum



Victorien Sardou, French dramatist

ports on the Great Lakes and the St. Lawrence. Here are lumber mills Pop. 14,877.

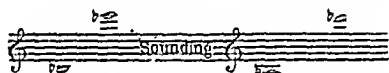
SAROS or **XEROS**, GULF OF. Inlet of the Aegean Sea, the ancient Sinus Melas. It is N.W. of the peninsula of Gallipoli. Its length is 40 m. and its width at the broadest about 20 m. See Dardanelles.

SARRAIL, MAURICE PAUL EMMANUEL (1856-1929) French soldier. Born at Carcas-sonne, April 6, 1856, he joined the French army in 1874. After a spell of active service in Algeria, 1877-78, he became a lieutenant in the Foreign Legion in 1882. He was made commandant of the infantry school at St. Maixent, 1901. He became director of infantry in 1907, general commanding the 12th infantry division, 1911, head of the 8th army corps, 1913, and of the 6th corps, 1914. Shortly after the outbreak of the Great War he was given command of the third army, and he took part in the first battle of the Marne, Sept., 1914. In Aug., 1915, he was appointed commander of the French army at Salonica, and in Jan., 1916, was made commander-in-chief of the whole expedition. In 1923 he was appointed high commissioner in Syria, but in 1925 he was recalled. Sarraill died in Paris, March 23, 1929. See Marne; Salonica.

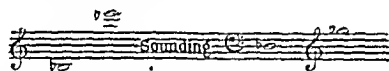


Maurice Sarraill,
French soldier

SARRUSOPHONE. Name of a family of brass wind instruments invented in 1863 by Sarrus, a French army bandmaster. They have a conical bore and are fitted with a double reed, while the mechanism is akin to that of the bassoon. The compass is two octaves and a fourth, that of the soprano in B flat being



The tenor and bass instruments, in B flat, are one and two octaves respectively lower in pitch than the above. The compass of the contralto in E flat is



The baritone and double bass, also in E flat, are respectively one or two octaves lower than the contralto.

SARSAPARILLA. Product of several species of Smilax, woody vines, natives of warm parts of America. The roots of the plant are dried, and from them by boiling is prepared a cooling drink.

SARSFIELD, PATRICK (1645-93). Irish soldier. Born near Dublin, of a landowning family, he entered the English army in 1678 and served in France. He was actively loyal to James II during his short reign, and when the king fled to France Sarsfield was one of his companions. He was in the force that crossed to Ireland to fight for the exiled king. Present at the battle of the Boyne, he won renown by conducting the defence of Limerick. Serving in the French army, he was mortally wounded at the battle of Neerwinden, which took place July 29, 1693. James II made him earl of Lucan.



Patrick Sarsfield,
Irish soldier.
Franciscan Library,
Dublin.

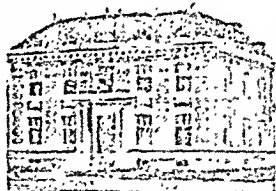
SARUM. Latin name for Salisbury, Wilts. Old Sarum is a parish 2 m. N. of Salisbury. It was once a city of importance, and returned two parliamentary members

down to 1832. The Sberborne see was transferred thither in 1075; the office books called the Sarum Use were compiled there about 1085; and its population migrated to Salisbury in 1227. New Sarum is the official name of Salisbury. See Salisbury.

SARWAT PASHA (1873-1928). Egyptian politician. Educated at Cairo, Abdel Khalek Sarwat became a lawyer and held several legal positions before being made governor of Assiut in 1908. In 1909 he became procureur-general of native courts. From 1914 to 1919 he was a minister, and he worked steadily for the independence of his country. In 1921, when he was minister of the interior, the independence of Egypt was recognized, and in March, 1922, he became prime minister, but he resigned in Nov. In 1926 he became minister for foreign affairs, and in 1927 again prime minister. He resigned in March, 1928, and died in Paris, Sept. 22, 1928.

SASKATCHEWAN. Prov. of Canada. Its area is 251,700 sq. m., of which 8,892 sq. m. are water. It stretches from lat. 60° to the U.S. border. Its name is taken from that of its principal river, which runs right across it. Made a province in 1905, it was formerly part of the N.W. Territories. Regina is the capital. The state university is at Saskatoon. The province is part of the prairie region, although there are some hills in the S. In the N. there are a number of lakes, and throughout it is well watered. The chief crops are wheat, oats, and barley; horses, cattle, and sheep are reared. Some coal is mined and fishing is carried on. The N. part is mainly covered with trees. The country is served by the trans-continental lines of rly., which link up with the systems of the U.S.A. Pop. 820,738.

The river Saskatchewan is formed by two streams, the N. and the S. Saskatchewan. The two unite near Prince Albert, and the joint stream discharges into Lake Winnipeg. To the head of Bow the length of the river is 1,205 m., but the united one is only about 300 m. See Canada; Regina.



Saskatoon, Canada. The Court
House, built in 1907

SASKATOON. City of Saskatchewan, Canada. It stands on the S. Saskatchewan river, 466 m. from Winnipeg, on the C.P.R. and C.N. Rlys. Here is the provincial university. Industries include the making of bricks, machinery, and clothing, and factories for wooden goods. Pop. 31,234.

SASSAFRAS (*Sassafras variifolium*). Tree of the order Lauraceae, native of N.E. America. It has yellow-green twigs and oval leaves, greenish-yellow flowers in short sprays, and blue, plum-like fruit. The twigs and leaves are mucilaginous, and the bark has an aromatic odour.



Sassafras. Twig showing fruit
and leaves. Inset, flower spray

The root and bark have stimulant properties, and are used also to make a yellow dye. The leaves make Sassafras tea, whilst a kind of beer is brewed from young shoots, and the oil extracted from the fruit is used in perfumery.

SASSANID. Name of a Persian dynasty which ruled from A.D. 226 to 651. Within a hundred years of the destruction of the Persian Empire by Alexander the Great, a new empire called Parthian, under a dynasty called the Arsacidae, was set up in the regions E. of the river Euphrates. This Parthian dynasty ruled till A.D. 226, when it was overthrown by a chief of the true Persian race, Babegan or Ardashir. The dynasty took its name from Sassan, a more or less mythical ancestor of Ardashir. See Persia.

SASSOON, SIR JACOB ELIAS (1844-1916). British merchant. The grandson of David Sassoon of Bagdad, a Jew who migrated to Bombay in the early part of the 19th century, he was the son of David Sassoon who founded the firm of E. D. Sassoon and Co. Jacob took a leading part in developing the cotton industry of western India and was the recognized head of the Jewish community. He was made a baronet in 1909, and died Oct. 24, 1916. He was succeeded by his younger brother, Edward Elias (1853-1924).

Another branch of the family is represented by Sir Philip Albert Gustave David Sassoon (b. 1888), 3rd baronet, who in 1912 succeeded his father in a title conferred in 1890. He was elected M.P. for the Hythe div. of Kent from 1912. From 1924-29 Sir Philip was under-secretary for air.

SASSOON, SIEGFRIED LOREANNE (b. 1886). British author and soldier. Educated at Marlborough and Clare College, Cambridge, he joined the Sussex Yeomanry in 1914. In 1915 he obtained a commission in the R. Welch Fusiliers, and he served in France and Palestine until nearly the end of the war. In 1919 he was literary editor of *The Daily Herald*. Sassoon's published works include *The Old Huntsman*, 1917; *War Poems*, 1919; *Memoirs of a Foxhunting Man*, 1928, which received the Hawthornden Prize, and *Memoirs of an Infantry Officer*, 1930.

SATAN. One of the many Hebrew names given to the prince of the powers of darkness. The idea of a supreme evil spirit, the Devil or Satan, came into prominence among the Jews about the time of the captivity. Milton, in *Paradise Lost* and *Paradise Regained*, did much to establish modern belief in a personal cause of the Fall and of moral evil.

Satan worship is a ritual reverence of the devil as the personalised ruler of the powers of evil. It differs from animism and also from the devil worship of the Yezidis, who venerate the arch-enemy in the belief that such friendliness will be adequately rewarded when he regains paradise.

Late in the 19th century there were declared to occur in France and elsewhere persons who defied the Supreme Being by offering allegiance to his adversary. This perverted cult, called Satanism, was short-lived.

SATELLITE. In astronomy, a companion body to a planet or star. According to the theory of their formation the planets, before having completely cooled, and while still in the state of rapidly rotating semi-liquid bodies, threw off their satellites, which, however, had not sufficient speed of direct motion to escape from the attraction of the parent body. Venus and Mercury have no satellites; the earth one, the moon; Mars two; Saturn, in addition to its rings, ten; Jupiter nine; Uranus four; and Neptune one. See Planet; Star.

SATI (Hind. virtuous wife). Hindu widow who immolates herself on her husband's funeral pyre, or is separately immolated when he has died at a distance. The older spelling is suttee. In ordinary European usage the word sati denotes the act as well as the victim.

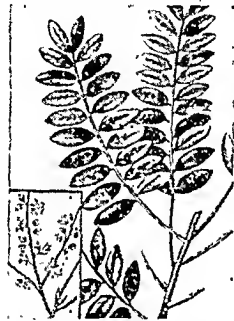
After its abolition by law in British India in 1829 it dwindled rapidly, but lingered longer in the native states, being performed by several widows of Sir Jung Bahadur of

Nepal in 1877. Since that date the practice has become virtually extinct.

Widow-burning is related to a primitive custom, still found in Africa, of providing necessary service in the afterworld by sacrificing women and slaves.

SATIN BIRD (*Ptilonorhynchus violaceus*). Species of bower bird. It is related to the birds of paradise. The feathers of the forehead have a very silky or satin-like lustre. The birds occur in N. and E. Australia, and construct bowers or playing grounds, which they ornament with twigs, pebbles, land shells, etc.

SATINWOOD (*Chloroxylon swietenia*). Tree of the order Meliaceae, a native of India. The leaves are divided into two rows of numerous oval leaflets; and the small, whitish flowers are in large clusters. The wood is close-grained, hard, and of a yellow tint, with a satiny lustre. It is used for veneers, the backs of brushes, turnery, etc.

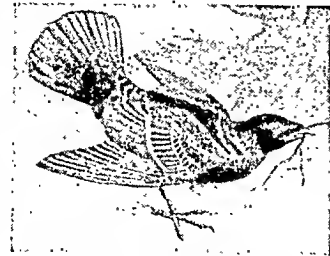


Satinwood. Divided leaves and inset flower spray

learnt their craft in Korea. This type had green, yellow, black, or parti-coloured (flamé) glaze. A second, Satsuma-Tangen, had a vitrifiable glaze. The third type (end of the 18th century) had a hard paste, and was decorated with diaper patterns, flowers, and Japanese mythological creatures. A fourth type, with hard white paste, was decorated in colours and gold, also with yellow, black olive-green, or mustard-yellow glazes.

SATURN. In classical mythology the god of agriculture. According to a popular legend, Saturn was an ancient king of Latium, whose reign, being a time of great happiness and prosperity, was the so-called Golden Age (q.v.). Saturn was subsequently identified with the Greek Cronos (q.v.).

SATURN. In astronomy, the next outward planet to Jupiter of the superior planets. Its mean distance from the sun is 886,779,000 m., and its equatorial diameter 73,713 m. The time occupied in its yearly path about the sun is 29.46 years. The conspicuous feature of Saturn is the ring, or rings. The ring system is situated in the plane of the planet's equator, and consists in chief of two bright outer rings, one within the other, separated by what is called Cassini's division, from its discoverer, and an inner dark ring called the crape ring. There are other gaps and subdivisions, less conspicuous. All the rings consist of aggregates of tiny moons or particles, each moving independently in its own orbit round the planet. The moons of Saturn, 10 in number, are Phoebe, Themis, Mimas, Enceladus, Tethys, Dione, Rhea, Titan, Hyperion, and Iapetus. See Astronomy: Planet; Satellite



Satin Bird, the delicately shaded species of Australian bower-bird

SATURNALIA. In Rome, the annual festival of Saturn. It was kept under the republic on Dec. 19, extended by Augustus to three days, Dec. 17-19, and later to a week. Schools and law courts were closed, and no public business transacted. Slaves enjoyed freedom of speech and temporary liberty, and were waited on by their masters.

SATYR. In Greek mythology, a minor nature deity. They were chiefly found in attendance upon Bacchus. Of repellent appearance, they had pointed goat's ears, horns, and a tail, and were addicted to over-indulgence in wine and licentiousness. The Roman poets confused them with the fauns.

SAUGOR. Town of the Central Provinces, India. It is a trading centre and the capital of a district. Pop. 39,300.

The name is also that of an island of Bengal. This is at the mouth of the Hooghli and is famous for its bathing festival, which annually attracts thousands of pilgrims.

SAUL (d.c. 1010 B.C.). First king of Israel. The son of Kish, of the tribe of Benjamin, he delivered Jabesh-Gilead from Nahash, king of Ammon, and was made king at Gilgal. He defeated the Philistines at Gibeon or Gaba, and afterwards crushed the Amalekites, but having disobeyed a command to destroy them utterly, received from Samuel (q.v.) the message that Jehovah had rejected him. His insane jealousy drove David (q.v.) into outlawry. He was overthrown by the Philistines at Mt. Gilboa, where his sons were killed, and he fell upon his sword (1 Sam. 8 to 2 Sam. 1). Saul was also the early name of S. Paul the apostle.



Satsuma. Bowl of the famous Japanese faience ware South Kensington Museum

SAULT SAINT MARIE. Town of Ontario, Canada. It stands on St. Mary's river, and on the C.N. Rlys. The town owes its importance to its position on the Sault Ste. Marie, or Soo, Canals. The name is due to the falls (Old Fr. saulter, to leap) in St. Mary's river. Pop. 21,000. Pron. Soo-san-mary.

There is a city of the same name on the American side of the river. This, too, has a station on the C.P.R., and the two are connected by a bridge. Pop. 12,100.

THE SHIP CANALS. There are two of these, one on each side of the river, and both cut to avoid the falls therein. The American canal was opened in 1855 and was used by all shipping between Lakes Superior and Huron until the Canadian canal was opened in 1895.

Both canals are closed by ice for 100 to 120 days each winter. See Ship Canal.

SAUMUR. Town of France. It is on the Loire, 30 m. S.E. of Angers. Near are prehistoric caves, with Celtic remains, including the great dolmen of Bagneux. The castle, founded in 1040, is now an arsenal and powder magazine. Its church of Notre Dame de Nantilly is a pilgrim resort and has splendid tapestries. The town was a famous Huguenot stronghold.

Here is a cavalry school, which was founded in 1768. Pop. 15,956.

Saumur is a white, effervescent wine, grown in the Loire vineyards, and made at and matured in the limestone caves near Saumur. It resembles champagne in general characteristics.



Satyr. Nature deity of ancient Greece British Museum

He specialised in the flora and geology of the Alps, and was one of the first to reach the summit of Mont Blanc. He undertook a large number of other climbs for research purposes and scientific observations, the results of which were published in *Voyages dans les Alpes*, 1778-96. Saussure died Jan. 22, 1799. Consult Life, D. W. Freshfield, 1921.

SAUTERNE. French white wine grown in the Sauterne district, S. of Bordeaux. Of a pale golden tint, it has a clinging taste and distinctive, delicate bouquet. It contains from 9 to 14 p.c. of alcohol, keeps well, and commands high prices. Château Yquem is considered the finest Sauterne.

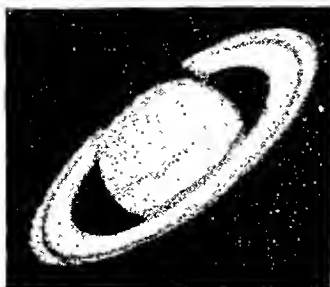
SAVAGE, RICHARD (d. 1743). British poet. His claim to be the illegitimate son of the countess of Macclesfield and the 4th Earl Rivers was denied, and evoked his poem entitled *The Bastard*, 1728. Savage was the author of two other poems, *The Wanderer* and *The Progress of a Divine*. His poems all have a gloomy tone, reflecting the wretchedness of his own life. The hardships of his early days were often shared with Johnson. Savage died Aug. 1, 1743, in a debtor's prison at Bristol.



Richard Savage. British poet

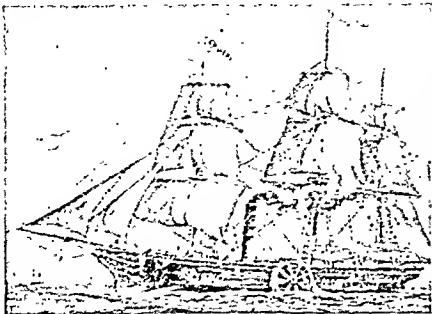
SAVANNAH. Natural grass land in tropical countries. Savannas are known, also, as llanos in Venezuela, campos in Brazil, downs in Australia, and park lands in Africa. They form one of the natural vegetation regions of the globe and occur in regions of summer rainfall between the hot deserts, which are rainless, and the tropical forests, where rain falls at all seasons.

SAVANNAH. City of Georgia, U.S.A. It stands on the Savannah river, 18 m. from its mouth. From the number and variety of its trees it is known as the Forest City. One of the foremost cotton ports, and an important naval stores port, it ships lumber, cotton seed, turpentine and resin, and has rly. car and repairing shops, foundries, machine shops, cotton-seed oil and lumber mills, and fertiliser factories. Pop. 93,134.



Saturn. The planet and its rings in 1917. from a photograph by Dr. P. Lowell

Savannah was the name of a vessel built at Savannah, Georgia, U.S.A. She was the first ship fitted with steam power to cross the Atlantic, but the greater part of the voyage to Liverpool was done under sail. It took place in 1819 and occupied 25 days.



Savannah. The first vessel to cross the Atlantic using steam as an auxiliary to her sails

SAVERNAKE. Village and forest in Wiltshire, 2 m. from Marlborough. The village is on the G.W. Rly. The forest is 16 m. in circumference and contains a deer park. Once a royal forest, it belongs to the marquess of Ailesbury, whose seat, Tottenham House, is here.

SAVIGNY, FRIEDRICH KARL VON (1779-1861). German jurist. Born at Frankfort-on-Main, Feb. 21, 1779, he became a teacher at Landslut and, later, in Berlin. In 1842 he was appointed to draft the legislative measures of the Prussian government. Savigny was one of the greatest jurists of the 19th century. His Law of Possession, 1803; History of Roman Law in the Middle Ages, 1815-31; and System of Modern Roman Law, 1840-49, have become classics. He died Oct. 25, 1861.

SAVILLE, SIR HENRY (1549-1622). English scholar. Born at Bradley, near Halifax, Nov. 30, 1549, and educated at Brasenose College, Oxford, he became known as a mathematician and a Greek scholar. Having been tutor to Queen Elizabeth, he was made warden of Merton College, Oxford, in 1585, and provost of Eton in 1596. The founder of the Savilian professorships of geometry and astronomy at Oxford, he died at Eton, Feb. 19, 1622.

SAVINGS BANK. Institution for the promotion of thrift. The larger banks, known as trustee savings banks, can only be formed with the approval of the National Debt Commissioners, and are under state inspection. A savings bank may also be conducted on the joint stock system, or by a municipality or by the state, as in the case of the Post Office Savings Bank.

The first savings bank in England was organized at Wendover by the Rev. Joseph Smith in 1799, similar institutions being founded in Scotland, 1807, and in Ireland, 1815. Trustee savings banks became very popular in the first half of the 19th century, the depositors increasing from 429,400 in 1831 to 1,600,000 in 1861, the year of the founding of the P.O. savings bank, in which were incorporated a large number of the trustee banks. Military and naval savings banks were instituted in 1859 and 1866 respectively. In addition there are school and railway savings banks. On Nov. 20, 1928, there were 2,460,089 accounts open in the trustee savings banks, with £120,486,417 to the credit of depositors.

The Post Office acts as a bank for savings, and in every town and in almost every village small savings may be paid in at a post office. Any person over the age of seven may become a depositor. On Dec. 31, 1928, there were 10,000,000 active deposit accounts in the Savings Banks, with £288,619,186 due to depositors. On the same date public funds to the amount of £191,463,519 were held for depositors. See War Savings.

SAVONAROLA, GIROLAMO (1452-98). Italian monk and reformer. Born at Ferrara, Sept. 21, 1452, he was the third son of Michele Savonarola. He entered the Dominican Order, joining the convent of San Marco in Florence. After early failures he attracted attention in 1489 by his fervent preaching. The enthusiasm he aroused as a moral reformer dragged him into the political vortex; assuming almost the character of an inspired prophet warning Florence of the wrath to come, he inevitably discovered the means to her regeneration in political programmes. Charles VIII of France was to be the regenerator, and when he actually came to Florence in 1494, Savonarola's character as a prophet seemed established.

But Savonarola's claims to prophetic powers and divine authority provided Pope Alexander VI with an excuse, first for ordering him to abstain from preaching, and then, when he disobeyed, for excommunicating him.

A challenge to an ordeal by fire, between one of Savonarola's followers and a friar of the antagonistic Franciscan Order, ended in a fiasco which ruined Savonarola's prestige. He was brought to trial as an impostor and a heretic, was condemned, and with two of his followers was put to death by strangling, May 23, 1498. Consult Life and Times of S. P. Villari, Eng. trans. L. Villari, 1899.

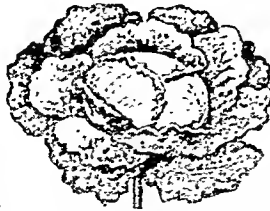


Savory. Spray of winter savory

SAVORY OR SAVOURY (Satureia). Genus of labiate plants, used as potherbs. Summer savory (*S. hortensis*) is a downy, aromatic annual, native of S. Europe. It has small, narrow ohlong leaves, and small, pale lilac flowers in whorls. Winter savory (*S. montana*) is a perennial with a shrubby base, native of the same region. It has slender leaves and pale purple flowers. Both plants are gathered when just coming into flower and dried for use when they are required.

SAVOY. Cultivated variety of cabbage, distinguished by its curled and wrinkled leaves. It is particularly hardy and will stand frost well, and hence it is of great value during the winter months. The details of general culture are the same as those for cabbage. See Cabbage.

SAVOY. District of France, once a province of Italy. It lay between the Alps, the Lake of Geneva, and the river Rhône, with its capital at Chambéry. From 1034 until 1792 it was a portion of the duchy of Savoy, and the kingdom of Sardinia. In 1792 the



Savoy. Hardy variety of cabbage



Girolamo Savonarola, Italian reformer
From a painting by Fra Bartolommeo

country was annexed to France, but by the Congress of Vienna it was restored to its former sovereigns. It was ceded to France in 1860.

THE HOUSE OF SAVOY. This family, whose head is the king of Italy, was founded by Umberto Biancamano (Humbert of the White Hand) who, in 1034, was granted Savoy and the adjacent territories on the W. side of the Alps. The lands on the Italian side, the later Piedmont, were added by marriage about 1056. Thenceforward the united estates and titles passed in male succession to Victor Emmanuel III, who came to the throne of Italy in 1900. See Italy; Sardinia.

SAVOY, THE. District of London, S. from the Strand between Wellington Street and Carting Lane, W.C. It is named after Peter of Savoy, earl of Richmond, who was granted the manor in 1236, and gives its name to a chapel royal, an hotel, and a theatre. The palace was destroyed by Wat Tyler and his followers, but was rebuilt in the 16th century and used for a time as a hospital.

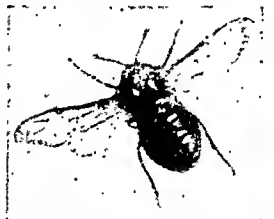
The chapel, now known as the chapel royal, was used in 1564-1717 as the parish church of S. Mary-le-Strand. The Savoy Conference, a meeting of 12 bishops and 12 Puritans for discussing changes in the Book of Common Prayer and other matters, was held in the palace in 1661. The conference sat for three months, but without effecting anything.

The theatre, built for Richard D'Oyly Carte, was opened Oct. 10, 1881, with Gilbert and Sullivan's comic opera, *Patience*. In 1929 it was entirely reconsecrated. Adjoining the theatre is the Savoy Hotel, opened Aug., 1889. In the courtyard is a statue of Peter of Savoy.

SAWBRIDGEWORTH. Urban dist. of Hertfordshire. It stands on the Stort, 10 m. from Hertford, on the L.N.E. Rly. There is trade in agricultural produce. Pop. 2,295.

SAW FISH (Pristis). Group of large fishes related to the sharks. The upper jaw is produced to form a long, flattened beak, having a row of sharp teeth set in sockets at either edge. They are found mainly in the tropics, but one species occurs in the Mediterranean and Atlantic. They often exceed 20 ft. in length, with a saw 6 ft. long.

SAW FLY. Large family of hymenopterous (membrane-winged) insects, of which about 2,000 species are recognized. The name is derived from the ovipositor of the female, somewhat resembling a saw, with which she cuts a slit in plant tissues to contain her eggs. The larvae feed upon plants. The pine saw fly wreaks havoc in plantations of young trees, and the rose saw fly kills the leaves of rose trees. The turnip saw fly is another troublesome member of the group.



Saw Fly. *Trichiosoma tibialis*, which attacks hawthorn bushes

SAW WORT (Serratula tinctoria). Perennial herb of the order Compositae. A native of Europe, its long leaves are cut into lobes with toothed edges. The flowers form a head like that of a small thistle, of long, oval shape surmounted by a crown of red-purple rays. From the saw wort a yellow dye is obtained.

SAXE, MAURICE MARSHAL (1696-1750). French soldier. Born at Goslar, Oct. 23, 1696, he was a natural son of Augustus the Strong, elector of Saxony, his mother being Anrora,



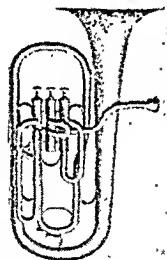
Saw Fish. Shark-like tropical fish, showing, on left, the long saw. See above

countess of Königsmark. He took the name of Saxe, and served with the Russo-Polish army against the Swedes and against the Turks in Hungary. In the War of the Austrian Succession he commanded in Bohemia. In 1744, now a marshal, he received the command of the French army in Flanders, and in the following year defeated the Allies at Fontenoy. He died Nov. 30, 1750.

SAXE. German form of the word Saxony. Before 1919 four states of the German Empire were Saxe-Altenburg, Saxe-Coburg-Gotha, Saxe-Meiningen and Saxe-Weimar-Eisenach. All were offshoots of the original duchy of Saxony, which was divided from time to time into separate states to provide for the various members of the ruling family. To the name Saxe was added that of the capital, and the rulers all called themselves dukes. Saxe-Coburg-Gotha was a union of Saxe-Coburg and Saxe-Gotha, and Saxe-Meiningen and Saxe-Weimar-Eisenach were also unions of two or more states. In 1919 all the dukes abdicated, and the four existing duchies, except Coburg, became part of the new republic of Thuringia. Coburg joined Bavaria.

SAXE-COBURG-GOTHA, DUKE OF (1826-1918). Title held by members of the family of Wettin. Ernest I (d. 1844) was the first duke of this united duchy, and his son Ernest II (d. 1893) the second. Ernest's brother was Albert, prince consort, and when Ernest died childless the duchy passed to the family of Albert and Queen Victoria. The prince of Wales, afterwards Edward VII, having renounced the succession, it passed to his brother, the duke of Edinburgh (q.v.). On the duke's death in 1900, the duke of Connaught having renounced, the duchy passed to his nephew, the duke of Albany, who abdicated in 1918.

SAXHORN. Brass musical instrument which was invented by the Belgian, Adolphe Sax (1814-94). When so required for orchestral use, the saxhorn is sometimes pitched a



E flat tenor saxhorn
Hawkes & Son

tone higher than the usual keys. With the exception of the tuba, which is the only member of the family which has found much acceptance in the orchestra owing to the lack of blending with other instruments, the mechanism is based on that of the cornet, having three pistons which respectively lower the pitch one, two, or three semitones. In the tuba another valve is needed, which lowers the pitch a perfect fourth. The saxhorns are useful members of the military band.

SAXIFRAGE or SAXIFRAGA. Genus of mostly perennial herbs, of the order Saxifragaceae. There are 160 known species, distributed throughout most of the regions of the world, and most frequent in the mountainous regions of the N. hemisphere. Many bear their leaves in low-growing rosettes. Twelve species are natives of Britain, including London pride (*S. umbrosa*) and meadow rockfoil (*S. granulata*), common in meadows and on sandy banks. Of the numerous alpine varieties many are favourite plants for the rock garden. See Mother of Thousands.

SAXMUNDHAM. Market town and urban dist. of Suffolk. It is 20 m. from Ipswich, on the L.N.E. Rly. The chief building is S. John the Baptist church. The main industry is trade in corn and cattle. Market day, alternate Wed. Pop. 1,368.

SAXON. Teutonic people, whose territory has greatly varied in historic times. Their name probably signifies swordsmen. Ptolemy states that they inhabited Slesvig and three

islands off its W. coast. In 286 they appear as pirates in the North Sea and English Channel, and by about 350 they had crossed the Elbe and extended their sway almost to the Rhine. In the 5th century they had made settlements at Bayeux and the mouth of the Loire, and according to Bede were associated with the Angles and Jutes in the conquest of Britain. The names Essex, Middlesex, Sussex, and Wessex, which contain their name, support the theory that their settlements were in the south of England. See Anglo-Saxon: England.

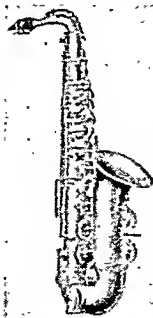
SAXONY. Republic of Germany, until 1918 a kingdom. The German name is Sachsen, and the French Saxe. Its area is 5,786 sq. m., and on its borders are Prussia, Bavaria, and Bohemia. Much of the country is hilly, the chief range being the Erzgebirge. The chief river is the Elbe. Dresden is the capital. Saxony is one of the great industrial areas of Germany. In addition to Leipzig and Dresden, it contains a number of important manufacturing centres, such as Chemnitz, Plauen, and Zwickau. Pop. 4,904,281.

Saxony originated in the 8th century in the land inhabited by the Saxons, and hounded roughly by the Rhine, Elbe, and Eider. About 850 a duke of Saxony appeared. In 1180 the great Saxon duchy was broken up. The name was lost by the district now known as Westphalia and by other parts of medieval Saxony, but was retained by two small areas, Lauenburg and Wittenberg. Saxe-Lauenburg became, in 1782, part of Hanover, while from Saxe-Wittenberg developed the modern republic. In 1356 its ruler was declared one of the seven electors. The emperor bestowed the duchy upon Frederick, margrave of Meissen, in 1423, and under him Saxony became one of the most important of the German states. In 1485 the Saxon lands were divided between two brothers, Ernest and Albert. The Albertine princes became electors, and later kings of Saxony. The Ernestine lands were divided into various duchies.

In 1806 the elector joined Prussia against Napoleon, but soon turning to France, he received the title of king and became a member of the confederation of the Rhine. Russia and then Prussia was in possession of the country, and its fate was hotly debated at the congress of Vienna. At length about half the kingdom was given to Prussia. In 1831 a new constitution was granted, embodying the ideas of an elected legislature and a responsible executive. In 1871 the kingdom became one of the states of the German Empire.

Saxony became the Socialist stronghold, but entered the Great War as eagerly as the other German states. At its termination a change of government was quickly effected. On Nov. 8, 1918, the king abdicated and the country was declared a republic. A new constitution was drawn up in Oct., 1920. See Germany.

SAXOPHONE. Brass musical instrument. It was invented by Adolphe Sax, and has a mouthpiece similar to that of the clarinet and fitted with a single reed. It is fingered like the oboe. It is made in various sizes and keys; sopranino in F and E flat; soprano in C and B flat; contralto in F and E flat; tenor in C and B flat; baritone in F and E flat; bass in C and B flat. The first key in each case is for the orchestra, while the second is for the military band.



Saxophone in alto size
Hawkes & Son

SAY, JEAN BAPTISTE (1767-1832). French economist. Born at Lyons, Jan. 5, 1767, of Protestant parents, he passed some years in business in London. He

returned to France, became an editor and took some part in politics, but his main interest was in economics. In 1831 he was chosen professor of political economy at the Collège de France. A follower of Adam Smith, whose views he made known in France, Say's great work is his *Treatise on Political Economy*. He died Nov. 15, 1832.

SAY, JEAN BAPTISTE LÉON (1826-96). French politician. A son of Horace Émile Say and a grandson of J. B. Say, he was born in Paris, June 6, 1826, and adopted first a business career. For a time in the public service, he turned to journalism and then to politics, entering the chamber of deputies in 1871. In 1871-72 he was prefect of the Seine, and in 1872-73, 1875-79, and 1882 was minister of finance, being responsible for paying the indemnity to Germany. In 1880-81 Say was president of the Senate. He died in Paris, April 21, 1896.

SAYCE, ARCHIBALD HENRY (h. 1846). British scholar. He was born Sept. 25, 1846, and educated at Bath and Queen's College, Oxford, becoming a fellow in 1869. He was professor of Assyriology in the university, 1891-1919. Although making a special study of the ancient empires of the East, he has done much to popularise the general results of comparative philology. In 1874-84 Sayce was a member of the commission for the revision of the Old Testament. His books are valuable aids to our knowledge of the ancient empires.

SAYERS, TOM (1826-65). English pugilist. Born at Brighton, May 25, 1826, he became famous in the prize ring in 1849, and secured the championship in 1857. His only defeat was by Nat Langham, Oct., 1853. Sayers fought his famous battle with John Carmel Heenan, the American, at Farnborough, April 17, 1860, the fight ending in a draw. He died Nov. 8, 1863, and was buried at Highgate.



Tom Sayers,
English pugilist

SAZONOFF, SERGIUS DIMITRIEVITCH (1866-1927). Russian diplomatist. He was second secretary at the Russian embassy, London, 1890-94, and then secretary in Rome, 1894-1904. Returning to London as councillor of the embassy, he was acting ambassador in Oct., 1904, when the Dogger Bank incident took place. In 1909 he returned to Russia, becoming assistant to Isvolsky, the foreign minister, whom he succeeded in Nov., 1910. Appointed Russian ambassador in London, Jan., 1917, he retired after the revolution. He died in Paris, Dec. 23, 1927.

SCABIOUS or PIN-CUSHION FLOWER (*Scabiosa*). Genus of annual and perennial herbs of the order Dipsacaceae. Natives of Europe, W. Asia, and Africa, they have opposite leaves, entire or deeply cut into lobes. These are varied in colour, according to species, from blue, purple, and crimson to white. The small scabious, the devil's-bit scabious, and the field scabious are British wild flowers.



A. H. Sayce,
British philologist



Scabious. Flower head of *S. arvensis*; top, right, of *S. succisa*

SCAD OR HORSE MACKEREL (*Caranx trachurus*) Common British fish. It resembles a large mackerel, but belongs to a different family. It occurs in shoals, is often nearly 2 ft. long, has bony plates along the lateral line, and lacks the characteristic stripes of the mackerel. It is of little value for the table.



Scad or Horse Mackerel, a common British fish

SCAFELL. Mountain group of Cumberland. It is 11 m. from Keswick, at the E. end of Wastwater. It consists of two main peaks, of which Scafell Pike is 3,210 ft., the highest mtn. in England, and another 3,102 ft. The two are separated by a narrow ridge called Mickledore. The ascent is best made from Wasdale Head. During the Great War German prisoners improved the road leading to the mountain. In 1919 Lord Leonfield presented the summit to the National Trust. See Lake District; also illus. below.

SCALA, LA. Opera house in Milan. Dating from 1778, and built on the site of the church of Santa Maria della Scala, it seats 3,600 persons. In connexion with it are a dancing school and a singing school. The theatre has been civic property since 1872, and the lessee receives an annual subsidy from the municipality. See Milan.

SCALE (Lat. *scala*, a ladder). In music this consists of the sounds which subdivide the interval of the octave, arranged in progressive order. It has varied, and still varies, in different nationalities and at different times. In the European system the sequence of the steps depends upon the mode, according as the 3rd and the 6th degrees form major or



Scafell, Cumberland. The lower peak of Scafell and part of Mickledore, from the south-east. See above G. P. Abraham, Keswick

minor intervals with the tonic. The major or diatonic scale is composed of two disjunct tetrachords, each consisting of two tones and a semitone; the complete order is therefore tone, tone, semitone, tone, tone, semitone. From these tetrachords is developed the whole system of 15 keys. The minor scale (harmonic form) has the 3rd and 6th degrees lowered a semitone.

SCALE. Flat, hardened structures which occur on or in the skin of many animals. In fishes and reptiles the body is more or less covered with them; birds have them on the legs, and some mammals, as the armadillo and the pangolin, have a protective coating of them. The tails of rats, mice, beavers, and some other mammals are provided with scales. In the fishes the scales are of a bony nature and are secreted by the skin; but in reptiles, birds, and mammals they are of a horny character and grow out from the skin.

SCALES. Weighing machine. In the singular, scale, it refers to the pan of a balance, and the lever or beam of a balance is often known as the scale beam. The balance is one of the earliest instruments for measuring known. Many Egyptian, Greek, and Roman drawings show the balance in much the same form as the single scales now in use.

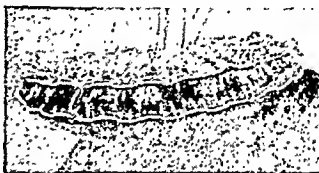
SCALIGER, JOSEPH JUSTUS (1540-1609). French scholar. Born at Agen, he was the son of Julius Caesar Scaliger (1484-1558), a practitioner of medicine, but more famous as a writer and controversialist. His early education was directed by his father, but later he studied at the university of Paris. In 1563 and succeeding years he spent some time in Italy, England, and elsewhere.

A Protestant, Scaliger left France after the massacre of St. Bartholomew, and in 1573-74 was professor at Geneva, but he again lived in France from 1574 to 1593. In 1593 he accepted an invitation to become professor at Leiden, and he was still there when he died, Jan. 21, 1609.

Inheriting a taste for study and spending a long life among books, he mastered with great rapidity and thoroughness Greek, Latin, and other languages. His work on chronology was of supreme importance in fixing the dates of the leading events of the world, and his editions of Catullus, Manilius, and Eusebius bear further witness to his powers as a critic and commentator.

SCALLOP. Name for marine bivalve molluscs of the genus *Peeten*, of which about 20 species occur around the British coasts.

The valves of the shell, usually brightly coloured, are more or less fan-shaped and are winged at the hinge. One valve is often convex while the other is flat. These molluscs can swim with some speed by rapidly opening and shutting the valves. Two species are eaten in Great Britain, the common scallop (*P. maxima*) and the quink (*P. opercularis*). Pron. Skol-lap. See Mollusc.



Scallop with shell opened

SCALP (Mid. Dutch *schelp*, shell). Structure formed by the soft tissues which cover the vault of the cranium. It consists of three layers: the skin; the superficial fascia, a layer of fibrous tissue; and the occipitofrontalis muscle, with its aponeurosis or fibrous extension. Beneath the scalp is a layer of loose areolar tissue, separating it from the periosteum or fibrous membrane, which is closely adherent to the bone.

The skin of the scalp is thicker than the skin in any other part of the body, and contains numerous sweat and sebaceous glands and hair follicles. The scalp is abundantly supplied with blood vessels, in consequence of which bleeding from wounds of the scalp is apt to be persistent and severe, but such wounds tend to heal readily. See Anatomy; Brain.

Scalping, or the custom of removing part of the skin, with hair attached, from an enemy's head was practised by Seythians, Celts, and Teutons. Developed in N. America in recent centuries, it was infrequent outside the Iroquois and Muskogee regions. See American Indians.

SCAMANDER. Ancient name of the river of Asia Minor now known as the Menderes. It rises in Mount Ida (Kaz Daghi), flows through the plain of Troy, and debouches into the Hellespont (Dardanelles).

SCAMMONY. Dried root of convolvulus scammonia from Syria and Asia Minor. The resin prepared from this

is dark brown in colour. The compound powder of scammony contains 50 p.c. of scammony resin. Scammony is a strong purgative and may be usefully administered in obstinate constipation, for threadworms, etc.

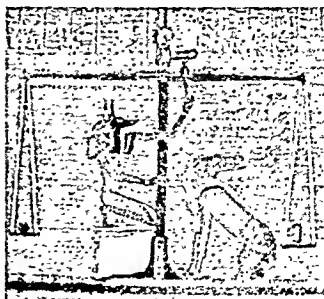
SCANDAL (Lat. *scandalum*, cause of offence). In law, a pleading or affidavit is scandalous which alleges anything unbecoming to the dignity of the court, or indecent, or offensive, or merely abusive—as where an allegation of crime, not material to the issue, is made. On application the court will strike out such a pleading or affidavit and award costs against the party in fault. But however scandalous an allegation may be, if it is relevant to any issue in the case it will not be struck out. See Libel.

SCANDINAVIA. Name of the European peninsula divided between Norway, Sweden, and Denmark. The term grew from Scandia, an ancient name for S. Sweden, to which the term Scania (Swed. *Skåne*) is still applied. See Denmark; Norse; Norway; Sweden.

SCANDIUM. Rare earth metal of the cerium group. Its chemical symbol is Sc, atomic weight 45.1; atomic number 21. Its oxide was discovered by Nilson, in 1879, in euxenite. Scandium is also found in monazite, thorite, and other rare minerals of Scandinavia, Finland, and Greenland; in tin ores and wolframite, generally with thorium which is separated with great difficulty.

SCANNING DISK OR NIKKOW DISK. Disk used in phototelegraphic and television apparatus. It is pierced with a number of holes arranged in a spiral around its periphery. The angular displacement of the holes is equal, but owing to the spiral each successive hole is closer the centre than the last. When, therefore, the disk is rotated in front of a source of light, i.e. the projector of a television transmitter, a given area in focus will be traversed by a light spot in strips, side by side, and with each complete revolution of the disk the whole of the subject area will be thus explored. In the television receiver a scanning disk revolves in front of a neon lamp, and the speed is such that, owing to persistence of vision (see Cinematograph), an image of the whole of the subject area is seen by the eye. See Phototelegraphy; Television.

SCAPA FLOW. Landlocked sea basin in the S. of the Orkney Islands, Scotland. During the earlier part of the Great War it was the principal base of the British Grand Fleet. The German fleet was interned here after its surrender in Nov., 1918, and the greater part of it was scuttled by its officers and crews, June 21, 1919. A number of these warships were afterwards salvaged. See Salvage.



Scales. An ancient Egyptian painting showing Anobis, the jackal-headed guardian of the dead, weighing a human heart, representing the soul, against a feather (right), typifying Truth

SCAPEGOAT. Term in the O.T. (A.V.) for one of the two goats brought to the altar on the Day of Atonement (Lev. 16). While one was sacrificed to the Lord, the other was the scapegoat. The high priest having confessed over the head of the scapegoat all the iniquities of Israel, the animal was sent away into the wilderness to the evil spirit (Azazel). Similar ceremonies, connected with evil spirit exorcism, have been noted among races other than Jews, notably in parts of Borneo.

SCAPHOPODA. Class of the Mollusca. The body is bilaterally symmetrical, and the foot is adapted for burrowing in the sands of the sea. A popular name, tooth-shell, refers to the elongated tubular shell. See Mollusc.

SCAPULA OR **SHOULDER BLADE.** Bone placed at the upper and back part of the thorax. It consists of a flat triangular part or body, with two projecting portions, the coracoid process and the spine, the latter terminating in an expansion known as the acromion, which forms the point of the shoulder, overhangs the shoulder joint, and articulates with the collar-bone. The scapula is attached to the chest, the back, and the arm by powerful muscles. See Shoulder.

SCARAB. Ancient gem in the form of a dung-beetle, especially *Scarabaeus* (Ateuchus) sacer. It originated in predynastic Egypt as an amulet, was made



Scarab. Ancient Egyptian gem

of polished or glazed stone, metal, or glazed faience, and was perforated lengthwise for suspension. About 7,500 in public collections bear, engraved in intaglio upon the flat oval base, names or figures of divine, royal, official, or private persons, mottoes, and magical formulas. By the XIIth dynasty they became used as seals, worn as pendants, or mounted as signet rings. Some commemorated royal hunts.

SCARABAEUS.

Genus of dung-eating beetles, found in Europe, Asia, and Africa. They collect pellets of dung and bury them as food for themselves and their larvae. There are over 60 recognized species of this beetle. See Beetle.

SCARAMOUCHE (It. *scaramuccia*, skirmish). Stock character in old Italian comedy. He was a

braggart and a coward, usually masked, and dressed in black, and received a sound drubbing from Harlequin. An English play, *Scaramouch*, by E. Ravenscroft, was produced in 1677. The term, supposed to be derived from the name of the Italian buffoon *Scaramuccia* (d. 1644), meant a rascal.

SCARBOROUGH. Borough, seaport, market town, and watering place of Yorkshire (N.R.). It stands on a fine bay, divided into North Bay and South Bay by the Scaur, a peninsula 300 ft. high. It is 42 m. from York on the L.N.E.Rly. It consists of an old town and a new town, connected by bridges. The old town rises in terraces from the bay, and behind is Oliver's Mount. The buildings include S. Mary's church, the earliest parts of which date from the 13th century, S. Martin's, and the ruins of the castle. The town has a tidal harbour, and does a coasting trade, while fishing is carried on. Excavations at the castle revealed the fact that Scarborough was once a Roman station. During the Great War Scarborough was shelled by the Germans. Market day, Thurs. Pop. 46,179.

Earl of Scarborough is a British title held by the Lumley family since 1690. The founder of the family was Sir Richard Lumley, an ardent royalist who was made an Irish viscount in 1628. His grandson Richard, 2nd viscount, was a staunch adherent of William III, who created him earl in 1690.

SCARBOROUGH LILY (*Vallota purpurea*). Bulbous herb of the order Amaryllidaceae, native of S. Africa. The strap shaped leaves arise direct from the large bulb, and are two or three feet in length. The flowers are borne in an umbel at the top of a straight, leafless stem, as long as the leaves. They are large, funnel-shaped, and of a rich scarlet colour.



Scarborough Lily. Flowers of the S. African plant

SCARLATTI, ALESSANDRO (1659-1725). Italian composer. Born at Trapani, Sicily, his first known opera, *L'Errore Innocento*, was produced in Rome, 1679. He became master of the court music at Naples, 1684; returned to Rome, 1702, and again to Naples, 1713, where he enjoyed great success, and where he died, Oct. 24, 1725. He was a prolific composer, writing over 100 operas. Notable among them are *La Rosaura*, 1690, *Pirro e Demetrio*, 1694, *Mitridate Eupatore*, 1707, *Tigrane*, 1715, and *Griselda*, 1721. Scarlatti wrote also some 500 chamber cantatas, and some fine church music. See Opera.

SCARLET FEVER. Acute infectious disease. The micro-organism presumably responsible has not yet been identified. The affection occurs in all parts of the globe, 90 p.c. of the cases occurring in children under 10 years of age. The infective agent is probably given off in the secretions of the nose, throat, and air passages. The incubation period is from one to seven days. The onset is generally sudden, with vomiting, rapid rise of temperature, which may reach 104° or 105°, and, not infrequently, convulsions. Usually on the second day a rash, in the form of scattered red spots, appears, and spreads rapidly until it involves the entire skin, giving it a vivid scarlet hue. It disappears as a rule by the seventh or eighth day.

Wherever possible, the patient should be sent to an isolation hospital. The diet should be light. With high fever, sponging with tepid water or a cold pack may be necessary. When desquamation begins, the skin should be well rubbed every day with carbolised vaseline. The child should not be permitted to come in contact with other children for at least eight weeks.

SCARPE. River of France. It rises a few miles E. of St. Pol, in the dept. of Pas-de-Calais, flows E., and is joined by the Deule some miles W. of Arras. Thence canalised, it flows N.E. past Douai, and joins the Schelde near the Belgian frontier just N. of St. Amand.

BATTLE OF THE SCARPE. The British moved along the Arras-Cambrai road on Aug. 17, 1918, and thereafter advanced to the N. and S. of the Scarpe. On Aug. 26 they attacked along both banks of the river, and to the N. reached the outskirts of Roeux, while to the S. Canadian divisions took Orange Hill, Wancourt, and Monecy. By Aug. 28



Scarborough. Beach and harbour of the Yorkshire coast resort

Croisilles and Hardecourt had been taken, and the Germans were in retreat at most points of the front. The battle then died down in local attacks until the great attack of Sept. 2 inaugurated the second phase of the fifth battle of Arras. See Arras.

SCARRON, PAUL (1610-60). French author. Born in Paris, he was ordained priest, spent his youth in dissipation, and about 1637 was attacked by a terrible disease which

left him a helpless cripple. In his last eight years he was carefully tended by his young wife, afterwards Madame de Maintenon. Though his humour found scope in farcical comedy, e.g. *Jodelet*, 1645, it mainly took the form of burlesque, as in his best known work, *Le Roman Comique*, 1651-57, written in reaction against the aristocratic romances of the salons. Scarron died Oct. 7, 1660.



Paul Scarron, French author

SCAUP (*Fuligula marila*). Wild duck, winter migrant to Great Britain. The plumage is glossy black on the head, neck, and back, brown on the wings and tail, and white beneath in the male; the female being more soberly garbed in brown, grey, and white. It is common around the coasts and at the mouths of rivers in winter.

SCENT. In botany, an odour possessed by the essential or volatile oils of plants. The oil is contained in minute sacs, and is to be found in almost any part. The scent of flowers serves as an attraction to insects; hence flowers that attract by their size or brilliant colour possess, as a rule, little or none. In other plants the scent acts as a protection against destructive insects. The oils are extracted and prepared in various ways, to make scents or perfumes.

Scent is also possessed by animals, but only that of the castor, civet, musk-deer, and whale, which yields ambergris, is used industrially. In a dog, the power of following a trail by sense of smell is termed its scent. See Fox Hunting; Smell.

SCEPTRE (Gr. *skeptron*, staff). Staff used as an emblem of authority, especially of sovereignty. It is seen among Egyptian hieroglyphics, tipped by the lotus, the papyrus flower, or other emblem.

In the British regalia there are three sceptres, all used in the coronation ceremonies; S. Edward's staff, a long gold rod, shod with a steel spike and bearing a mound with cross; the sceptre with dove, an elaborately wrought gold staff surmounted by a dove with open wings; and a more slender staff surmounted by a globe and cross. The first two were made for Charles II. See Regalia.

SCHACHT, HORACE GREELY HJALMAR (b. 1877). German financier. Born Jan. 22, 1877, he became a banker. From 1908 to 1915 he was a director of the Deutsche Bank, after which he represented the German government in Brussels during the occupation of Belgium. From 1923-30 he was president of the Reichsbank, and, as such, he took part in the conference that led to the establishment of the Dawes plan and in the later discussions on reparations (q.v.), including those of 1929.



Schaffhausen. Falls of the Rhine, two miles below the city

SCHAFFHAUSEN. City of Switzerland. It stands on the right bank of the Rhine, 25 m. N. of Zürich. The chief edifices are the basilica, once an abbey church, the town hall, and the museum containing the city library. Electric power for the city's needs is obtained from the falls, where the Rhine descends 100 ft. by three cascades over the spurs of the Jura Mts. Pop. 16,000.

SCHARLIEB, DAME MARY ANN DACOMB (b. 1845). British surgeon. She was educated at the Madras Medical College and at the Royal Free Hospital for Women in London, graduating M.B. in 1882. The following year she returned to India and did much valuable work among native women. Later she held the post of lecturer on obstetrics to the school of medicine for women in London, and was consulting gynaecologist to the Royal Free and the South London and New hospitals for women. She was given the D.B.E. in 1926.



Dame Mary Scharlieb,
British surgeon
Elliott & Fry

SCHARNHORST, GERHARD JOHANN DAVID VON (1755-1813). German soldier. Born in Hanover, Nov. 12, 1755, in 1801 he entered the Prussian service and fought with great distinction against the French in the campaign of 1806-7. The disasters of that campaign having revealed grave defects in the military system of Prussia, a commission of reorganization was appointed with Scharnhorst at the head. As a result of the reforms due to this commission, notably the introduction of national military service, Prussia made an effective fight against the French in the next war. Scharnhorst was wounded at Lützen, and died at Prague, June 28, 1813.

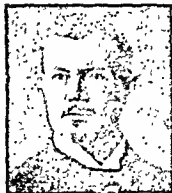
Scharnhorst was the name of a German armoured cruiser. She was the flagship of Von Spec at Coronel, Nov. 1, 1914, and was sunk in the battle of the Falkland Islands, Dec. 8, 1914. Her sister ship, the Gneisenau, was also sunk at the Falkland Islands.

SCHAUMBURG-LIPPE, Republic of N.W. Germany. Surrounded by the Prussian prov. of Hanover, its area is 131 sq. m. Bückeburg is the capital. Pop. 48,660.

Before 1918 the state was governed by a prince assisted by a landtag. After the revolution the constitution, dated Feb. 24, 1922, continued the existing landtag of 15 members. Schaumburg-Lippe originated as an offshoot of the principality of Lippe (q.v.).

SHEELITE. Mineral calcium tungstate, CaWO₄. It is white or yellow, red or green in colour, with a glassy lustre, and is also known under the name of tungsten, its chief constituent. The mineral is found in Cumberland, Bohemia, Hungary, N. America, etc., in tin-bearing veins and occasionally associated with gold. It is mined for its metal tungsten (q.v.).

SCHERER, REINHOLD VON (1863-1928). German sailor. He served in the cruiser Bismarck, 1884-86, in 1909-11 was chief of the staff to von Holtzendorf when the latter commanded the High Sea Fleet, and was commanding a battle squadron at Kiel when the Great War broke out. At the end of 1915 he became commander-in-chief of the High Sea Fleet, and commanded the German naval forces at Jutland (q.v.).



R. von Scherer,
German sailor

On Aug. 11, 1918, he was appointed chief of the admiralty staff. He resigned in Jan., 1919. Scherer gave his own account of the battle of Jutland in Germany's High Sea Fleet in the World War, published 1920. He died Nov. 26, 1928.

SCHAEFFER, ARN (1795-1858). French painter. Born at Dordrecht, Feb. 10, 1795, of German extraction, he studied under his father, Johann, and in Paris under Guérin. His subject pictures, historical and religious, obtained an enormous vogue, and he also painted many portraits. He is amply represented at Versailles. Schaeffer died June 15, 1858.

SCHelde or **SCHeldt** (Fr. Eseat). River of W. Europe. It rises in France, and enters Belgium after passing Condé. It runs through the W. part of Hainault, traverses E. Flanders, and, after passing through Antwerp, enters the Netherlands near Doel. It then divides into two main streams: (1) the Hond or W. Schelde, which enters the North Sea by a broad estuary at Flushing; (2) the E. Schelde, which meets the sea about 15 m. N. of the other estuary. The two branches are connected by the passage of Sloec. The chief Belgian tributaries are the Lys, Dendre, and Rupel. Important towns on its banks include Cambrai, Valenciennes, Condé, Tournai, Oudenarde, Ghent, Termonde and Antwerp. In 1929 it was decided to drive a tunnel under the river near Antwerp. Its length is 250 m.

From early times political circumstances have caused difficulties in connexion with the navigation of the Schelde. The treaty of 1839 laid down the principle of free navigation under joint Belgian and Dutch control, but left certain rights in Dutch hands which were abolished in 1863. In 1930 the question seemed likely to be settled by making navigation free to both nations.

SCHevenINGEN. Town of the Netherlands. It lies on the North Sea coast, 3 m. N.W. of The Hague. It is the principal bathing resort of Holland. The herring fishery is important. Off Scheveningen the English defeated the Dutch under Tromp in 1653, and the Dutch under De Ruyter defeated the English and French in 1673. Pop. 27,000. Pron. Skhaven-ingen

SCHIApareLLI, GIOVANNI VIRGINIO (1835-1910). Italian astronomer. Born at Savigliano, in Piedmont, March 14, 1835, he became assistant astronomer at Milan, 1859, and director 1862, a post he held until his retirement in 1900. He was awarded the Lalande prize of the French Academy, 1868, for his work on the connexion between comets and meteor showers. Schiaparelli is best known for his discovery in 1877 of the so-called canals of Mars. He died at Milan, July 4, 1910.



Schiehallion. Scottish mountain, and village of Kinloch Rannoch

SCHIEhallion. Mountain of Perthshire. It is 11 m. W.N.W. of Aberfeldy, and has an alt. of 3,547 ft. Here, in 1774, Nevil Maskelyne conducted his important experiments in determining the earth's mean density. Pron. She-hál-ion.

SCHILLER, JOHANN CHRISTOPH FRIEDRICH VON (1759-1805). German poet and dramatist. He was born at Marbach in Württemberg, Nov. 10, 1759, the son of an army surgeon. He was educated in the first instance as a jurist, but exchanged law for medicine, and in Dec., 1780, began practice as an army surgeon in Stuttgart. In the following year his first play, *Die Räuber* (The Robbers), was published, and shortly afterwards

produced at Mannheim. Its success was extraordinary, and Schiller decided to devote himself to literature. In the following years, amidst disheartening privations, he completed two other plays. In 1787 he completed *Don Carlos*, his first drama in classical form.

Through Goethe's agency he was appointed to an unsalaried professorship in the university of Jena, and for several years he abandoned dramatic poetry in order to study history and subsequently aesthetics. In 1788 he published the first volume of a History of the Revolt of the Netherlands, and in 1791 a popular History of the Thirty Years' War: in 1795 the brilliant Letters on the Aesthetic Education of Man, and in 1796 on Naïve and Sentimental Poetry. In 1799 Schiller again turned to dramatic poetry with *Wallenstein*, a powerful historical tragedy in three parts. This was followed by a series of dramas which included *Maria Stuart*, 1800; *Die Jungfrau von Orléans* (The Maid of Orléans), 1801; *Die Braut von Messina*, 1803, a tragedy in classic form, containing some of Schiller's finest poetry; and his last work, *Wilhelm Tell*, 1804. From 1799 till his death, May 9, 1805, Schiller resided in Weimar.



Schipperke. Esme of Greta, a champion of the Belgian breed

SCHIPPERKE. Small tailless dog. It is bred in Belgium, where it is kept as a watch dog on barges. It is black in colour, with upstanding ears and a small ruff round the neck. The Schipperke was introduced into Great Britain about 1880. Pron. Skhip-per-ky.

SCHIST (Gr. skhistos, split). In geology, name given to metamorphic rocks of a fissile character. Such rocks consist of thin films or plates of certain minerals, as mica, or a fibrous one like tourmaline, tremolite, running through the main structure. Schistose rocks are found in regions where there have been great upheavals, as Scotland, Scandinavia, the Alps, Canada, etc. Pron. shist.

SCHIZOMYCETES. Class of microscopic plants known also as bacteria, fission fungi, and bacilli. They are not really fungi, though the majority possess no chlorophyll, and all of them are either saprophytes or parasites. They are found everywhere, pervading the soil, the air, the water, and the tissues of living animals and plants. See Bacteriology.

SCHLEGEL, AUGUST WILHELM VON (1767-1845). German critic and Orientalist. He was born at Hanover, Sept. 8, 1767, and in 1798 became professor of literature and art at Jena. From 1801-4 he was lecturer at Berlin. As tutor to Madame de Staël's sons, he visited Italy and Scandinavia with her, and was secretary to the crown prince of Sweden, 1813-14. From 1818 until his death, May 12, 1845, he was professor at Bonn. His translations of Shakespeare's plays, completed by Tieck, form Schlegel's chief title to fame.

His brother, Carl Wilhelm Friedrich von Schlegel (1772-1829), was a literary critic and historian of note. His lectures on the history of literature, 1814, and the philosophy of history, 1827, have both appeared in English translations. Pron. Shlay-gel.

SCHLEIERMACHER, FRIEDRICH ERNST DANIEL (1768-1834). German theologian and philosopher. He was born at Breslau, Nov. 21, 1768, and became a professor at Halle in 1804. He took a prominent part with Fichte in founding the university of Berlin, where he was appointed professor of theology in 1810. He died Feb. 12, 1834. The great task of his life was an attempt at a reconstruction of theology.



Friedrich von Schlegel, German poet
after L. Simanovitz

SCHLESWIG-HOLSTEIN. Province of Prussia. It occupies the southern part of the peninsula of Jutland and covers 5,815 sq. m. Its capital is Schleswig, but Kiel is the largest town. The Kiel Canal cuts through the province, which includes Fehmarn in the Baltic and some of the Frisian Islands. Before 1919 the province included the northern part of Schleswig, which, by plebiscite in 1920, voted for inclusion in Denmark. Pop. 1,520,000. See Slesvig-Holstein Question.

SCHLEY, WINFIELD SCOTT (1839-1911). American sailor. Born Oct. 9, 1839, he served in the navy during the Civil War. Commanding the third Greely relief expedition to the Arctic Ocean in 1884, he rescued Greely near Cape Sabine. In 1898 he commanded the flying squadron and played a prominent part in the battle of Santiago. Severe criticism was passed on his tactics there, and immediately after his retirement from the service in 1901 Schley caused the matter to be submitted to a court of inquiry, which decided against him. He died Oct. 2, 1911. Pron. Sly.

SCHNEIDER TROPHY. International seaplane race. The trophy was given by Jacques Schneider with the object of developing marine aircraft. It was an annual affair until 1927, when it was decided to hold it every two years. In 1929 it was won by Flying Officer Waghorn on a Supermarine S6 seaplane. His speed was 328.63 miles per hour. The first race took place in 1913, and Great Britain won it in 1914, 1922, 1927, and 1929.

SCHNITZLER, ARTHUR (b. 1862). Austrian dramatist. Born in Vienna, May 15, 1862, he studied medicine and practised as a doctor there. He then made a success with his witty series of short plays of Viennese life, *Anatol*, 1893, paraphrased for the English stage by H. Granville Barker, 1911. Other plays include *Liebelel*, 1896, Eng. trans. 1914; *Reigen*, 1896-97; *Der Grüne Kakadu*, 1899, Eng. trans. 1913; *Lebendige Stunden*, 1902; *Die Schwestern*, 1919; and *Der Gang zum Weiher*, 1926. His fiction includes short stories, *Die Frau des Weisen*, 1898; *Bertha Garlan*, 1900, Eng. trans. 1913; *Frau Beata und ihr Sohn*, 1913; *Fräulein Else*, 1924, Eng. trans.; and *Spiel im Morgengrauen*, 1927.

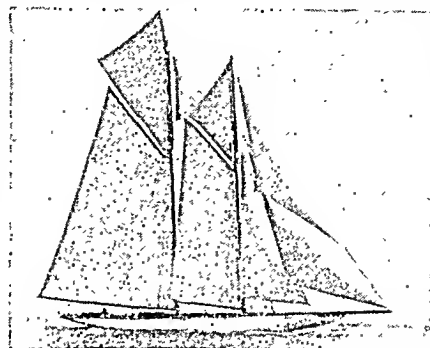
SCHOLARSHIP. Term employed in two principal senses: for the qualities of a scholar, and also for an endowment to enable a student to continue his studies. The colleges of the older English universities all have scholarships, some endowed by the founder and others of later date. The scholars, who are chosen after competitive examination, receive an annual grant, usually for three or four years, and discharge certain duties, such as reading the lessons in chapel. Scholarships are also offered by the newer universities, by technical and other colleges, by public schools, and by education authorities to enable pupils to pass from elementary to the secondary schools. All these are awarded after competitive examination. In Scotland a scholarship is called a bursary.

SCHOLASTICISM. The doctrines of the scholastics or schoolmen, the philosophical and religious teachers of the Middle Ages. The history of scholasticism may be divided into two main periods. During the first (9th to 12th century) its activity was at first devoted to the reconciliation of the claims of faith and reason. The close study and analysis of the language of the classical writers and the fathers of the Church led to an inquiry into the nature of the different elements of which language was composed, which resulted in the strife between nominalism and realism.

In the second period, metaphysics took its place as the equal, if not the superior, of religious dogma, and led on the one hand to mysticism, on the other to the study of natural science. The old struggle between nominalism

and realism (Scotists and Thomists), and the progress of science gradually brought about the downfall of scholasticism.

SCHÖNBRUNN. Public building in Vienna, until 1918 a residence of the emperor of Austria. The present building, built on the site of two earlier ones, was begun in 1696, and was henceforward a regular residence of the emperors. The palace contains about 1,500 rooms, and gardens of over 700 acres.



Schooner Racing schooner under full sail

SCHOONER (Scot. *scoon*, to skim). Name for a sailing vessel. There are two-masted, three-masted and four-masted schooners; also schooner yachts. Two-masted schooners have square topsails on the foremast. Three-masted schooners may be either fore and aft rigged on all masts, or "jackass" rigged, when they have square sails on the foremast. Four-masted schooners are fore and aft rigged throughout, and sail very quickly.

SCHOPENHAUER, ARTHUR (1788-1860). German philosopher, the apostle of pessimism. He was born at Danzig, Feb. 22, 1788. After studying at Göttingen and Berlin, he graduated at Jena in 1813. In 1820 he became lecturer at Berlin University, but failure as a teacher and the outbreak of cholera in 1831 caused him to remove to Frankfurt-on-Main, where he lived until his death, Sept. 21, 1860.



Arthur Schopenhauer, German philosopher. After Göbel

Schopenhauer's chief work, *The World as Will and Idea*, 1819, starts with the proposition that the world is only an intellectual phenomenon, objective only in reference to the knowing subject. Life is continual suffering. Art, and a moral life based on sympathy, are palliatives, but will not put an end to suffering. The only hope seems to lie in the destruction of the will to live by extreme asceticism, and, if this fails, retirement from the world into Nirvana.

Schreckhorn. Peak of the Bernese Oberland. It rises to an alt. of 13,385 ft. The Klein Schreckhorn is 1,910 ft. lower.

SCHREINER, OLIVE (Mrs. Cronwright-Schreiner) (1862-1920). Novelist and feminist advocate. She was born in Basutoland, daughter of a Lutheran missionary. The Story of an African Farm, 1883, published under her pseudonym of Ralph Iron, attracted great attention. Her other stories include *Dreams*, 1891; and *Trooper Peter Halket*, 1897. In *An English South African's View of the Situation*, 1899, she upheld the Boer position. *Woman and Labour*, 1911, deals with feminism. She died Dec. 12, 1920.



Olive Schreiner, S. African novelist. Elliott & Fry

Her brother, William Philip Schreiner (1857-1919) entered the Cape House of Assembly in 1893. He was attorney-general in Rhodes's second ministry, but left office on the fall of the Rhodes administration in 1896. Prime minister in 1898, he held office until 1900. In 1914 Schreiner became high commissioner in London for the Union of S. Africa. He died June 28, 1919.

SCHUBERT, FRANZ PETER (1797-1828). Austrian composer. Born at Lichtenthal, near Vienna, Jan. 31, 1797, in 1808 he entered the royal chapel choir at Vienna, and his first known composition was a pianoforte fantasia written in 1810. He studied theory under Antonio Salieri (1750-1825), and his first Mass was sung in 1814. Schubert's life was a struggle against adversity; but his prolific genius was undaunted, and, living chiefly in Vienna, he continued to produce all kinds of work until his death, Nov. 19, 1828.

His work includes eight symphonies, one the famous "unfinished," and over 30 other orchestral works; six Masses; 17 operas, four fragmentary; string quartets, quintets, and trios; sonatas, impromptus, and short solos for piano; many cantatas and part-songs; and, in addition, over 600 lieder or songs.

SCHUMANN, ROBERT ALEXANDER (1810-56). German composer. Born at Zwickau, Saxony, June 8, 1810, he was educated at Leipzig and Heidelberg, studying music, but also reading much philosophy and literature. An accident to his hand prevented him from undertaking a pianist's career, and from 1831 he devoted himself to composition. Up to 1840, Schumann composed only pianoforte music, notable works being *Papillons*, some sonatas, and *Carnival*;



Robert Schumann, German composer

after that year he produced his famous lieder, orchestral music, and chamber music. He became professor of composition at Leipzig conservatoire in 1843. In 1853 insanity showed itself, and an attempt at suicide, 1854, led to his confinement in an asylum at Endenich, near Bonn, where he died July 29, 1856.

His wife, Clara Josephine Schumann (1819-96), was a pianist of wide accomplishment and interests. She first played on the platform in 1823, and appeared successfully in Paris in 1832. She married Robert Schumann in 1840, appearing in London for the first time shortly before his death, 1856, and playing there frequently between 1865-88. From 1878-92 she taught the pianoforte at the Hoch Conservatoire, Frankfurt, and had many distinguished pupils.

SCHWARZ, BERTHOLD (d. c. 1380). German monk, to whom was wrongly attributed the invention of gunpowder. He was probably born at Freiburg-in-Breisgau, early in the 14th century, his name being originally Konstantin Aneklitzen. He is supposed to have disposed of his invention of heavy artillery weapons to the Venetians in 1378, and an old tradition says that, as a punishment for his dangerous ingenuity, he was blown up with gunpowder by order of the emperor Wenceslas.

SCHWEINFURTH, GEORGE AUGUST (1836-1925). German explorer. Born at Riga, Dec. 29, 1836, he went to Egypt in 1868, and the following year undertook a journey to Khartoum. He explored the oases of the Libyan desert in 1874, and his observations then led him to visit many of the oases of Arabia



Franz Schubert, Austrian composer. After C. Jaeger

of whose flora he made a profound study. Other regions explored by him included the White Nile and Barca coast. His principal work is *Im Herzen von Afrika*, 1871, Eng. trans. 1873. He died Sept. 20, 1925.

SCHWERIN. Town of Germany, capital of the republic of Mecklenburg-Schwerin. It is picturesquely situated on the lake of Schwerin, 38 m. S.E. of Lübeck. The cathedral, dating mainly from the 15th century, is in the Baltic Gothic style. The palace of the former grand dukes is on a small island on the site of an old Wendish fortress. Pop. 48,157.

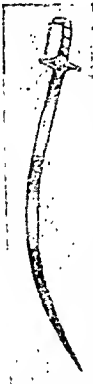
SCIATICA (Gr. *ischiadikos*, from *ischion*, hip joint). Painful affection of the sciatic nerve. It is most frequent in adult males, particularly those who suffer from gout or rheumatism. Exposure to cold and wet is sometimes the cause. The pain is felt at the back of the thigh, and in severe cases may extend down to the foot. In prolonged cases there is wasting of the muscles, and the hip and knee joints may become permanently bent.

SCILLY ISLES. Group of islands off the coast of Cornwall. They lie about 25 m. from Land's End, and have a total area of 6½ sq. m. The group consists of St. Mary's, Treco, St. Martin's, St. Agnes, Bryher, Gugh, and Samson, and about 30 smaller ones, and there are about 100 islets. Hugh Town, the capital, is on St. Mary's, where is also Star Castle, an Elizabethan fortress. The climate is mild and equable. Many sea birds haunt the islands. The inhabitants are largely employed in growing flowers and vegetables for the English market, and in fishing. The islands form part of the county of Cornwall. Steamboats sail regularly from Penzance to Hugh Town.

The islands are supposed by some to have been the *Cassiterides*, or tin islands, of the ancients. Legend associates them with *Lyonesse* (q.v.). Pop. 1,749. See Cornwall.

SCIMITAR (Per. *shimshir*). Short Oriental sword of peculiar shape. Its blade, which broadens from the handle, is one-edged and much curved, the cutting edge coming to a point, while the heavy back is considerably shorter. See *Sword*.

SCIPIO, PUBLIUS CORNELIUS (d. 211 B.C.). Roman general. When Italy was invaded by Hannibal, Scipio endeavoured to check his progress, but was defeated at the battle of Ticinus in 218 B.C. Thereupon he proceeded to Spain, where, with his brother Gnaeus, for the next few years he kept the Carthaginians so busy that they were unable to send reinforcements to Hannibal. The two brothers, however, were defeated in 211 by Hasdrubal.



Scimitar. One-edged sword of Turkish pattern

SCIPIO, PUBLIUS CORNELIUS, known as **SCIPIO AFRICANUS** MAJOR (237-c. 183 B.C.). Roman general. On the outbreak of the second Punic War in 218 B.C. Scipio fought in the Roman armies, and so distinguished himself that in 210 he was chosen by the popular voice to take the command of the Roman army in Spain, and in three years destroyed the Carthaginian power. On his return to Italy, in 206, he urged a direct attack upon Carthage itself. He was made consul in 205, organized his forces, carried them to Africa in 204, destroyed the forces of Syphax, the great ally of the Carthaginians, and on Oct. 19, 202, met



Scipio Africanus Major, Roman general

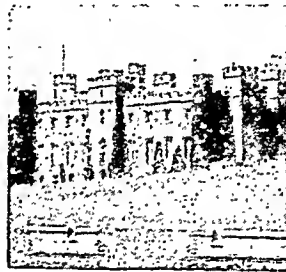
Hannibal himself and annihilated his army in the decisive battle of Zama. For this Scipio was awarded the title of *Africanus*.

His brother, Lucius Cornelius, also a Roman general, defeated Antiochus at Magnesia in 190 B.C., and gained the surname of *Asiaticus*.

SCIPIO, PUBLIUS CORNELIUS, known as **SCIPIO AFRICANUS MINOR** (c. 185-129 B.C.).

Roman general and statesman. When the third Punic War broke out in 149 B.C. he at first served in a subordinate capacity, but after his consulship in 147 was given the governorship of Africa, and took Carthage in 146. In 134 he was appointed governor of Spain, and ended the war raging there by the taking of Numantia (133). After the death of his brother-in-law, Tiberius Gracchus, the reformer, Scipio was prominent in the opposition to the commissioners appointed to carry out his agrarian reforms. This brought him great unpopularity, and one morning he was found dead. Scipio was a generous patron of letters.

SCONE. Town of Perthshire, Scotland. It is on the left bank of the Tay, 2 m. from Perth. In the 8th century Scone was the



Scone, Scotland. The palace, rebuilt about 1800

Pietish capital, and it was long the coronation place of the Scottish kings. In 1651 Charles II was crowned here. From its ancient abbey, destroyed in 1559, the stone of destiny was carried to Westminster in 1296. The palace passed to the ancestors of the earl of Mansfield (q.v.), and was rebuilt about 1800, the hall in which Charles II was crowned being retained. Pop. 2,936. Pron. Seoon.

SCORE. In music, the simultaneous presentation of the constituent parts of a composition. A full or orchestral score gives the parts for all the instruments, each on its proper staff. The instruments are grouped according to character, and arranged in each group according to pitch. The plan of the average full score is, beginning at the top, (a) wood wind, (b) brass wind, (c) percussion, (d) strings. If vocal parts are included, they are placed in the string group, between the violas and the violoncellos. An organ part would come lowest of all.

SCORESBY, WILLIAM (1789-1857). British explorer. The son of a whaler, he was born Oct. 5, 1789, near Whitby, and at an early age made voyages with his father. He was mate on his father's vessel, the *Resolution*, in 1806. From then until 1822 the two Scoresbys continued their voyages; in the latter year the younger one made an accurate chart of the E. coast of Greenland which completely changed the existing knowledge of those regions. After a voyage to Australia in 1856, to make observations in terrestrial magnetism, he died March 21, 1857.

SCORPION (Lat. *scorpio*). Eighth sign of the Zodiac. The claws of the constellation occupy the space called *Libra* by the Romans.

The chief star of the constellation is Antares, a first magnitude red star. It is a double star, possessing a green companion of the seventh magnitude. The constellation of scorpion has been remarkable for its new stars. See *Constellation*; *Zodiac*.



Scorpion from Central Africa, showing the sting at end of the tail

of the abdomen, bears a venomous sting, and is usually brought forward over the back of the body. The sting can inflict a serious wound. Scorpions lurk during the day under stones, and range at night in search of their prey, small insects and spiders. The young are brought forth alive. See *Arachnida*.

SCORPION FLY (Panorpidae). Family of neuropterous (nerve-winged) insects. They have a slender body that can be turned up at the extremity

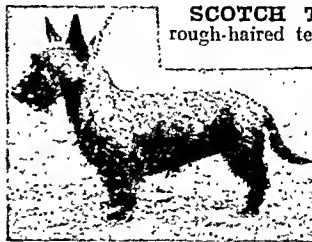
somewhat like the tail of a scorpion. The mouth parts are developed into a beak. The common scorpion fly (*P. communis*), which is found in Britain, is black in colour and half an inch long. See *Insect*.



Scorpion Fly. *Panorpa communis*, common British species

SCORZONERA (*S. hispanica*). Perennial edible-rooted plant of the order *Compositae*. It was introduced into Great Britain from S. Europe, where it grows wild, in 1576. The roots are parsnip-shaped, and white fleshed, with a dark skin. *Scorzonera* is cultivated in much the same way as salsify (q.v.). It has a sweet, sugary flavour, and may be cooked in the same way as salsify, or boiled like other root vegetables.

SCOTCH TERRIER. Small breed of rough-haired terrier. One of the hardest of domesticated breeds, the Scotch terrier is a determined hunter, and is one of the best raters. It has exceptionally large teeth for a dog of its size, and was formerly in use for hunting the fox among the rocks in the Highlands. See *Terrier*.



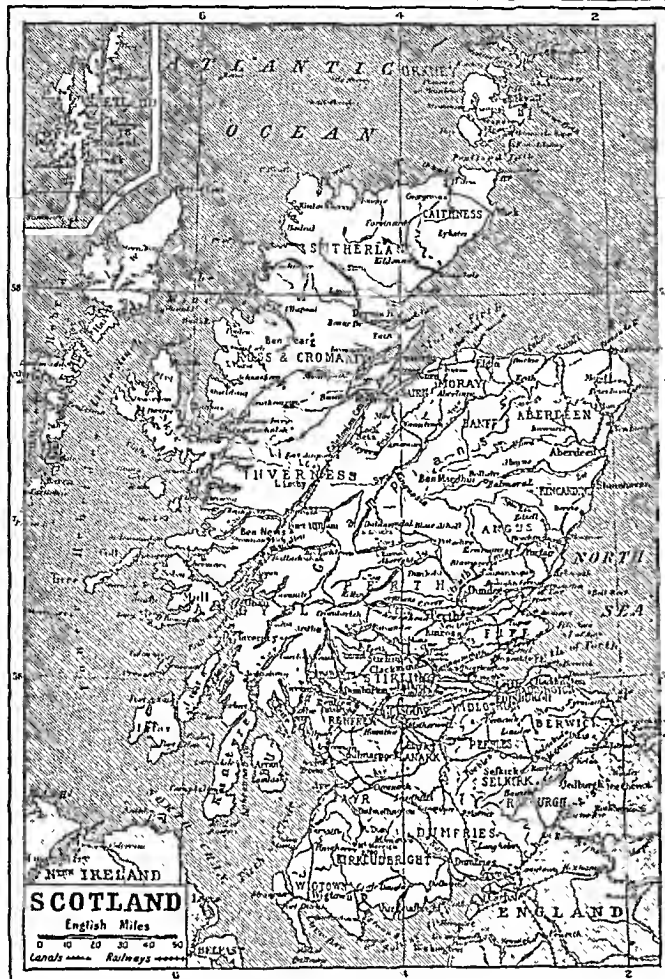
Scotch Terrier. One of the hardest and keenest breeds of terrier

SCOTER (*Oedemia*). Genus of wild ducks, of which three species occur in Great Britain. The plumage is black and glossy, in some species spotted and barred with white. The common scoter (*Oedemia americana*) measures 20 ins. in length, and is very

numerous about the coasts of Great Britain in the winter. Marine in habit, it is an accomplished diver and a deep-sea feeder. The velvet scoter (*Oe. fusca*) has a white patch behind the eye and a white bar across the wing. The surf scoter (*Oe. perspicillata*) is only an irregular visitant to Great Britain.



Scoter. Specimen of British wild duck



Scotland. Large scale maps are also given under the headings of the counties

SCOTLAND. Northern portion of the island of Great Britain. It has an area of 30,405 sq. m., of which 609 sq. m. are water. On the average the land is about 1,500 ft. above sea level, while a number of heights rise above 4,000 ft., the culminating point being Ben Nevis, 4,406 ft. The country includes beautiful lochs and glens and many islands, among them the Hebrides, Orkneys, and Shetlands. Edinburgh is the capital.



Royal arms

Scotland is divided into 33 counties, and in 1929 its population was estimated at 4,897,000. Of these about 10,000 speak Gaelic only and 150,000 speak English and Gaelic. In 1923 the railways were amalgamated with the English companies. The L.M.S. and L.N.E. serve Scotland. The canals include the Caledonian, the Crinan, and the Forth and Clyde. The Bank of Scotland was established by the parliament of Scotland in 1695.

ADMINISTRATION, ETC. The union of the crowns of England and Scotland in 1603, and to a greater extent the union of the parliaments in 1707, brought about changes in the government of Scotland in the direction of bringing it under the authority of England, but in many respects the kingdom retains its own system of government. Under the Act of 1918 it is represented in the Parliament of the United Kingdom by 74 members, of whom 38 represent the counties, 33 the burghs, and 3 the universities; 16 Scottish peers, elected by their fellows, sit in the House of Lords. Although no longer the seat of a parliament.

retains its clan spirit, and the number of clans and septs preserving their historic continuity is about 60. While the kilt is principally known at the present day as the dress of the Highland regiments, it is worn by sportsmen, and kilts and kilts are a prominent feature at the Highland Gatherings held in the autumn at Braemar, Perth, Aboyne, and elsewhere. At these games contests which range from tossing the oar to Highland dances are leading features. In recent times there has been a strong movement in favour of a revival of the Scottish vernacular and a demand for Home Rule has arisen. See Braemar; Clan.

HISTORY. In early days Scotland was inhabited by Celtic tribes, who may be divided into two groups. One lived beyond the Forth of Clyde and the other on the English side of that natural boundary line. Of these tribes the Picts were perhaps the most powerful, but it was the Scots, a Celtic people from Ireland, who gave their name to the land. In 843 Kenneth MacAlpine, a Scot, became king of the two peoples and the kingdom of Scotland was founded.

In 1057 Malcolm Canmore, a descendant of Kenneth, became king. He married an English princess, Margaret, and was killed, after a successful reign, while attacking Alnwick in 1093. Three of his sons succeeded in turn to the throne. Later came Alexander III, who defeated the king of Norway at Largs in 1263.

When Alexander died in 1286 the throne passed to a grand-daughter, Margaret, the maid of Norway. She died in 1290, and a period of unrest began. Many claimants for the crown appeared, and Edward I of England,

Edinburgh is the capital and contains the government offices. For the general control of Scottish affairs by the government there is a secretary, who since 1926 has ranked as a secretary of state.

Scotland retains its own legal system, which is quite different from that of England, although there is an appeal to the House of Lords and the lord chancellor acts for all Great Britain. The chief court is the court of session, which is divided into two houses, inner and outer. Its ecclesiastical system, too, is quite different. Its established church is Presbyterian in doctrine and government.

The local government system of Scotland was remodelled as far as the burghs were concerned in 1835, and for the counties in 1889 and 1895. The burghs, which may be divided into three classes, royal, parliamentary, and police, were placed under elected councils.

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who claimed to be overlord of Scotland, was asked to decide between them. He awarded the crown to John Balliol, but the chief result was to arouse a strong spirit of nationality. The first leader, Sir William Wallace, was defeated and hanged, but under the second, Robert Bruce, the independence of Scotland was definitely secured in 1314, after the defeat of the English at Bannockburn.

Between the death of Robert Bruce in 1329 and the accession of Charles I in 1625 all but two out of the ten monarchs who wore the Scottish crown were children at the date of their accession, unless we except also James IV, who was in his 16th year. The two exceptions were Robert II and Robert III, both of whom were over 50. Therein lies the key to the fact that a strong central government was never established; every minority was a period of strife.

Robert Bruce was succeeded in 1329 by his infant son David II, who, a few years later, was driven out by a rival, Edward Balliol. He returned in 1341, and in 1346, when invading England, was taken prisoner at Neville's Cross. Released on payment of a considerable ransom, he died in 1371, and was succeeded by his nephew Robert, the steward of Scotland. He was the first king of the Stuart line.

The reigns of five kings of the name James occupied the century and a half between the death of Robert III in 1406 and the accession of Mary. This was the time when the alliance between France and Scotland was cemented by a common hostility to England, and when the Douglasses were sometimes as strong, even stronger, than the king himself. Mary's son, James VI, grew up in an atmosphere of turmoil, which lasted until he left the country to become king of England in 1603.

The crowns of England and Scotland were now worn by the same individual, but for a century more the two countries remained in every way independent. The religious policy of Charles I incensed his Scottish subjects, and in 1643 an army marched into England to join the parliamentarians. While it was fighting there other Scots under Montrose took up arms for the king, but the covenanting party became supreme. They soon broke away from their English allies and had no part in the execution of Charles I, after which event they accepted Charles II as their king. Cromwell, however, by his victories at Dunbar and Worcester, made him a fugitive.

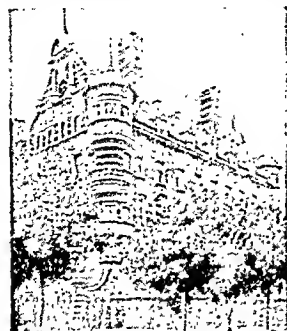
The restoration of Charles II in 1660 was followed by the ascendancy of the episcopal church and the persecution of the Covenanters, a policy continued during the reign of James II. Anne's reign was notable for the union of the parliaments, accomplished with difficulty in 1707. The rising of the Jacobites in 1715 revealed in Scotland the existence of a strong feeling of loyalty to the exiled Stuarts and hostility to England. In 1745 there was another rising, which failed, and after it the Highland clans were deprived of their special position and gradually settled down to share in the normal life of the country. See Edinburgh; Glasgow; James VI; Mary.

SCOTLAND, CHURCH OF. Established Church of Scotland. A Presbyterian body, it dates from the Reformation. In 1560 the Scottish parliament made Protestantism the official religion of the country. Under the influence of John Knox the beliefs of the new Church were laid down in a confession of faith, and during the next few years its organization on the Presbyterian model was established. The General Assembly, its governing body, dates from this time.

The movement for a union between the Church of Scotland and the U.F.C. was accelerated by the passing in 1925 of an Act dealing with the endowments of the established Church. In March, 1928, the general assemblies

of the two Churches approved the proposed union. The first general assembly of the re-united Church met on Oct. 2, 1929. See Free Church of Scotland; Knax; Presbyterianism.

SCOTLAND YARD. Familiar name for the headquarters on the Thames Embankment of the Metropolitan Police in London, more correctly described as New Scotland Yard.



Scotland Yard, London. Headquarters of the Metropolitan Police

SCOTS FUSILIERS, ROYAL. British regiment. It was raised in Scotland in 1678, and took its place in the line as the 21st Foot. It fought at the battles of Steenkirk and Landen, and through Marlborough's campaigns of 1702-12. Having served in America and against Napoleon in several war areas, the Fusiliers took part in the Crimean War, and shared in the Zulu, Boer, and Burmese Wars.

In the Great War it had five territorial, one service, one garrison, in addition to its three regular and special reserve battalions. The regimental depot is at Ayr.



Scots Fusiliers badge

SCOTS GREYS, ROYAL. Also known as the 2nd Dragoons, this regiment was raised in 1678. They fought under William of Orange in Flanders, and under Marlborough won their great fame: since then they have been known, on account of the grey horses which they rode, as the Scots Greys. The Greys were at Waterloo, rode with the Heavy Brigade at Balaklava, and went right through the South African War. In the Great War the regiment fought both as cavalry and dismounted. See Dragoon.



Scots Greys. Trooper in review order

and at the Union of 1707 were added to the British Army. They were known for a time as the Third Guards, and from 1831-77 as the Scots Fusilier Guards; since the latter date they have had their present name. Their fighting record includes service in Flanders under William III and Marlborough; at Dettingen and Fontenoy; and in the Peninsular War. The guards were at Quatre Bras and Waterloo and later in the Crimea. The regiment



Scots Guards badge

has a fine record of service on the western front in the Great War.

SCOTT, CHARLES PRESTWICH (b. 1846). British journalist. Born at Bath, Oct. 26, 1846, and educated privately and at Corpus Christi College, Oxford, he was editor of The Manchester Guardian from 1872 to 1929, and more than anyone else gave that journal its distinctive character. In 1929 he resigned his editorship, but remained governing director of the paper. He was Liberal M.P. for the Leigh division of Lancashire, 1895-1906.

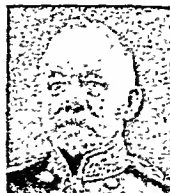
SCOTT, CLEMENT WILLIAM (1841-1904). British dramatic critic. Born in Hoxton, Oct. 6, 1841, and educated at Marlborough, he began life as a clerk in the war office. Soon, however, he drifted towards journalism and dramatic criticism, and eventually became dramatic critic to The Daily Telegraph. He died June 25, 1904. Scott was the originator of a more picturesque style of criticism than former generations had known; but though his opinions carried weight, his work was often marred by personal prejudice.

SCOTT, SIR GEORGE GILBERT (1811-78). British architect. The son of a clergyman, he was articled to an architect in London. His buildings include the Martyrs' Memorial at Oxford, the station and hotel at St. Pancras, the buildings of Glasgow University, and the Albert Memorial. He did an immense amount of restoration work on English cathedrals and churches. He was elected A.R.A. in 1855 and R.A. in 1861. Scott, who was knighted in 1872, died March 27, 1878.

SCOTT, SIR GILES GILBERT (b. 1880). British architect. A grandson of Sir G. G. Scott, he was born Nov. 9, 1880, and educated at Beaumont. Trained as an architect, he specialised in ecclesiastical art, and in 1902 was the successful competitor with his designs for the new cathedral at Liverpool. In association with G. F. Bodley (q.v.) he supervised the work, and in 1924 he was knighted. In 1918 Scott was made A.R.A. and in 1922 R.A. His other work includes several churches and college buildings at Cambridge.

SCOTT OR SCOT, MICHAEL (c. 1200). Scottish wizard. The facts of his life are obscure, but it is believed that he was of a Fifeshire family and studied at Oxford and in Paris. At Toledo he apparently gained sufficient knowledge of Arabic to translate a portion of Aristotle into Latin from an Arabic version. According to Italian traditions he died in Italy, but according to other accounts, which Scott follows in The Lay of the Last Minstrel, he returned to Scotland and was buried in Melrose Abbey.

SCOTT, SIR PERCY MORETON (1853-1924). British sailor. He was born July 10, 1853, and entered the navy in 1866. He became captain in 1893, and rear-admiral in 1905. He served in the Ashanti and Egyptian wars, and in 1899 he landed with the Naval Brigade in South Africa, and improvised the mountings for the heavy guns for Ladysmith. He was captain of the gunnery school Excellent, 1903-5, inspector of target practice, 1905-7, and commanded cruiser squadrons, 1907-9. In 1910 he was knighted and given £2,000 in recognition of his numerous inventions. In 1913 he was created a baronet, and retired with admiral's rank. He died on Oct. 18, 1924.



Sir Percy Scott, British sailor
Russell

SCOTT, ROBERT FALCON (1868-1912). British explorer. Born at Devonport, June 6, 1868, a son of John E. Scott, he entered the navy. In 1900, having just reached the rank

of commander, he was selected to lead the National Antarctic Expedition and to command the Discovery (q.v.), the exploring vessel specially built for this expedition. The expedition sailed from London in Aug., 1901, and returned to England in Sept., 1904. After his return he was also assistant-director of naval intelligence, and his final admiralty service was as naval assistant to the second sea lord.



Robert F. Scott, British explorer

Scott left England on a second polar expedition in 1910, finally sailing from New Zealand on Nov. 29 in the whaler Terra Nova. The southern journey to the Pole itself was started by a pioneer party under Lieut. Evans in Oct., 1911. Scott himself followed in Nov. with ponies and dogs. The final march was made by Scott, Wilson, Oates, Bowers, and petty-officer Evans, who continued over the great polar plateau until they reached the S. Pole, Jan. 17, 1912, only to find that they had been forestalled by Roald Amundsen, who had reached the pole barely a month before. After this bitter disappointment Scott's party was overwhelmed in a blizzard on the return journey, when he and his party perished. See Antarctic Exploration.

SCOTT, SIR WALTER (1771-1832). Scottish novelist. Born in Edinburgh, Aug. 15, 1771, son of a lawyer, he was educated at the high school and university of his native city. In 1792 he became an advocate, and in 1797 he married Charlotte Margaret Chappentier and settled in Edinburgh.

In the same year in which his Minstrelsy of the Scottish Border appeared, Scott began to write his first great poem, The Lay of the Last Minstrel. Between 1805 and 1815 he produced, besides the poem mentioned, Marmion, The Lady of the Lake, and Rokeby, with editions of classic English poets and Lives of Dryden and Swift. The poems had an enormous vogue, and there was a large income to Scott from his literary enterprises. He bought a small property on Tweedside, and began to build Abbotsford (q.v.). In 1814 he finished in three weeks two-thirds of a story, Waverley, which he had started years before and set aside. It took the public by storm, and, though The Lord of the Isles was to appear next year, it was to be his last great poetical effort. Already his supremacy as a popular poet was being usurped by Byron, and his reputation thenceforth was to depend on romantic fiction.

Novels began to pour from his pen, his industry quickened by financial embarrassments arising from the printing connexion with Ballantyne. Not for ten years was the public informed that Scott was the author of these works; the secret was known only to a very few. In the same year which brought forth The Lord of the Isles appeared Guy Mannering, written in six weeks. In 1816 he published The Antiquary, his favourite among all his novels, The Black Dwarf, and Old Mortality, and in 1817, despite a serious illness, he produced Rob Roy. The Heart of Midlothian appeared in 1818. The greater parts of The Bride of Lammermoor,



Sir Walter Scott, Scottish poet and novelist
From the portrait by Raeburn

and Ivanhoe, and the whole of *The Legend of Montrose* were dictated by the author in 1819. In 1820, in which year appeared *The Abbot* and *The Monastery*, Scott was made a baronet. There was more need than ever for unflagging industry; and in the next few years appeared *Kenilworth*, *The Pirate*, *The Fortunes of Nigel*, *Quentin Durward*, and *Redgauntlet*.

In 1826, ruined financially by his printing business engagements, he performed miracles of industry, drugged toilsomely through a long life of Napoleon, the historical Tales of a Grandfather, *The Fair Maid of Perth*, and the novel *Woodstock*. A voyage to Rome aggravated his malady; he came back a physical wreck, to die at Abbotsford, Sept. 21, 1832. He was buried in Dryburgh Abbey (q.v.). Consult *Lives*, J. G. Lockhart, new ed. 1896; G. E. B. Saintsbury, 1897; R. H. Hutton, 1896; W. H. Hudson, 1901; A. Lang, 1906; G. le G. Norgate, 1906; A. Stalker, 1921.

Scottish Rifles. Alternative name for the regiment known as the Camerounians (q.v.).

SCOUTING. The practice of the North American Indians and the Zulus of S. Africa in following trails, tracking down their foes by observing signs and using their logical faculties. Their methods have been copied by soldiers and others and used in modern warfare.

Scouting as a boys' organization was introduced into Britain by Lord Baden-Powell in 1908. It had existed in various forms in America. As part of the boys' organization scouting includes the practice of woodcraft and nature lore. The training embraces the knowledge of signs, how to track and follow, signalling, pioneering, and camp-life generally. Scouting teaches the reading and making of maps, first aid, various exercises, etc. See *Baden-Powell*, Baron; *Boy Scouts*; *Girl Guides*.

SCRANTON. City of Pennsylvania, U.S.A. It stands on the Lackawanna river, 135 m. N.W. of New York. Anthracite coal mining is the staple industry, others being the manufacture of knitted goods, lace curtains, silks, buttons, and mining and hydraulic machinery. Pop. 142,266.

SCREAMER (Chauna).

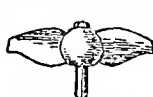
Small group of birds, including about three species, restricted to S. America. The horned screamer has a hornlike growth, about 5 ins. long, upon the forehead, and the plumage is grey and black with a greenish reflection. The other members of the order are without the horn. The birds are found in flocks about the borders of lagoons, where they make the night unmelodious with their harsh cries. Though not web-footed, they swim readily.

SCREEN. In ecclesiastical architecture, a wall of wood, metal, or stone, designed to partition off one part of a church from another. The choir, or the choir and sanctuary, being the most important part of the church, artistic ornament was lavished more freely on the screens protecting it than on any other part. This was particularly true of the rood screen shutting off the choir from the nave or transept. This was often a beautiful example of open or close Gothic workmanship, with a gateway in the centre. The rood loft was at the top of this screen, with a staircase leading to it, and the rood (cross or crucifix) conspicuously displayed over the entrance.

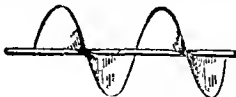
SCREEN. In printing, a ruled glass grating that is placed between the photographic plate and lens in a camera to break up the negative of the copied picture into dots of various sizes for carrying the ink on the printing surface of the resultant half-tone block,

corresponding to the light and shade in the drawing or photograph which is to be reproduced. See *Half Tone*.

SCREW. This may be defined as a solid cylinder having a helicoidal rib or thread on its surface. The invention of the screw is attributed to Archimedes, 287-212 B.C., and it was certainly in use by the Romans, notably in wine presses. Until their manufacture by machinery, however, screws were not used on



A two-bladed propeller of the older type



Sir Francis Pettit Smith's first screw propeller



Screw propeller with single revolution as first fitted to the Archimedes



Double-threaded screw propeller as subsequently fitted to the Archimedes



A modern propeller

Screw. Development of marine propeller

a large scale. It was not until 1854 that the adaptation of an American invention of 1836 made the production of cheap screws possible.

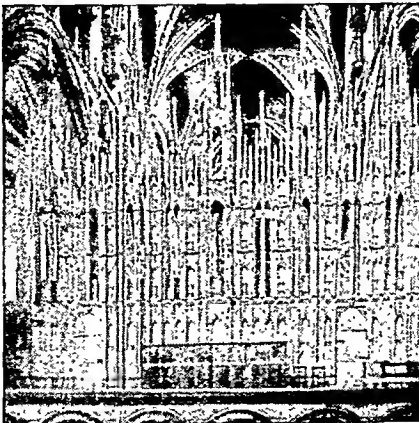
The threads of screws are rectangular, V-shaped, trapezoidal, etc. The wood screws used in carpentry, etc., are made from wire of suitable gauge. They are provided with a point to enable the wood to be entered easily, and are usually made of mild steel or iron, and from brass, copper, and zinc. Metal or machine screws are pointless, and have to be made with greater precision than wood screws.



Screamer. The horned screamer, a bird of S. America
W. S. Herridge, F.Z.S.

SCREW PROPELLER. Contrivance for propelling vessels. In 1801 a screw steamer was built and tried by an American, but it was not until the Archimedes was built, in 1838, that the advantages of the screw were established. Three-bladed screws are preferred for fast ships, four-bladed for cargo boats. Screws are usually made of cast iron or steel, or manganese or phosphor bronze.

AERIAL PROPELLERS. These are two or four-bladed, more usually two. Most propellers are shaped from a wooden block, built up out of layers of carefully selected mahogany, walnut, and spruce, glued together. A propeller is mounted on the engine-shaft direct,



Screen. East side of the altar screen in Durham Cathedral, dating from 1372-80

or on a shaft driven at less than engine speed by tooth gearing or chains. Air screws are also made of metal. See *Aeroplane*; *Ship*.

SCRIABIN, ALEXANDER NICOLAS (1871-1915). Russian composer. Born at Moscow, Dec. 25, 1871, he studied music there and taught the piano there from 1898-1903. Thereafter he lived in Paris, Switzerland, and Brussels, devoting himself chiefly to composition. He used a revolutionary system of harmony, involving the absence of the major and minor modes and the key-signature, which at first met with fierce opposition. But his orchestral work, richly orchestrated but difficult of execution, is now widely played. He exercised great influence on contemporary music, visited London in 1914, and died at Petrograd, April 14, 1915.

SCRIBE (Lat. scriba, clerk or secretary). Term used in the Bible for a writer or secretary, but more especially for the official copyists and expounders of the law of Moses. Their most important function was to give counsel and advice in all points of difficulty or doubt about the observance of the law; and they might be described as ecclesiastical lawyers. They were closely connected with the Pharisees (q.v.), the religious teachers of the nation; and their influence in N.T. days was very great. Leading scribes conducted schools or colleges, in which they taught their principles and methods to their disciples.

SCROFULA or **STRUMA.** In human beings, a complaint associated with the enlargement of the lymphatic glands in the neck. Known to be a form of tuberculosis, it is most usual in children, but is sometimes seen in adults. The treatment consists in invigorating the system with tonics and maintaining the patient's strength, while incisions to relieve suppuration are frequently desirable.

SCROOBY. Village of Nottinghamshire. It is 2 m. from Bawtry, on the L.N.E. Rly. William Brewster, one of the Pilgrim Fathers lived at the manor house.

SCRUB. Term applied to land adjacent to woodland, covered with bushy shrubs and small trees. In Britain the shrubs are mainly those of a thorny character, such as furze, blackthorn, whitethorn, wild rose, and bramble. In the S. of Europe and Asia acacias are dominant. Along the Mediterranean the scrub is known as maquis. In E. Africa, euphorbias and cacti are mixed with acacias. Australia has several sorts of scrub; the brigalow and the mallee, the cane and the nettle. The brigalow scrub consists chiefly of *Acacia excoelsa*; the mallee of *Eucalyptus dumosa*. See *Furze*.

SCRUPLE (Lat. scrupulus, a small stone). Unit of weight used by apothecaries. It is 20 grains or minims, and the twenty-fourth part of an ounce.

SCRUTINY (Lat. scrutari, to search out). In general, a close examination. In elections, a scrutiny is the examination by some recognized authority of the votes cast, so that those wrongly given may be rejected.

The French term for voting by papers or balls is scrutin. In French electoral procedure since the Revolution two alternative methods of voting have been employed with almost equal frequency. They are scrutin-d'arrondissement, or election by single member constituencies; and scrutin-do-liste, or election en bloc of all the deputies allotted to a department, which is thus the electoral unit.

SCUDERY, MADELINE DE (1607-1701). French writer. Born at Havre, Nov. 15, 1607, she became an orphan, and after a good education joined the literary circle of the Hôtel Ramhoullet in Paris. Her prolific romances, *Ibrahim*, *Artamène*, ou *le Grand Cyrus*, *Clélie*, etc., were written with the help of and in the name of her eccentric brother Georges

(1601-67). With their chivalrous adventures, high-flown sentiment, and thinly veiled allusions to personages of the day, they enjoyed immense popularity. She died in Paris, June 2, 1701.

SCULLIN, JAMES HENRY (h. 1876). Australian statesman. Born in Australia, Sept. 18, 1876, of Irish parents, he spent his early years in Bendigo, and worked in a grocery shop at Ballarat. Joining the Labour movement, he became a journalist, and started a weekly paper which later became a daily. In 1910 he was elected to the Federal Parliament, but lost his seat at the next election, and did not re-enter Federal politics until Feb. 1922. He quickly established a reputation as an effective debater, and in 1928 became leader of the Federal Labour Party. His party won the election in Oct., 1929, and Scullin became premier. In addition, he assumed the ministries for external affairs and industry. His period of office was marked by a crisis in the financial affairs of the Commonwealth, and in Oct., 1930, he attended the Imperial Conference in London. See Australia.



J. H. Scullin, Australian statesman

SCULLING. Propelling of a boat by one man, or occasionally two men, each with a pair of sculls, the blades of which are more concave than an ordinary racing oar and have shorter looms. The art of sculling differs in some degree from ordinary rowing, in which one oar only is handled by each rower and there is a cox to steer the boat. Therefore, a good oarsman is not necessarily a good sculler. Sculling demands a greater knowledge of oarsmanship and more practice.

The world's professional sculling championships have been held in various countries, a goodly number on the Paramatta river, N.S.W., over a course of 3 m. 330 yds. The championship course on the Thames is from Putney to Mortlake, and measures 4½ m. In 1930 Ted Phelps, by beating Bert Barry, retained the world championship. The amateur championship of the Thames is also sculled over this course, the event being known as the Wingfield Sculls. See Boat; Rowing.

SCULPTURE. Art of carving figures from stone, metal, etc. The palaeolithic cave dwellers, about 10,000 B.C., first carved in the round, then in relief, the animals they hunted; later they carved the forms of men, their only implements being chipped flints. The neolithic peoples for several thousand years developed no sculpture, until the Egyptians wrought figures in terra-cotta, ivory, and stone.

The wide distribution of marble in Greece gave a superb stone for carving. The invasion of Greece by the Persian armies involved great destruction, and the Greeks had to rebuild their temples. The land blossomed with art. Myron wrought his famous athletes, of which the Discobolus is famous. Polyclitus moulded his great bronzes, of which the Doryphorus was held by the ancients to give the right proportions of the male figure, hence called the canon; the weight is supported on one foot, as also in his other favourite subject, the Amazon. Pericles gave to Phidias the direction of the many sculptors who were called to build the Parthenon.

The keynote of the 5th century B.C. was serenity and calm, free from emotion. Later, sculpture developed a meditative vision. Of this age the most famous sculpture is the Winged Nikē (Victory) of Samothrace, in which the triumphant swing of the body is revealed through the flutter of wind-swept draperies. Like the Apollo Belvedere (c. 320 B.C.), which we only know in a bronze

copy, it is of the school of Scopas. Alexander conquered Athens; Greek art passed from Athens to Alexandria and Rhodes and Pergamum; and Greek sculpture thenceforth developed towards expressing tragedy and pathos and pity. The Dying Gaul (called Gladiator) of the Pergamene school was of 240-238 B.C.; the Laocoon group about 150 B.C.

Gothic and Classic meet in Italy in the feverish, restless age of the Renaissance. The realism of the great sculptor Donatello saved the art of Italy and brought virility where Giotto's pietistic insipidity had been. Verrocchio created the great equestrian statue of the age, the Colleone. Michelangelo and his art give a sense of contortion in spite of its overwhelming sublimity. Benvenuto Cellini almost frees himself from his usually restless, fussy design in his Perseus.

The 17th century saw Bernini create a new style of sculpture in Naples, one tending to sentimentality and superfluous ornament, but distinctly gracious in line. In the 18th century French sculpture rendered the grace and charm of the age, through the great masters, Pigalle and Houdon, and the exquisite modeller of feminine grace, Clodion. By 1800, Canova, followed by Dannecker, Flaxman, and Thorwaldsen, gained a wide vogue of insipidity and commonplace—a tide stemmed by the vigorous Rude. Dalou and others kept the lamp burning. Then two great masters came forth in Rodin and Mennier.

SCUNTHORPE. Urban dist. and market town of Lincolnshire, in full, Scunthorpe and Frodingham. It is 25 m. from Grimsby, on the L.N.E. Rly., with iron and steel works, etc. Market day, Mon. Pop. 27,354.

SCURVY. Disease due to a disturbance of metabolism. Scurvy was formerly very prevalent among armies in the field and sailors on long voyages unable to obtain fresh food. The gums become swollen and spongy and bleed easily. The teeth may fall out and necrosis of the jaw occur. The skin becomes dry and rough and subcutaneous haemorrhages occur, and, in addition, the spleen is enlarged and the urine contains albumen.

The essential cause of scurvy is absence or insufficiency of vitamins, which are present in minute quantities in fresh food. Treat-



Scurvy Grass. Flower-head and leaves

ment, accordingly, consists in adding to the diet articles which will supply the deficiency. Most cases are cured by giving the juice of two or three lemons daily, and plenty of meat and fresh vegetables.

SCURVY GRASS (*Cochlearia officinalis*).

Perennial herb of the order Cruciferae, a native of N.W. Europe and the Polar regions, growing near the sea and on mountains. From the root-stock many fleshy stems arise, also spoon-shaped leaves. The stem-leaves are stalkless, angled, and their bases clasp the stem. The four-petalled flowers are white. Eaten raw or as a salad, it is a valuable anti-scorbutic medicine.

SCURVY PEA (*Psoralea*). Large genus of shrubs and herbs of the order Leguminosae, natives of tropical and temperate regions. Most of the species are rough with wart-like glands. The leaves are in most cases broken up into three or five leaflets. The pea-like flowers are blue, purple, pink, or white, clustered in heads, spikes, sprays, or bundles. P. esculenta, a N.W. American species, has a turnip-shaped farinaceous root, which the French voyageurs called Pomme blanche. They are boiled for eating. P. glandulosa

(Jesuit's Tea), a native of Chile, is applied as a poultice to wounds, and an infusion of the root is emetic.

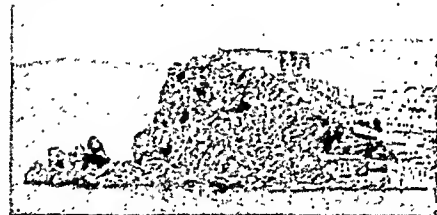
SCUTAGE. Term used to describe the money payment made by a knight in place of following his lord on military service. It comes from the Latin word scutum, a shield, and is literally shield money. As conditions of warfare changed it was often irksome for owners of land to render their customary military service; they were glad to commute it for money, and the kings often equally glad to receive this money. In England it was first paid in the time of Henry II.

SCUTARI or SKODRA. Town of Albania. Situated S.E. of Lake Scutari, it lies 12 m. from the Adriatic. It has woollen manufactures, and exports maize, tobacco, hides, and sumach. Pop. 23,800.

In the first Balkan War the town was besieged by the Montenegrins, and afterwards by the Serbians; but the place held out until April, 1913. During the Great War it was occupied at first by Montenegro, but after Serbia and Montenegro were overrun in 1915-16, it was seized by the Austrians, who held it until Oct.-Nov., 1918.

Lake Scutari, partly in Albania and partly in Montenegro, is 27 m. long. See Albania.

SCUTARI or USKUDUR. Town of Asia Minor, the ancient Chrysopolis. It lies on the Asia Minor side of the Bosphorus, opposite Istanbul, of which it is a suburb. It manufactures silks, cottons, and muslins. During the Crimean War the Turkish barracks were occupied by English troops, to whose sufferings Florence Nightingale ministered. In 1921 great damage was caused by fire. Pop. 124,555.



Scylla. Rock on the Calabrian coast where the monster of classic fable was supposed to dwell

SCYLLA. In Greek mythology, a sea monster on the Straits of Messina at the narrowest part. Opposite was the whirlpool Charybdis. Scylla had twelve feet and six heads, and snatched sailors from the decks of the ships that passed too near. Ships that tried to avoid Scylla ran the risk of being swallowed in the whirlpool of Charybdis on the other side. The town on the rock, now known as Scilla, was destroyed by earthquake in 1908. Pron. Silla.

SCYROS or SKYROS. Greek island in the Aegean Sea, one of the N. Sporades. It is 24 m. N.E. of Euboea, and has an area of 80 sq. m. It comprises two mountainous peninsulas. Goats and sheep are reared, and wine, wheat, and oranges are produced. Pop. 4,200.

SCYTHIA. Name given in ancient times to a region N. and N.E. of the Black Sea. Its

confines differed from age to age, according to Herodotus and other writers, and the term came to be applied to any barbarian, that is, non-Hellenic, inhabitants of this region. The Scythians, who appeared in the 7th century B.C., gave their name to the country, but were absorbed among the

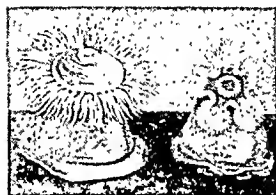


Scurvy Pea. Leaves and flowers of Jesuit's Tea

Cimmorians. From the middle of the 4th century B.C. the power of the Scythians declined before that of the Sarmatians, new invaders from the east, and by the 1st century B.C. the name Scythia had ceased to have any political significance. The Scythians of early times were a nomadic people, but gradually agriculture was developed and a smattering of Greek culture introduced.

As a people the Scythians were inclined to squattiness and corpulence. They wore tall caps, loose breeches tucked into soft boots, and skin cloaks. Their daggers, celts, bows, arrow-heads, and bowcases were such as an Altaian mounted nomad would naturally adopt. Their religion was interpenetrated by central Asian shamanism, and many social institutions and customs, hemp vapour-baths, blood brotherhood, were of nomad origin.

SEA ANEMONE. Name given to a section of the coelenterate order Anthozoa. They are abundant in rock pools on the coast.



Sea Anemone. Left, *Actinia equina*; right, *actinia dianthus*

Around the mouth they have rings of tentacles, usually forming a multiple of six. These are of the most varied and beautiful of hues, and when expanded give the animal the appearance of

a flower. Anemones feed on minute organisms, such as crustaceans, which come within reach of the tentacles, while some of the larger species can take in mussels and other molluscs, as well as pieces of dead fish.

SEA BASS (*Morone labrax*). Fish of the family Serranidae, native of S.W. Europe and the Mediterranean, extending to S. Britain and Ireland, and occasionally found farther N. It is a fine fish, 2 ft. or more in length, and weighing 15 lb. The back is bluish grey, paling to silver on the sides and white beneath. The body is compressed. The first dorsal fin has eight strong spiny rays. Young bass frequent harbours and ascend rivers, feeding upon the smaller fishes and crustaceans. The flesh is esteemed for food by some; others consider it coarse. The stone bass (*Polyprion cernaum*) is a shorter, deeper-bodied fish with the first dorsal fin long and low. See illus. p. 204.

SEA BREAM (*Pagellus centrodontus*). Marine fish of the family Sparidae. A native of the Mediterranean and the N. Sea, it occurs in coastal waters all around the British Isles, especially on the S.W. It feeds principally on sand-stars, brittle-stars, and small crabs. The young are known as chads. It is an admirable food fish; but will not bear transport to inland towns.



Sea Bream. Edible fish found round the coasts of the British Isles
W. S. Berridge, F.Z.S.

SEA BUCKTHORN or **SALLOWTHORN** (*Hippophaë rhamnoides*). Small tree of the order Elacagnaceae. A native of Europe and Asia, it has alternate, lance-shaped leaves, silvery on the underside, and dull green above. The male and female flowers are on separate plants, the males clustered, the females solitary. The latter are succeeded by small orange-coloured berries, sometimes made into preserves. Many of the branches harden into a long thorn.

SEACOMBE. Dist. of Wallasey, Cheshire. It stands on the Mersey, opposite Liverpool, on the L.M.S. and L.N.E. Rlys. Seacombe owes its growth to its proximity to Liverpool, and on the formation of the borough of Wallasey it was included therein. A ferry connects it with Liverpool. See Wallasey.

SEA CUCUMBER, BÊCHE DE MER, or TREPANG. Echinoderm resembling in appearance a large slug. The species vary in length from a few inches to 8 ft. or 9 ft., and most have the power of shrinking into a comparatively small compass. Certain species caught around the shores of North Australia are a favourite article of food with the Chinese. Several species are found on the British coast.

SEAFORD. Urban dist. and watering place of Sussex. It stands on the S. coast, 3 m. from Newhaven, on the Southern Rly. Beautifully situated on a bay sheltered by cliffs, it has good bathing and other attractions. The church of S. Leonard is mainly Perpendicular. The Ouse formerly entered the sea here. In 1928 Seaford Head was bought for the public by the urban council. Pop. 6,991.

SEAFORTH. Sea loch of Scotland. It is on the east side of the island of Lewis-Harris and forms part of the boundary between these two districts. Its length is 14 m.

The district around, also known as Seaforth, gave the title of earl to the family of Mackenzie. The title and estates were lost when the 5th earl took the side of the exiled Stuarts. In 1771 the title was revived for his son Kenneth, who raised the Seaforth Highlanders, but it became extinct on his death in 1781.

A district of Lancashire, part of the urban district of Waterloo and Seaforth, is called by this name. It stands on the Mersey, 4 m. from Liverpool, and is a seaside resort.

SEAFORTH HIGHLANDERS. Known also as the Ross-shire Buffs and the Duke of Albany's, this Highland regiment was originally the 72nd and 78th Foot. The 72nd, raised by the earl of Seaforth in 1778, served with great distinction in the Carnatic and Mysore campaigns in 1780, and with the 78th in the Maratha War, 1803-4. For special gallantry at Assaye the regiment was given a third colour. It added to its fine record in the Crimean War, and saw service in the Persian War, 1856-57, and in the Indian Mutiny. It next served in the Afghan War, 1878-80, and accompanied Lord Roberts in his march to Kandahar. Further battle honours were gained in Egypt, 1882, the Chitral War, 1895, and in the Sudan, 1897-98. In the South African War the regiment incurred heavy losses. During the Great War, 1914-18, about 50,000 Seaforth Highlanders were engaged, gaining many distinctions. The regimental depot is at Fort George.



Seaforth Highlanders badge

SEAHAM HARBOUR. Seaport and urban dist. of Durham. It is 5 m. from Sunderland, on the L.N.E. Rly. There is a modern harbour, from which coal is shipped, and here are blast furnaces, iron foundries, chemical and bottle factories, and motor lorry works. Seaham was a village until the opening of the coal mines. About 1823 the marquess of Londonderry began work on a harbour here, and the place grew rapidly. Seaham Hall was one of Lord Londonderry's seats. Pop. 16,957.

SEA HARE. Popular name for marine gastropod molluscs of the genus *Aplysia*. They have the general appearance of broad slugs—with upstanding tentacles supposed to resemble the ears of a hare. The shell is small, flattened, and concealed by the mantle. One species (*A. punctata*) is common in shallow water around the British shores, and has the power of ejecting a purple fluid when disturbed.

SEA HEATH (*Frankenia laevis*). Perennial herb of the order Frankeniaceae. A native of W. Europe, Africa, and Asia, it is found in salt marshes and plains. The downy stem leans upon the ground and sends up wiry jointed branches. The tiny, opposite leaves are oblong in shape, but do not appear so owing to the margins being rolled back from the sides. The small rosy flowers are produced singly in the forks of the branches. They are succeeded by a three-sided capsule.

SEA HOLLY or **ERYNGO** (*Eryngium maritimum*). Perennial herb of the order Umbelliferae. A native of sandy seashores on the



Sea Holly. Spiny leaves and flower-heads of the shore plant

Atlantic, Mediterranean, and Black Sea coasts, it has a stout, creeping and branching root-stock, and large roundish root leaves, cut into three lobes, with spiny teeth. The leaves are all stiff and leathery and of a glaucous tint. The bluish-white flowers are stalkless, so that instead of producing the umbels characteristic of the order Umbelliferae, these are massed in a dense head, with spiny bracts at the base. Under the name of eryngoes the roots were formerly candied.

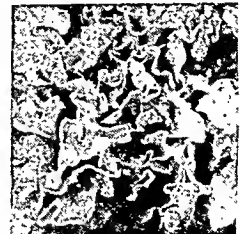
SEA HORSE (*Hippocampus antiquorum*). Small fish (about 7 ins. long) related to the Pipe-fishes (q.v.). It is a native of the Atlantic

and Mediterranean, occasionally appearing on the S.W. coasts of Britain and Ireland, and rarely in the N. Sea. Like the pipe-fishes it has a bony exterior, and the body is quadrangular, flattened from the sides. The large head ends in a long snout with the small mouth at its extremity. The fish swims with the body vertical, motive power being provided by its solitary fin—the dorsal, which is small. There is no tail fin, but this end of the body is narrowed and coils around the seaweeds among which the fish lives.



Sea Horse. The small bony fish
W. S. Berridge, F.Z.S.

SEA KALE (*Crabba maritima*). Perennial herb of the order Cruciferae, native of European sea coasts. It has a creeping root-stock, spreading branches, and

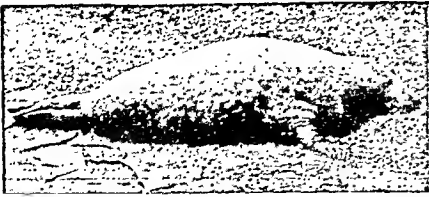


Sea Kale. Wild form of the edible seashore plant

large, wavy-edged leaves. The white flowers are produced in corymbs, succeeded by roundish one-seeded pods. Originally the plant was eaten in its wild state, but for more than 200 years it has been cultivated in Britain

as a food plant; the numerous young shoots in spring being forced and blanched. These are boiled and served up for the table after the manner of asparagus.

SEAL (A.S. seol). Popular name for a group of marine carnivorous mammals. The body is elongated, tapering from the shoulders to the tail, and covered with long, coarse hair. The limbs are converted into paddles, the greater part of their length hidden



Seal. Common Seal, found on the British coasts
Gambler Bolton, F.Z.S.

beneath the skin of the body, and the hands and feet fully webbed. In the true seals the hind limbs are united to the short tail, and are useless for locomotion on land. The young are born on land, and are at first white. They are found in all seas except those of the tropics, but abound chiefly in the Arctic and Antarctic regions. Seals feed upon fishes, crustacea, and molluscs; occasionally upon birds. The thick blubber with which they are coated can be hoiled down into oil, and for the sake of this product and their skins seals are persistently hunted. See Sea Lion.

SEAL (Lat. sigillum, little sign or mark) Mass of wax, lead, or other substance, bearing a device or words impressed upon it by a die; also the die itself, often called a matrix. The latter is retained for exclusive use by one person or corporation for the purpose of authenticating documents and preventing the unauthorised opening of envelopes, boxes, doors, etc. The die, usually of a hard stone or metal, is generally incised, and is often fitted to a finger ring known as a signet.

The material used for the impression is made of shellac and turpentine, and is called sealing wax. It is usually coloured red, though it may be ivory-black. See Anselm, S.; Chancellor; Great Seal; Privy Seal.

SEA LAVENDER (Limonium). Genus of mostly perennial herbs of the order Plumbaginaceae, natives of seashores and salt districts of temperate regions. The leaves spring directly from the stout root-stock, and the small, abundant flowers are borne on tall, branching stems. The calyx is of a tough, parchmenty character, which retains its form long after the seeds have been shed. This character causes many of the species to be grown for the purpose of drying the flowers for winter decoration. The name sea lavender is derived from the blue-purple colour of the common European species (*L. vulgare*).



Sea Lavender. Flower spikes of shore plant

Sea Lily. Alternative name for the echinoderm known as the feather star (q.v.).

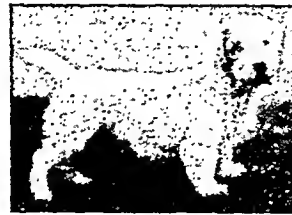
SEA LION OR FUR SEAL (Otariidae). Family of seals, natives of the temperate and Arctic regions of both hemispheres. They are distinguished from the true seals by having a more



Sea Lion. Large mammae of the Arctic and Antarctic. From it the best sealskin of commerce is obtained
Gambler Bolton, F.Z.S.

distinct neck, by the muzzle being more pointed, with the nostrils at its extremity instead of on the upper surface, and by having small external ears and a close, woolly fur under the long, coarse hairs. In addition, the hind limbs are free from the tail and can be turned forward so as to be used on land, enabling them to get over the ground speedily, though awkwardly. They are less exclusively aquatic than the true seals, spending more time on land, where they associate often in great numbers, especially in the breeding season, when every old male herds from 15 to 20 females in his harem. The younger males and females congregate in thousands on separate "bawling grounds."

SEALYHAM. Breed of terrier. Founded upon a hybrid between the Jack Russell and Welsh terriers by later crossings with the



Sealyham. A fine specimen of the popular breed of terrier

Dandie Dinmont and the Cheshire terrier, its characteristics have become fixed and it breeds true to type. It is affectionate and faithful, playful, and of quick intelligence, a good dog for the home, and a splendid ratter. The name is derived from the place in Pembrokeshire where the breed originated.

SEA LYME GRASS (*Elymus arenarius*). Tall, coarse, perennial grass of the order Gramineae, a native of Europe, N. Asia, and N. America. It has a stout, creeping root-stock which sends out runners and helps to bind the loose sand among which it grows. The stout stems are from 3 to 6 ft. high.

SEAMAN. Term for a sailor. More strictly it is used for one who is employed to navigate a ship at sea, but is below the rank of an officer. In the United Kingdom the law relating to the employment of British seamen is contained in the Merchant Shipping Acts, which were enforced from 1894 to 1920.

Speaking generally, the seaman is now, as far as legislation can accomplish it, saved from being flogged or ill-treated. On the other hand, a seaman who does not obey proper orders, or who refuses to return to his ship, is liable to punishment, and even to be sent back to the ship and compelled to complete the voyage. See Navigation.

SEAMAN, SIR OWEN (b. 1861). British journalist. Born Sept. 18, 1861, he was educated at Shrewsbury and Clare College, Cambridge. Appointed a master of Rossall School in 1884, he was made professor of literature at Durham College of Science, Newcastle-upon-Tyne, in 1890. In 1897 Seaman joined the staff of Punch, of which he became assistant editor in 1902 and editor in Feb., 1906. He was knighted in 1914, and his writings include *Oedipus the Wreck*, 1888; *The Battle of the Bays*, 1896; *In Cap and Bells*, 1899; *Borrowed Plumes*, 1902; *A Harvest of Chaff*, 1904; *Made in England*, 1910, and *Interludes of an Editor*, 1929.

SEA MAT (Flustra). Genus of Polyzoa of which many species are found round our coasts. The colonies resemble seaweed in appearance, the leaf-like, horny growth being covered with the cells of tiny polyps. They are attached to rocks, shells, or seaweed, whence those found along the shore have been stripped by the waves.

SEA MILKWORT OR BLACK SALTWORT (*Glaux maritima*) Perennial herb of the order Primulaceae. It is a native of Europe, Asia, and N. America, on seashores and estuaries and in inland salt districts. It has a fleshy, creeping root-stock, from which a number of short stems arise, clothed with oval-oblong, stalkless, fleshy leaves in pairs. The flowers are produced in the axils of the upper leaves, and consist of a bell-shaped pink calyx, the five petals being minutely dotted with crimson.



Sea Milkwort, or Black Saltwort. Leaves and flowers

SEA OTTER (*Lutra* or *Enhydra lutra*). Carnivorous mammal related to the true otters, but placed in a separate genus. It is a much bulkier and heavier animal, with a body about 3 ft. long, flipper-like hind feet, and a rather short tail. Its dark brown fur is very valuable. The sea otter ranges the coasts on both sides of the N. Pacific, being chiefly found about Alaska and the Aleutian Islands. Its food consists of molluscs, sea urchins, and crabs. It is not gregarious.

SEA PERCH OR COMBER (*Serranus cabrilla*). Food fish related to the sea bass (q.v.). A native of the E. Atlantic, Mediterranean, and Red Sea, migrating to S. England, it is about 10 ins. in length, the body compressed and deep, of a pale red colour with two or three blue or whitish wavy lines running from head to tail along the sides. The jaws, of which the lower is the longer, are well furnished with irregular, incurved teeth. It is constantly captured in crab pots, which it enters in quest of the bait.



Sea Perch. A species of bass
Cambridge Natural History (Macmillan)

SEAPLANE. Aeroplane fitted with floats to enable it to rise from, and alight on, the sea. In general the term is confined to the type which differs from the land machine only in the form of under-carriage employed. It is, however, frequently used generally to cover all types of water-going aircraft, including the float type, and the flying boat, in which the body, or fuselage, of the aeroplane is built in the form of a boat which serves to support the machine on the water. See Aeroplane; Aircraft Carrier; Schneider Trophy.

SEA POWER. Phrase meaning "the command of the sea" that was popularised by A. T. Mahan. He pointed out the decisive influence which sea power has exercised on the course of wars and the events of history. The defeat of the Persians by the Greeks (490-479 B.C.), and of the Athenians by the Spartans (431-405 B.C.), were known to have been achieved by sea power, which very term, in its Greek form, is used by Thucydides.

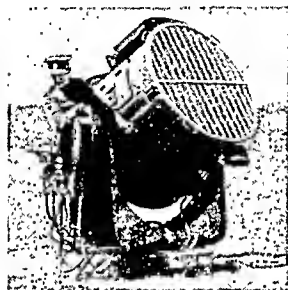
In a later age the command of the Mediterranean by the Venetians was the source of their power and wealth. The importance of sea power was present to the minds of the Elizabethans, who had a signal example of it in the defeat of the Armada. It was illustrated in the wars with Holland under the Commonwealth and Charles II. The British command of the sea was mainly responsible for the defeat of the Bourbon states, France and Spain, in the wars of the 17th and 18th centuries. A disputed command of the sea, through the intervention of the French and Spanish navies during the British struggle with the colonies in America, brought about the

British defeat and the independence of the United States. In the wars of the French Revolution, 1793-1815, British sea power was once more the decisive factor. The Great War saw the use of sea power on a vast scale; and to the British blockade the Germans mainly attributed their defeat.

SEARCH. In general, the act of examining to find some person or object. In English law, a constable has the right to search the person of one whom he arrests on a reasonable suspicion of felony. No one has any right to search a man's house or premises without a search warrant.

A search warrant is an order or authority given in writing by a magistrate to enter private premises and search them. The most common case is the search warrant for stolen property, which may be granted upon the sworn testimony of a credible witness. They may also be granted for other purposes.

SEARCHLIGHT. Apparatus for projecting a powerful beam of light in any direction. They are used in lighthouses, ships, fortresses, and for military operations in the field to project the light of an electric arc. The body of a searchlight consists of a short metal cylinder strengthened at both ends by angle-iron rings. A silvered mirror of parabolic shape is attached to the back ring and protected



Searchlight. Type used in anti-aircraft defence

by a removable cover. The front ring carries a door glazed with narrow vertical strips of plain glass, which are free to expand independently in all directions. At the top is an opening to permit hot air to escape, and similar openings at the bottom admit cold air. The lamp mechanism, fastened to the bottom of the body, has two long arms projecting through a horizontal slit to hold the carbon rods in the axial line of the cylinder.

Body and lamp are balanced on horizontal trunnions at the sides bearing on arms attached to a circular table, which is revolved very easily by hand or gearing. Current is conveyed to the lamp through insulated slip-rings in the base with which brushes on the table make contact. See Lighthouse.

SEA ROCKET (*Cakile maritima*). Annual herb of the order Cruciferae, found on sandy shores. The fleshy leaves are deeply cleft, the flowers lilac, half an inch across. The fruit is a pod an inch long. The branches grow zig-zag fashion, 1 to 2 ft. high.

SEA SERPENT. Supposed marine animal. Of snake-like form and immense size, it is alleged to have been seen by travellers on many occasions and in widely separated localities. Apart from mythological tales of early date, the first accounts of it appear to belong to the 16th century; and stories of its appearance have been told from time to time until the beginning of the 20th century.

SEA SICKNESS. Form of illness due to the motion of a

ship. The symptoms are vertigo, nausea, usually followed by vomiting, and physical prostration. Sufferers about to undertake short voyages should partake only of easily digested food.

Effervescing fluids, such as soda water, milk and soda, are soothing to many persons. Unless a person is rendered seriously ill by seasickness, it is better to avoid drugs. In severe cases, however, bromide of potassium or ammonium bromide in doses of 15 grains may be taken every four hours, commencing some hours before starting the voyage, or 10 grains of trional may be taken two hours before sailing. A firm bandage round the abdomen may give some relief.

SEASIDE GRAPE (*Coccoloba uvifera*). Small evergreen tree of the order Polygonaceae, native of the West Indies. It attains a height of about 20 ft., and has roundish heart-shaped leathery leaves and fragrant white flowers. The floral envelope, or perianth, becomes pulpy, of a violet colour, and acid flavour. The whole plant is astringent, and an extract is used as a substitute for kino (q.v.).

SEA SLUG. Name popularly applied to various marine gastropod molluscs in which the shell is either absent or is concealed under the mantle. For these the term is not inappropriate, but it is erroneous when applied to the holothurian echinoderms, e.g. the bêche de mer or sea cucumber, which belong to a different phylum of the animal kingdom from the molluscs. See Mollusc.

SEA SNAKE (*Hydrophiinae*). Family of aquatic reptiles. It includes 10 genera and about 50 species, natives of the tropical portions of the Indian and Pacific Oceans. A Philippine species is found in a fresh-water lake. They vary in length between 3 ft. and 8 ft., and are mostly brightly coloured, often in contrasting rings of black and white, olive and yellow, green, etc. The belly is keeled, and the tail compressed to serve as a paddle. The small head is pointed; the eyes, small with round pupils, are almost useless when the snake is on land. The poison from their permanently erected short fangs is so virulent that the muscles of a bitten fish are relaxed instantly, so that it can be swallowed without danger from erected spines.

SEATON. Urban dist. and watering place of Devonshire. It is on the Axe, 7 m. from Axminster, on the Southern Rly. There are good bathing and golf links. Pop. 2,800.

Seaton gave the title of baron to John Colborne (1778-1863), who, having served through the Peninsular War and at Waterloo, was made governor of Upper Canada in 1838. There he crushed the rebellion, and for this service Colborne was made a baron. He died April 17, 1863.

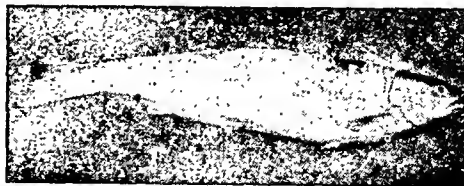


Sea Serpent. Marine creature sighted from the Earl of Crawford's yacht Valhalla, in the south Atlantic Ocean, off Para, Dec. 7, 1905. From a drawing by M. J. Nicoll, a naturalist on board.

SEATON DELAVAL. Urban dist. of Northumberland. It is 6 m. from N. Shields, on the L.N.E. Rly. Seaton Delaval Hall is the seat of Lord Hastings. Pop. 8,016.

Seaton Carew is a watering place within the borough of West Hartlepool.

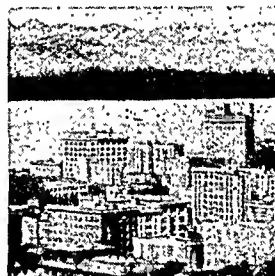
SEA TROUT or **SALMON TROUT.** British fish. Formerly considered a distinct species under the name of *Salmo trutta*, it is now regarded as an anadromous or migratory



Sea Trout. Silvery fish now regarded as a migratory form of the brown trout (*Salmo fario*) W. S. Berridge, F.Z.S.

form of the brown trout (*S. fario*). In habits it is much like the salmon (q.v.), going to the sea to feed, returning to fresh water for the purpose of breeding, spawning from Sept. to Nov., and going back to the sea as a kelt. The sea trout is found in the north-east Atlantic, Mediterranean, and Caspian seas. See Trout.

SEATTLE. City of Washington state, U.S.A. It lies between Elliot Bay, a branch of Puget Sound, and the fresh-water Lake Washington, and is served by the Great Northern and other rlys., and by ocean-going steamers. It is the seat of Washington University. Seattle is one of the chief American Pacific seaports, and specialises in the trade with Alaska. It has important lumber interests, and also trades in fish, agricultural produce, and minerals, chiefly gold. Manufactures include flour, furniture, foundry and machine-shop products, lumber products, and various leather goods. Pop. 355,000. Pron. Seattle.



Seattle. Business centre of the city, looking across Puget Sound

SEA URCHIN. Popular name for several genera of Echinoderms. The principal organs are enclosed in a stony casket armed with long spines not unlike those of the hedgehog.

SEAWEED (Algae). General term embracing several classes of the great group *Thallophyta* (q.v.), plants of simple structure without true leaves, stems, or roots, wood, or vessels. They are reproduced by spores, which are in some cases the result of the fusion of two sexual cells. The entire surface of the plant is capable of absorbing nutriment from the medium in which it lives. What appear to be roots in many species are merely grapples or suckers which attach the plant to rocks or other support, but do not feed it.

In the Rhodophyceae the chlorophyll is in most species masked by a red pigment. In some genera (*Corallina*, *Jania*, and *Lithothamnium*) an external layer of carbonate of lime is secreted, which conceals their vegetable nature and caused them formerly to be classed among corals. See Algae; Botany; Corallineae, etc.; also illus. p. 53.

SEBASTIAN (255-288). Christian saint and martyr. Born at Narbonne, he went to Rome and entered the army. Not long afterwards he was charged with being a Christian, and the emperor ordered him to be shot to death by archers. He was left for dead, but recovered under the care of a Christian lady named Irene, and afterwards remonstrated with the emperor, who then had him

beaten to death with cudgels. His body was found by another Christian lady named Faustina and buried in the catacombs, the basilica of S. Sebastian being afterwards built upon the spot. His martyrdom by archers has been a frequent subject for artists.

SECOND ADVENT. Theological term for the expected reappearance of Jesus Christ on earth. In theory the Christian life is lived in expectation of this. The early Church believed the event was imminent; modern teaching goes no further than emphasise the belief that the Second Advent will come suddenly. Matt. 24-26; 2 Thess. 2, 2; Zech. 14, 4, have a special bearing on the question. Some present-day sects regard the Second Advent as imminent. See Adventists; Antichrist.

SECOND BALLOT. In proportional representation, a device for securing an absolute majority. A second ballot is held if the first ballot results in failure to elect the candidate or candidates by an absolute majority. At this stage the candidates are the leaders in the first ballot, the remainder falling out. It is used in some Parliamentary elections, e.g., for the Scottish Universities. See Proportional Representation.

SECOND CHAMBER. Term used for the non-elected or indirectly elected house in a legislature of two houses, the elected one being the first chamber. Most legislatures consist of two houses, examples of their second chambers being the House of Lords and the Senates of the U.S.A. and France. In some parts of the British Empire, however, e.g. Manitoba, and in some foreign countries, there is no second chamber. The nature of second chambers varies. Some consist of members nominated by the crown or other ruling authority. In federal governments, e.g. Canada, Australia, S. Africa, U.S.A., and Germany, it is usual for the second chamber to consist of representatives of the states, while the first represents the people. See Lords, House of; Senate.

SECOND EMPIRE. Name given to the period of French history between Dec. 2, 1852, when Louis Napoleon, having destroyed the Second Republic by a coup d'état, was proclaimed emperor, and Sept. 4, 1871, when the Third Republic was proclaimed after his surrender to the Prussians at Sedan. See France; Napoleon III.

The Second Republic was the period between Feb. 24, 1848, and Dec. 2, 1852, when Louis Napoleon made himself emperor.

Second Lieutenant. Lowest rank of commissioned officer in the British army. See Lieutenant.

SECOND SIGHT. Popular name for several kinds of spontaneous psychical phenomena, including clairvoyance and premonitory and symbolic visions or hallucinations. It is especially applied to a gift alleged to be possessed by many persons in the Scottish Highlands. Natives of Skye and seventh sons of seventh sons are popularly credited with this power. The best known kind of second sight is the death-warning, which takes various forms, including "corpse candles" or spectral lights, or an apparition of the doomed person, known as the wraith or fetch. Also, when the object of the warning is present, a symbolic shroud is seen wrapping the lower part of the figure, the height to which

it extends being believed to indicate the nearness of death. A fatal accident may be seen on the spot before it happens, or at a distance at the time of its occurrence.

SECRETARY (Late Lat. *secretarius*, confidential officer). Term used in several cognate senses. A secretary of state is a high officer of the British crown, in charge of one of the chief departments of government. There are eight secretaries of state—home, foreign, colonial, war, air, Scotland, India, and Dominions; all are members of the Cabinet. The home secretary ranks as the senior secretary.

The early English kings had clerks or secretaries to assist them with their business, and soon one of these became a principal secretary. In the 16th century there were two of them, and after a time one took charge of foreign and the other of home affairs. In 1794 a third secretary of state was appointed to manage certain military affairs, and in 1801 he took over the charge of colonial business. In 1854 these two functions were separated and a fourth secretary was appointed. The fifth secretary of state was appointed to manage the affairs of India after the dissolution of the East India Co. in 1858. After the Great War the air minister was made a secretary of state, and in 1926 the secretary for Scotland was given the same dignity. The eighth secretary was created in 1930, when the offices of secretary for the Colonies and the Dominions, hitherto held by the same person, were separated. See Colonial Office; Foreign Office; Home Office; etc.



Secretary Bird. Long-legged species of vulture inhabiting S. and E. Africa

SECRETARY BIRD (*Serpentarius secretarius*). African bird of prey, allied to the vultures, but differing greatly from them in appearance. The name is derived from the pendent crest of long feathers upon the head, which suggests quill pens thrust behind the ears. The bird has long legs, and stands over four feet high; and the tail is nearly two feet long. The plumage is grey and white, with black rump and black and white bars on the tail feathers. It is found throughout S. and E. Africa and in a few of the W. districts. The birds feed mainly on small snakes, lizards, and insects. Secretary birds can fly strongly, but they spend most of their time on the ground.

SECRET SERVICE. Department of many governments, whose business it is to make confidential inquiries into political, criminal, or other matters. From their nature little can be known of such departments. The British Secret Service is paid out of funds of which no details are given to the public.

SECRET SOCIETY. Body of persons concealing from outsiders its membership, tenets, aims, or activities. Such societies are of the most varied nature, the motive of secrecy being to safeguard members against persecution, to pursue a common object respecting which publicity is undesirable, to maintain caste privilege, or merely to surround members with an air of mystery.

The societies connected with the mysteries of ancient Greece, Asia Minor, and Egypt, link primitive secret societies with later religious organizations. In medieval Europe, as in the East to-day, an element of secrecy belonged to most religious and political societies. Chinese secret societies appear to lack the religious and magical elements, and pursue revolution-

ary or anti-European aims. See Carbonari; Mystery; Freemason; Ku-Klux Klan; Mafia; Rosicrucians.

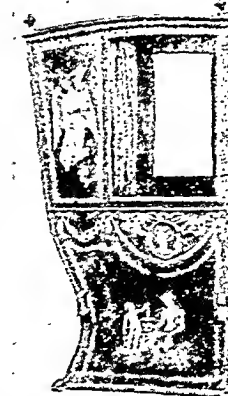
SECULARISM (Lat. *saeculum*, age, generation; late Latin, world). Philosophical system which limits the destiny of man to the present life. It was founded in England by George Jacob Holyoake (q.v.). The avowed object of its members was to live and die for the world and to work for the welfare of man. Dogmatically, its position was negative; it denied the arguments for the existence of a God, a divine government of the world, or a future life. If there were a future life, those who had done their best to assist their fellows in this world would obtain their reward; if there were not, it would be foolish not to enjoy oneself while one can. See Agnosticism; Freethought; Positivism.

SECURITY. In European politics this term means security from unprovoked attack, and since 1919 statesmen and others have been working on plans to secure it. In 1927 the League of Nations appointed a security committee, and this produced some model treaties. The pact of Locarno, 1925, the Peace Pact of 1928, and other post-war arrangements are also steps in the direction of security.

SEDAN. Town of France. It is on the right bank of the Meuse, 164 m. N.E. of Paris, best known as the scene of the crushing defeat of France by Germany in 1870. It has woollen and cloth factories, and owed its prosperity to the Huguenots. Occupied by the Germans throughout the Great War, it was captured by French and American troops just before the armistice. Pop. 18,235.

CAMPAIGN OF SEDAN. In 1870 MacMahon, with a French army at Châlons, wished to move it on Paris, but was ordered to join up with Bazaine, still at Metz. The German plans were to prevent Bazaine breaking out of Metz, while continuing the march on Paris in sufficient force to meet the Châlons army. The 3rd German army moved directly on Sedan from the S. On Sept. 1 Moltke gave orders for the attack to be pressed at day-break, while the left wing of the 3rd army pushed N. to prevent a retreat on Belgium. The retreat began, and was then stopped on the receipt of an order from Paris.

Meanwhile the German right was closing round the Châlons army. The Guard, now in touch with the 3rd army, carried the Bois de la Garenne, and the battle was practically over. Fugitives from all sides were crowding into Sedan, German guns were starting conflagrations there, and the Bavarians were starting an assault on the Toney gate, when the flag of surrender was hoisted by order of Napoleon III. The victory cost the Germans 9,000 casualties and the French 17,000, but Napoleon and 104,000 officers and men became prisoners of war. See Franco-Prussian War.



Sedan Chair. Type used in the period of Louis XVI

SEDAN CHAIR. Enclosed armchair carried by bearers by means of poles passed through rings or supports in the side of the vehicle. So called from Sedan, in France, where it was said to have been invented, it

was introduced into England by the duke of Buckingham in the reign of James I. A patent was granted in 1634 for the right to hire out covered chairs in London, and they soon became generally popular, and their use lingered on till early in the 19th century. Usually the door was in front, between the poles; often the roof lifted to enable ladies with high head-dresses to enter.

SEDBERGH. Market town of Yorkshire (W.R.). It is 28 m. from Penrith, on the L.M.S. Rly. The chief building is the Norman church of S. Andrew. The public school was founded in 1525 by Roger Lupton, provost of Eton, and was re-established in 1552. It existed for many years as a country grammar school, but in 1874 was remodelled on public school lines. It has accommodation for 425 boys. Market day, Wed. Pop. 2,586.

SEDDON, RICHARD JOHN (1845-1906). New Zealand statesman. Born at St. Helens, Lancashire. June 22, 1845, the son of a schoolmaster, he went out to the Australian goldfields in 1863. Prosperity came to Seddon when he opened a store in New Zealand, and he soon became prominent in local affairs. In 1881 he was elected to the New Zealand legislature, and was for nine years an active private member. In 1890 he was made a minister, and in 1893 he succeeded John Ballance



Richard Seddon,
New Zealand
statesman

as premier. He held that position until his death, June 10, 1906.

Seddon introduced old-age pensions, women's suffrage, local option, and land taxes, and nationalised the mines.

SEDGE (Carex). Extensive genus of perennial tufted herbs of the order Cyperaceae, natives of all, but chiefly cold, climates, being rare in the tropics. They have long, narrow, grass-like leaves, often rolled and thread-like, frequently with minutely toothed edges. The male and female flowers are separate, but both kinds are usually included in the same spikelet. The tissues are used in paper-making, and the underground stems are sometimes used for food.



Sedge. Grass-like
leaves and flower
spikelets

SEDGEFIELD. Parish of Durham. It is 9 m. from Stockton-on-Tees, on the L.N.E. Rly. The parish church is an Early English building of the 13th century. Pop. 3,111.

SEDGEMOOR. Tract of marshy land in Somerset. It is about 5 m. from Bridgwater, and is famous for the battle fought here, July 6, 1685, between the forces of James II and those of the duke of Monmouth. Each side was about 4,000 or 5,000 strong. The royalists were better armed and trained, and the attack of Monmouth's men, mostly peasants, was beaten back with heavy loss, and a terrible revenge was taken on them as they fled. See Monmouth, Duke of.

SEDGLEY. Urban dist. of Staffordshire. It is 3 m. from Wolverhampton, on the L.M.S. Rly. The industries are those of the Black Country. Pop. 17,301.

SEDGWICK, ADAM (1785-1873). British geologist. Born March 23, 1785, at Deut, Yorkshire, he was educated at Sedbergh and Trinity College, Cambridge. He was elected to the Woodwardian professorship of geology in 1818. Sedgwick travelled extensively in

making geological studies, wrote many papers on geology, some with Sir R. Murchison, and was a leading authority on Palaeozoic rocks. He died Jan. 27, 1873.

SEDLEY, SIR CHARLES (c. 1639-1701). English dramatist and wit. Born at Aylesford, Kent, and educated at Wadham College, Oxford, he earned a great reputation as a wit when he entered London society, and one equally great for profligacy. He wrote two tragedies and three comedies, of which *Bellamira*, 1687, founded on the *Eunuchus* of Terence, is the best. His poetry has little merit, though his lyric *Phyllis is My Only Joy* is remembered. Sedley died Aug. 20, 1701.

SEDUCTION (Lat. seducere, to lead astray). Act of inducing a girl or woman to part with her virtue for the first time. In English law an action will be against the seducer of a woman by the woman's master. Nominally, the action is for loss of services, though the damages to be awarded are not limited to the value of the services lost. In Scotland the woman seduced can bring an action direct, and there is no need to prove any service. See *Adultery*.

SEDUM or **STONECROP**. Genus of succulent herbs of the order Crassulaceae. There are 120 known species, chiefly of the Old World. Eleven are natives of Great Britain, including rosewort (*S. rhodiola*), orpine (*S. villosum*), and the common stonecrop (*S. acre*). The flowers of the last are starlike and brilliant yellow; it grows on roofs and walls, or by the seashore.

SEECKT, HANS VON (b. 1866). German soldier. Born April 22, 1866, the son of a soldier, he entered the army in 1887. In

1898 he joined the general staff, and in 1914 was chief of the staff of the 11th army. He planned the German offensive at Soissons in Jan., 1915, and then became chief of the staff of the group of armies that, under Mackensen, broke into Galicia and overran Serbia. In 1917 he took command of the Turkish army. In 1919 Seeckt was Germany's military representative at Spa, and from 1920 to 1926 he was commander-in-chief of the army of the republic and was responsible for its military organization under the peace treaty. In 1928 he published *Thoughts of a Soldier*, and in 1929 *The Future of the Reich*.

SEED. In botany, a fertilised and ripened ovule containing an embryo plant. Seeds develop in many different forms. Some, as nuts, are contained in a case of almost stony hardness; others, as the milkweeds, are covered with silky hair; others again, e.g. those of the date, apple, or yew tree, are enclosed in fruity pulp. In all the covering is such as will best tend towards the dispersion or survival of its contents.

In the leguminous plants the pods, when dry, twist and scatter the seeds. The fleshy fruits, as the strawberry, are eaten by birds or mammals, and the seeds, passing unharmed through the digestive organs, are widely distributed. The so-called "burr" seeds are provided with hooked spines, which catch in the coats of passing animals, and in this way are carried to a distance. Some trees, as the elm and ash, have winged seeds which will fly a long way from the parent tree. See *Botany*; *Flower*; *Fruit*.

SEED TESTING. An Act of Parliament passed in 1920 made it obligatory for a seller of seeds to give to the buyer a written statement of the variety, purity, and germination of the seeds in question. Seeds must not contain more than a certain minimum per-

centage of injurious weeds. There is an official seed testing station at Cambridge.

SEELEY, SIR JOHN ROBERT (1834-95). British historian. Born in London, Sept. 10, 1834, the son of Robert Burton Seeley, publisher and author, he was educated at the City of London School and at Christ's College, Cambridge, where he became fellow and lecturer. He was appointed professor of Latin at University College, London, 1863, and was regius professor of modern history at Cambridge from 1869 until his death, Jan. 13, 1895. He was knighted in 1894.



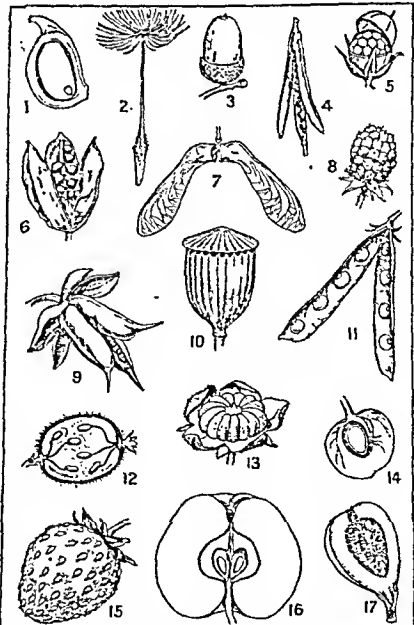
Sir J. R. Seeley,
British historian

In 1865 Seeley wrote anonymously *Ecce Homo*, a study of Jesus Christ as a man of astonishing influence but not a divine being; this created quite a sensation at the time. He also wrote on the same lines *Natural Religion*, and as an historian *The Life and Times of Stein*, 1879, and a short life of Napoleon, 1886. More popular perhaps are his *Expansion of England and the Growth of British Policy*. His suggestive lectures, entitled *Introduction to Political Science*, did not appear until after his death.

SEELY, JOHN EDWARD BERNARD (b. 1868). British politician. Born May 31, 1868, he was the third son of Sir Charles Seely, Bart., He served with the Imperial Yeomanry through the South African War, winning the D.S.O. While in South Africa he was returned to Parliament as Unionist M.P. for the Isle of Wight, but soon after his return home his free trade views led him to join the Liberals. He represented various constituencies until he retired from parliament in 1924.



J. E. B. Seely,
British politician



Seed. Types of receptacle. 1. Achene—buttercup. 2. Achene—dandelion. 3. Nut—oak. 4. Silique—wallflower. 5. Capsule—pimpernel. 6. Capsule—iris. 7. Samara—sycamore. 8. Compound drupe—blackberry. 9. Follicle—stinking hellebore. 10. Capsule—poppy head. 11. Legume—pea. 12. Berry—gooseberry (section). 13. Schizocarp—mallow. 14. Drupe—cherry (section). 15. False fruit—strawberry. 16. Pome—apple (section). 17. Hypanthodium—fig (section).

In 1908 Seely was made under-secretary for the colonies, and in 1911 under-secretary for war. He succeeded Haldane as secretary for war in 1912, but resigned in 1914 because he had initialled a demand that certain army officers should not be called upon to serve against Ulster. Soon after the Great War broke out Seely was appointed to command a brigade of Canadian cavalry. He returned in 1916 to become parliamentary secretary to the ministry of munitions, and for a time in 1919 was under-secretary for air.

SEFTON, EARL OF. Irish title held by the Molyneux family since 1771. Representative of an ancient family of Lancashire, Sir Richard Molyneux was made Viscount Molyneux in 1628. The succession passed in due course to William, 9th Viscount, who was created earl of Sefton in 1771. The earl's eldest son is called Viscount Molyneux, and his chief seat is Croxteth Hall, Liverpool.

A suburb of Liverpool where the earl has some land is called Sefton Park. See Liverpool.

SEGESTA or **EGESTA**. Ancient Greek city in Sicily. It was situated on Mt. Varvaro, 2 m. N. of the modern Calatafimi. There are remains of city walls, an incomplete Doric temple, and a rock-cut theatre.

SEGOVIA. City of Spain. It is 63 m. by rly. N.N.W. of Madrid. The old town is surrounded by a wall with 96 towers and is set upon a hill crowned with a castle, the Alcázar, and a 16th century Gothic cathedral. Water is obtained from a Roman aqueduct. Ancient churches, palaces, and houses give a venerable aspect to the place, which has picture galleries and museums. Pop. 14,000.

SEGRAVE, SIR HENRY O'NEAL DERANE (1896-1930). British engineer. Educated at Eton and Sandhurst, he served in the Great War, in the R.A.F., and accompanied the British aviation mission to the U.S.A. in 1918. He then devoted himself to motor engineering and became noted as a racing motorist. In Mar., 1929, at Daytona, Florida, he captured the world's land speed record in his car Golden Arrow, covering a mile in 15.56 seconds, his speed being 231.36 m.p.h. At the international motor boat races at Venice in Sept., 1929, his boat, Miss England, averaged 92.8 m.p.h. On June 13, 1930, his motor boat capsized on Lake Windermere and he received fatal injuries. His last attained speed at the trials (average, 98.76 m.p.h.) was accepted as a world's record. He was knighted in 1929. See Motor Boat.



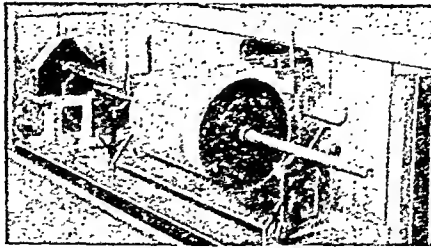
Sir Henry Segrave,
British engineer
Rita Martin

SEINE. River of France. It rises in the dept. of Côte d'Or, N.W. of Dijon, and flows generally N.N.W. for 482 m. to the English Channel. Its chief tributaries are the Marne, Oise, and Yonne. It is connected by canal and river with Belgium and the industrial towns of N.E. France, with the Rhine and Rhône, and with the Mediterranean.

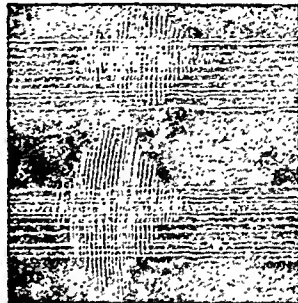
The Seine gives its name to four departments of France. Seine covers 135 sq. m., chiefly suburbs of Paris. Seine-et-Marne, with Melun as its capital, covers 2,275 sq. m. Seine-et-Oise, its capital being Versailles, is a little smaller. Seine-Inférieure contains Rouen, its capital, and Havre; area, 2,448 sq. m.

SEINE NET. Fishing net kept outstretched by means of corks at the top and leads at the bottom edge, and used to encircle fish and draw them to the shore or into a boat. In sea fishing the seine net is used principally for the capture of herring, pilchards, sprats, mackerel, bass, or grey mullet. If caught in shallow water the fish are drawn on to the beach. Numerous legal restrictions govern the use of the seine net for salmon fishing.

SEISMOGRAPH. Automatic record obtained of the earth vibrations due to earthquakes. In principle the operation is simple. A steady point unaffected by the earth's tremblings (e.g. a pendulum suitably adjusted) is caused to mark a straight line on a moving surface attached to the earth. When the



earth trembles the surface vibrates and the line becomes sinuous. The elaborate and delicate instruments embodying this principle are known as seismometers. Usually the earthquake shock reaches the observatories from a distance, and the vibrations are so small that in some mechanical way the earth motion must be magnified. See Earthquake.



Seismograph. Top, revolving drum with the pens which record the earth tremors. Below, earthquake record, showing the amplitude of movement along two directions at right angles to each other

SEKONDI or **SECONDEE**. Port of the Gold Coast Colony, Africa. Between Dixcove and Cape Coast Castle, it is the principal port of the colony. Pop. 7,700.

SELAGINELLA. Extensive genus of moss-like evergreen flowerless plants of the order Selaginellaceae, natives of all warm and temperate regions. The plants much resemble the club-mosses (Lycopodium), differing chiefly in the production of two forms of spores (macrospores and microspores) and spore capsules. Selaginella kraussiana, a S. African species, commonly grown in greenhouses, has trailing and rooting stems.

SELANGOR. One of the Federated Malay States. It is bounded N. by Perak, S. by Negri Sembilan, E. by Pahang and W. by the Strait of Malacca. The state is drained chiefly by the Klang river, on which is Kuala Lumpur, the capital of the F.M.S., and Selangor. Port Swettenham is an important rubber port. Klang is the seat of the native sultan. Good roads serve the developed areas. The area is 3,150 sq. m. Pop. 401,009. See Malaya.

SELBORNE. Village of Hampshire, 5 m. from Alton on the Southern Rly. It is known as the birthplace of Gilbert White, author of The Natural History of Selborne. His house is shown, and he is buried in the churchyard.

The Selborne Society was formed in 1885 as the Selborne League for the preservation of birds, plants, and pleasant places. In 1886 it was joined by the Plumage League, and carried on propaganda work against the destruction of wild birds for their plumage.

The society also supports efforts to secure safe nesting-places for birds, especially near large towns, and generally to promote nature study. See White, Gilbert.

SELBORNE, ROUNDELL PALMER, 1ST EARL OF (1812-95). British lawyer. Born at Mixbury, Oxfordshire, Nov. 27, 1812, he became a barrister after a brilliant career at Winchester and Oxford. In 1847 he entered the House of Commons, and he remained, with short intervals, a Liberal M.P. until 1872, being solicitor-general, then attorney-general, in the Whig ministry of 1859-66. In 1872 he was appointed lord chancellor and created a baron. He was responsible for the important Judicature Act of 1873. Created an earl in 1882, he left office in 1885, and broke away from Gladstone in 1886 over the Home Rule question. He died May 4, 1895.

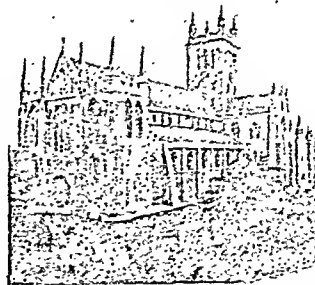
His son, William Waldegrave Palmer, the 2nd earl (b. 1859) entered Parliament as Liberal M.P. for E. Hampshire in 1885, retaining the seat after he had become a Liberal Unionist. M.P. for W. Edinburgh, 1892-95, he succeeded to the earldom in that year, in which also he was made under-secretary for the colonies. Having been first lord of the admiralty, 1900-3, Selborne succeeded Lord Milner as high commissioner for S. Africa in 1905. In 1915 he joined the Coalition Government as president of the board of agriculture, but resigned in 1916. His eldest son, Viscount Wolmer (b. 1887), was from 1910 a prominent Unionist in the House of Commons.

SELBY. Urban dist. and market town of Yorkshire (W.R.). It stands on the Ouse, 14 m. from York, on the L.N.E. Rly. A canal connects it with the Aire and Calder navigation. The town is famous for its magnificent abbey church, restored after a fire in 1906. It belonged to a Benedictine abbey founded by William the Conqueror in 1069. Features include some beautiful Norman and Decorated work. Market day, Mon. Pop. 10,250.

SELDEN, JOHN (1584-1654). English antiquary. Born at Salvington, near Worthing, Dec. 16, 1584, in 1612 he became a barrister, formed friendships with some of the most learned men of the time, and appears to have been one of the company frequenting the Mermaid Tavern. He sat in the Long Parliament for Oxford University, was a lay member of the Westminster Assembly, and was several times in prison for his opinions. Among the offices he held was that of keeper of records at the Tower of London.

A great scholar, whose legal writings are still quoted with authority, his works include Titles of Honour, 1614; History of Tythes, 1617; and Privileges of Baronage, 1642; but he is best remembered for the volume called Table Talk, 1689. He died Nov. 30, 1654.

SELECTION. Biological term used in several different senses, all having reference to the process of evolution or the production of types of individuals. Natural selection is a term often used to express the central idea of the Darwinian theory of evolution, according to which the individuals of a species least fit to survive are eliminated. Artificial selection is



Selby, Yorkshire. The famous abbey church from the south-west



John Selden,
English antiquary
After Lely

the process which is used by breeders of animals in the endeavour to produce certain special types or qualities. Germinal selection denotes the theoretical selection which possibly occurs amongst germ-cells in a vertebrate body. Reversed selection takes place when the selection affects not the increase of an organ, but its decrease. Sexual selection is that part of the process of natural selection where sex comes into operation. See Biology; Darwin, C. R.: Evolution; Sex.

SELÈNÈ. In Greek mythology, goddess of the moon. She was the daughter of Hyperion, and a sister of Helios, the sun god, and Eos, goddess of the dawn. She made her journey across the heavens in a chariot drawn by two white horses. Just as in later times Helios, the sun god, became identified with Apollo so Selènè became identified with Apollo's sister Artemis. Pron. Selcenec.

SELENITE. Variety of gypsum or calcium sulphate. It is usually transparent, white or light grey, yellow or green in colour, and occurs in large twinned crystals which are capable of fine cleavage, like mica. In Great Britain the crystals are a feature of the Kinmeridge clay near Oxford. See Gypsum.

SELENIUM. A chemical element. Its symbol is Se, atomic weight 79.2; atomic number 34; specific gravity 4.26 to 4.82. It is similar in crystalline structure to sulphur, and like that element exists in various allotropic forms, the most important being the amorphous and the metallic. Selenium was discovered in 1817 by Berzelius, in deposits formed in the manufacture of sulphuric acid at Gripsholm, Sweden. It is used for colouring glass a delicate rose tint.

Crystalline selenium increases in electrical conductivity when subjected to light, and it has hence been made use of in forms of apparatus for the electrical transmission of photographs, and in the optophone (q.v.).

SELEUCIA. Ancient city of Asia. It was situated on the Tigris, on the frontiers of Assyria and Babylonia. Built by Seleucus I, king of Syria, between 312-302 B.C., it became a great and splendid city, but eventually was eclipsed by Ctesiphon as the chief city of W. Asia. After its capture by Severus, A.D. 198, it gradually fell into decay.

SELEUCID. Name of the Macedonian dynasty which ruled in Syria and other parts of W. Asia from 312 B.C. until the Roman annexation in 65 B.C. It was founded by Seleucus, called Nicator, or the conqueror, one of Alexander's generals, who in the partition of his empire following his death acquired possession of Syria, Mesopotamia, and the regions east of the Euphrates.

Seleucus was succeeded by his son Antiochus I (280-262), called Soter, or the saviour, from his victory over the Gauls who invaded Asia Minor in 278. Seleucus II (246-226) lost much territory to Ptolemy III of Egypt, to Arsaces of Parthia, and to the king of Pergamum, but these were largely recovered by Antiochus III the Great (223-187). The ablest of his successors was his son Antiochus IV, called Epiphanes. The dynasty came to an end with Antiochus XIII, who was deposed by Pompey in 65 B.C., when Syria became a province of the Roman Republic.

SELF HEAL (*Prunella vulgaris*). Perennial herb of the order Labiatae. A native of Europe, N. Africa, Asia, America, and Australia, it has a creeping root-stock and short branching stems, with ohlong or lance-shaped leaves. The purple, two-lipped flowers are produced in whorls, which are but slightly apart, the intervening bracts having purple margins. It was formerly used for wounds.

SELF-INDUCTION. In electricity, electric inertia. The starting and stopping of an electric current occupies a small fraction of time. This is of little consequence with a direct current, which flows continuously in one direction, but in the case of an alternating current, where the direction is rapidly and constantly reversed, the effort of rapidly changing direction produces a counter electromotive force, which has the effect of reducing the electro-motive force generated. See Current; Electricity; Induction.

SELFRIDGE, HENRY GORDON (b. 1864). Anglo-American business man. Born at Ripon, Wisconsin, Jan. 11, 1864, he entered business life, and in 1890 became a partner in the Chicago firm of Marshall, Field and Co. In 1909 he founded the firm of Selfridge and Co., London, and took over Whiteley's in 1926.

SELJUK. Turkish family which ruled Western Asia in the 11th and 12th centuries. Its founder was Seljuk, who about A.D. 1000 led a band of Ghuz Turks from the N. to the region of Bokhara. His grandsons gradually extended their sway over Persia, and during the 11th century Syria and Asia Minor were conquered. The Seljuk empire then extended from Kashgar to the Dardanelles, and from the Caucasus to S. Arabia. On Malik Shah's death the W. part broke up into independent states, of which the most illustrious was the Seljuk sultanate of Rum, the capital Iconium being the seat of a brilliant civilization, which lasted until the rise of the Ottoman Turks, about 1300. The main line reigned at Hamadan until 1194. See Persia; Turkey.

SELKIRK. Burgh of Selkirkshire, also the county town. It stands on Ettrick Water, 40 m. by rly. from Edinburgh, on the L.N.E. Rly. The place was long famous for its manufacture of shoes, an industry now superseded by that of woollen goods. Pop. 5,775.

The Selkirk Mts. are a range in the S.E. of British Columbia. They extend N. from the U.S.A. boundary to the great loop of the Columbia river.

SELKIRK, ALEXANDER (1676-1721). British sailor. The son of a shoemaker of Largo, Fife-shire, in 1703 he joined Damper's expedition to the South Seas as navigator of the vessel Cinque Ports. In 1704, when off Juan Fernandez, he asked to be set ashore in consequence of a quarrel with his captain. He remained on the island 52 months, was then picked up by Captain Woodes Rogers, and eventually became mate of H.M.S. Weymouth, on which vessel he died. Rogers's Cruising Voyage Round the World, 1712, is supposed to have given Defoe the idea of Robinson Crusoe.

SELKIRKSHIRE. Inland county of Scotland. In the S.E. of the country, its area is 267 sq. m. The surface generally presents a succession of hills, the whole forming part of the forest of Ettrick. The highest points are Broad Law (2,754 ft.) and Lochernig Head (2,625 ft.). The Tweed crosses the county; other rivers are its tributaries, the Ettrick and the Yarrow. Ettrickdale and the vales of the Tweed and Yarrow are noted for their beauty. The chief industry is sheep rearing. The L.N.E. Rly. serves the county. Selkirk is the county town, but Galashiels is the most populous. Pop. 20,100.



Self Heal. Flowering heads and leaves

SELLE. River of France. Rising S. of Le Cateau, it flows in a N. direction, and joins the Schelde at Denain.

BATTLE OF THE SELLE. This was a British-American operation in the Great War, Oct. 17-25, 1918. After the second battle of Le Cateau the German 2nd and 18th armies took up a strong position along the Selle river. In conformity with the general plan of pressing the Germans to the utmost, Haig directed the British 4th army (Rawlinson) to attack this position on a front from Le Cateau, S. for 10 m., while the 1st French army attacked still farther to the S. On Oct. 17 the attack was delivered in thick mist, and most of the tanks crossed the river successfully. Le Cateau itself was taken by an enveloping movement, and the Selle line, as far as a point a little N. of Le Cateau, was in British hands.

The last phase of the battle began on Oct. 23. From the Schelde S. for 5 m., the 1st army engaged the Germans with three divisions; in the centre, the 3rd army attacked with nine divisions; and on the right the 4th army assaulted with four divisions. With the fall of Vendegies au Bois in the afternoon of Oct. 24, the battle closed. The Allies captured 475 German guns and, in addition, 20,000 prisoners. See Le Cateau.

SELOUS, FREDERICK COURTENAY (1851-1917). British traveller. Born in London, Dec. 31, 1851, from 1872 to 1890 he explored



F. C. Selous, British traveller
Sutane

and hunted in Matabeleland and the country between the Transvaal and the Congo, becoming friendly with Lobengula, who granted him many privileges. He fought in the Matabele war of 1893, and took part in quelling the Matabele rising in 1896. On the outbreak of the Great War Selous joined the forces in East Africa. He received his captaincy the following August, and was awarded the D.S.O. in Sept., 1916. He was killed in E. Africa, Jan. 4, 1917. Selous was the original of Rider Haggard's hero Allan Quatermain. Pron. Seloo.

SELSDON. Nature reserve at Sandstead, Surrey. It covers 168 acres, and in it some of the rarer English birds breed, as its woodland character has been preserved.

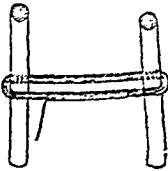
SELSEY or SELSEA. Watering place of Sussex. It is 8 m. from Chichester, with which it is connected by a light rly. Here, in the 7th century, S. Wilfrid founded a monastery and Selsey became the seat of the bishop of the South Saxons. In 1075 the see was removed to Chichester. At the end of the peninsula is the headland known as Selsey Bill. Pop. 2,307.

SELSTON. Village of Nottinghamshire. It is 9 m. from Mansfield, on the L.M.S. Rly. In the neighbourhood are coal mines and ironworks. S. Helen's church is early English. Pop. 9,000.



Selkirkshire. Map of the lowland county of Scotland

SELVAGEE. Coil formed by winding rope yarn. After winding, the coil is tightly bound together continuously by another length of yarn. Selvagees are used as temporary or improvised slings, and for other purposes in connexion with hoisting apparatus, especially in military engineering.



Selvagee. Diagram illustrating how a selvagee is made

SELVAS (Sp. forests). Almost impenetrable equatorial forests in the basin of the river Amazon. They contain giant trees, below which is an undergrowth of trees of ordinary forest dimensions, the whole interlaced with creepers. The name has been extended to other regions where similar climatic conditions produce similar forests.

SELWYN, GEORGE AUGUSTUS (1719-91). British wit. He was born Aug. 11, 1719, his father being John Selwyn, a Gloucestershire landowner and his mother a witty beauty of the court. He became M.P. for Ludgershall in 1747, succeeded his father in the family estate of Matson in 1751, and was member for Gloucester, 1754-80. Selwyn was chiefly known as a convivial man about town, possessed of a lively wit, and as the hero of numerous anecdotes. He died in London, Jan. 25, 1791.

SELWYN, GEORGE AUGUSTUS (1809-78). British divine. Born at Hampstead, April 5, 1809, he was ordained in 1833, and in 1841 went out to New Zealand as a missionary bishop, doing good work in developing the church in the young colony, where he was during the Maori War. Returning to England in 1867, he was consecrated bishop of Lichfield in 1868, and he was there when he died, April 11, 1878.

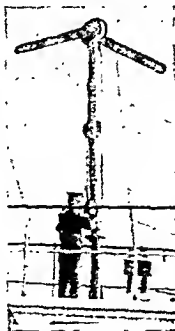


G. A. Selwyn, British divine After Richmond

Selwyn College, Cambridge, perpetuates his memory. It dates from 1882. The chapel was consecrated in 1895, and the hall was built in 1903-9.

SEMANTICS (Gr. *semainein*, to signify). Term invented by Michel Bréal, French philologist. It denotes the study of words of a language in reference to their meaning or meanings, as contrasted with phonetics, the study of the sounds of a language.

SEMAPHORE. Instrument used for signalling between ships, mostly between warships. It consists of an upright post, at the head of which two arms are fixed. By means of handles these arms are swung into different positions, each of which represents a letter of the alphabet, and messages are thus transmitted. A similar form of signalling was formerly employed for sending messages overland, and was superseded by the electric telegraph. See Signalling; Telegraph.



Semaphore on British warship Cribb, Southsea

SEMELE. In Greek mythology, daughter of Cadmus, king of Thebes, beloved by Zeus. Hera persuaded her to ask of Zeus that he should appear before her in all his glory. In the lightning which was the symbol of his majesty, Semele was consumed, after giving birth to a son by him, the god Bacchus or Dionysus. Pron. Semmilce.

SEMRAMIS. Mythical Assyrian queen. Daughter of a Syrian youth and the Syrian fish-goddess, Dereto, she married Onnes, one of the generals of Ninus, and, having heroically taken part in the siege of Bactra, won the king's attention. Her husband then destroyed himself, and Semiramis married Ninus, whom she succeeded. She ruled for forty-two years, conquering many nations and founding Babylon, and then resigned the crown to her son. She is probably identical with the Syrian Venus Astarte. See Assyria. Pron. Se-mirramis.

SEMITES. Name denoting a group of peoples, past and present, mostly in W. Asia and E. Africa. Based on the fact that some of them are described in Gen. 10 as descendants of Shem, the name is applied primarily to peoples speaking closely related languages of the Semitic family. The typical Semite is essentially long-headed, tawny white, of medium stature, with black curly hair, strong beard, fine oval face, and straight or aquiline nose.

The classification of these peoples, linguistic rather than racial, is broadly into N. and S. The S. Semites include the Arabians, both the pastoral nomads or Beduins of N. Arabia and the settled communities in the S., with their migrant offshoots in Abyssinia. The N. Semites penetrated to outlying regions in successive waves of migration. They appeared early in Iraq and Mesopotamia, where they mingled with the riverside dwellers and founded Semitic dynasties in Babylonia and Assyria. Another wave accounts for the Aramaeans of the upper rivers, who may have given rise to the Canaanite peoples. These in their turn absorbed the Hebrew influx after its long contact with Egyptian civilization.

Semitic languages differ profoundly from Indo-European in vocabulary and grammatical structure. A dominant feature is the formation of roots containing three consonants, words being derived from them by vowel-changes, prefixes and suffixes. The only Semitic dialect spoken exclusively by Christians is Maltese. The service rendered by the Semite to the intellectual life of mankind by sharing in the formation and dissemination of alphabetic writing was very great. Apart from religious poetry and idealism, where it reigns supreme, Semitic literature is of secondary rank. See Alphabet table, page 62.

SEMITONE. Smallest interval recognized in European music. It may be described as the distance on the pianoforte from any given note to its immediate neighbour. Semitones are of two kinds: diatonic, having different letter names, and chromatic, having the same letter names for the two notes.

SEMNEH. Ruined fortress in the Anglo-Egyptian Sudan. On the left bank of the Nile, 37 m. S. of Halfa, it was founded, with Kummeh, on the right bank, to guard the new S. frontier of Egypt, by Senusert III, who set up an inscription there urging resistance to Nubian attacks, and built a temple in the fortress, rededicated by Thothmes III to Khnum and the Nubian god Didun (Tithonus). It is the ancient Samnin or Sammina.

SEMOLINA. Middling or coarse particles of the grain produced during the process of grinding wheat. Semolina is largely used in the manufacture of macaroni and is a principal ingredient of many well-known cereal foods, in addition to forming the base of nutritious puddings for domestic use.

SEMPACH. Town of Switzerland, on the E. shore of Lake Lucerne, 9 m. N.W. of Lucerne. It is famous for a battle fought

July 9, 1386, between Leopold, duke of Austria, and the Swiss. The nature of the country compelled the Austrian knights to dismount, and a stubborn fight ensued, in which the Swiss proved the victors. It was in this battle that Arnold von Winkelried is said to have broken the hostile line by drawing to his breast a group of spears.

SEN. Japanese bronze coin, the one-hundredth part of a yen. Its nominal value is one farthing. It is coined in silver pieces of 50, 20, and 10 sen; in nickel 5-sen bits, and also in bronze half-sen or 5 rin.

SENATE (Lat. *senatus*, council of elders). In Rome, originally a council of patres or heads of clans or families, chosen by the king, and meeting to advise upon public matters. With the establishment of a republic the senate became the most powerful factor in the new constitution under which Rome was developed from a city state into a world empire. The number of senators varied from 300 in the early times to 1,000 in the time of Julius Caesar. Augustus fixed the number at 600. Under the empire the senate became definitely a law-making body, and was also the supreme judicial authority. With the growth of absolutism the power and importance of the senate gradually diminished.

The word senate has passed into the constitutions of modern states, being sometimes applied to the second chamber of a legislature of two houses. Canada, Australia, S. Africa, France, Italy, and the United States call their second chamber by this name. There are senates in both the parliaments of Northern Ireland and the Irish Free State.

SENECA, LUCIUS ANNAEUS (c. 4 B.C.-A.D. 65). Roman philosopher, dramatist, and statesman, known as Seneca the Younger. Son of the Elder Seneca, he was born at Corduba, in Spain. He became tutor to the young Nero, and after his accession continued in the closest association with him. Later, he fell into disfavour, and in A.D. 65 was accused of conspiracy and was compelled to commit suicide. Many of Seneca's works have been lost, but many have come down to us, including works on philosophy, morals, and science, the latter being of no scientific value. Nine tragedies have also been preserved, which, though quite lacking in dramatic instinct, had great influence upon the drama of the 16th century, being the only extant Latin models of this class of literature. Seneca is at his best in his writings on morals.

His father, known as Seneca the Elder, was a rhetorician of note. Most of his writings have been lost, but ten books of *Controversiae*, disputations on imaginary issues, are extant.

SENEGA (*Polygala senega*). Perennial herb of the order Polygalaceae. A native of N. America, it has a hard creeping root-stock with a ridge along one side, from which several stems arise. The lance-shaped leaves have rough edges, and the white flowers form a single spike. The root-stock, powdered or infused, or a tincture prepared from it, affords an expectorant and diuretic medicine. In large doses it acts as an emetic and cathartic.

SENEGAL. French colony and protectorate of W. Africa. It lies to the S. of the Senegal river. There are three municipal communes, St. Louis (the capital), Dakar (the chief port), and Rufisque. The island of



Sen. Both faces of the Japanese bronze coin. The actual diameter is 1 1/2 in.



Seneca the Elder, Roman rhetorician From a bust

Goree was amalgamated with Dakar in 1929. The colony is administered by a lieutenant-governor. The agricultural products include ground nuts, gum, millet, unize, and castor beans. Ground nuts are the chief export. The colony is traversed by two rlys. from St. Louis to Dakar, and from Thiés, a station on the first rly., to Kayes, in French Suddn. Its area is 74,112 sq. m. Pop. 1,318,287.

The river which gives its name to the colony is formed by a union of the Bakoy and the Bafing. It is 700 m. long and falls into the Atlantic near St. Louis. It is navigable in the wet season as far as Kayes.

SENEGAMBIA. Name formerly applied to the regions between the Senegal and Gambia rivers, W. Africa. In a restricted sense it was applied to the French territories generally N. of Sierra Leone, but in the wider application it comprised roughly the present colonies of Senegal, Gambia, Portuguese Guinea, and French Guinea. Subsequently the name was restricted to the interior districts beyond Senegal which were formed into the Senegambia and Niger territories. See Africa; Senegal; Sudan.

Senlac. Ancient name of the place in Sussex where the battle of Hastings was fought in 1066. See Hastings, Battle of.

SENLEIS. Town of France. It stands on the Nonette, 32 m. from Paris. The chief building is the cathedral dating from the 12th to the 16th centuries, with a finely sculptured portal. There are remains of the castle. The town was occupied for a short time in Sept., 1914, by the Germans. Toeh had his headquarters here Nov. 8, 1918, when the Germans applied for an armistice. Pop. 6,653.

SENNA (Cassia). Large genus of shrubs and herbs of the order Leguminosae. Mostly natives of tropical and warm climates, they have leaves broken up into two rows of leaflets and the flowers are yellow. The dried leaflets of several species constitute the purgative drug senna, of which the best kind (Alexandrian senna) is afforded by *C. acutifolia*, a native of the Nile region. See Cassia.



Sennacherib, King of Assyria. From a bas-relief. British Museum.

SENNACHERIB. King of Assyria, 705-680 B.C. Son of Sargon II, he undertook campaigns against Elam, Cilicia, Phoenicia, and Palestine. Although his siege of Hezekiah in Jerusalem was raised (2 Chron. 32), he despoiled and depopulated Judah, rebuilt Cilician Tarsus, 698, and destroyed Babylon, 689. To his improvements

Nineveh owed its renown. His son Esarhaddon succeeded him. See Assyria; Nineveh.

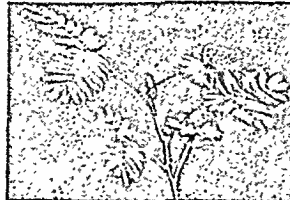
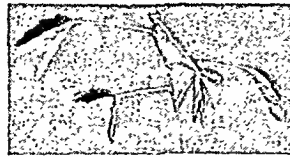
SENNAR. Prov. of the Anglo Egyptian Sudan. It extends from the frontier of Abyssinia almost to the White Nile, and comprises a considerable portion of the valley of the Blue Nile. The capital is Singa. This town of Sennar, situated on the Blue Nile, is connected by rly. with Khartoum and El Obeid.

The Sennar or Makwar dam on the Blue Nile is about 200 m. S.E. of Khartoum, and was opened in 1926. It is 9,925 feet long. The flood waters of the Blue Nile have been impounded in sufficient quantity to irrigate 3,000,000 acres of soil.



Sennar Dam. The great Sennar or Makwar dam on the Blue Nile, opened in 1926.

SENSITIVE PLANT (*Mimosa pudica*). Prickly perennial herb of the natural order Leguminosae. A native of tropical America,



Sensitive Plant. The Brazilian *Mimosa pudica*. Below, with leaves expanded; top, closed.

one which is touched then successively pass through the same movements

SENUSSI. Mahomedan order. Founded in 1835 by an Algerian, Sidi Mahomed ben Ali es Senussi, its headquarters were originally at Alexandria. Later these were moved into the desert, and the Senussi exercised sovereignty over much of the central Sudan, and were powerful throughout the whole of N. Africa. Influenced by Wahhabite puritanism, Senusism sought to recapture the simplicity of early Islam as taught by the Koran.

During the Great War the Senussi, urged on by the Turks and Germans, invaded Egypt in Nov., 1915, their total force, which included Arabs, Berbers, and Turks, numbering 30,000 men. Thereupon the Anglo-Egyptian posts were withdrawn from Sollum and Sidi Barani, and concentrated at Mersa Matruh, where Gen. Waller drove back the Senussi S. and W. of the town in Dec. Sollum, following a British victory near Agagia in Feb., 1916, was reoccupied. Elsewhere the Senussi seized oases and approached close to the Nile. By May, 1916, the British, aided by Italians, had driven the Senussi from Baharia and the S. oases, and the rising was finally crushed.

SEOUL or **KEJO.** Capital of Korea (Chosen). It stands on the river Kan, about 25 m. E.N.E. of Chemulpho (Jinsen), its port. Walls enclose the city, which is an important rly. centre. Pop. 315,000. See Korea.

SEPAL. In botany, one of the outer protecting floral leaves. The sepals collectively are known as the calyx, and if united by their edges the calyx is said to be gamosepalous. As a rule sepals are green, but in the absence of petals they are brightly coloured. See Flower.

SEPARATION. In English law, term generally used in the matrimonial sense. It describes (1) the state of things that exists when a husband and wife cannot agree to live together, and enter into an arrangement for living apart; (2) a separation order by a magistrate; or (3) judicial separation.

Separation orders are granted by police court magistrates. A wife whose husband is convicted of an aggravated assault on her, or of any assault on her for which he has been convicted on indictment (i.e. not at a police court) and fined over £5 or imprisoned for more than two months, or is guilty of persistent cruelty to her or her children, can complain to the magistrates, obtain an order for

separation, and an order for the husband to pay a weekly sum to her for her maintenance and for that of the children. She may also obtain an order if he deserts her or fails to maintain her or the children. If either the husband or wife is an habitual drunkard the other may obtain a separation order. In fixing a separation allowance the court has regard to the means of both husband and wife. The maximum is £2 a week for the wife and 10s. a week for each child under 16.

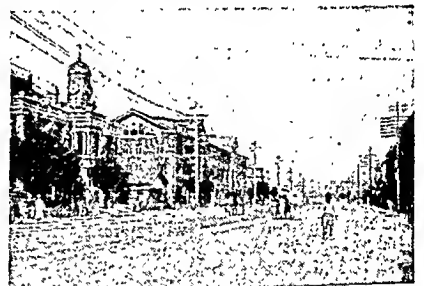
A judicial separation is granted by the Divorce Division of the High Court for cruelty, adultery, or desertion for not less than two years.

SEPIA (Gr. cuttle-fish). Name of a genus of the order Cephalopoda of the phylum Mollusca. (See Cephalopoda; Cuttle).

The name sepia is given to a transparent brown pigment originally derived from the cuttle-fish, but now generally made from the juice of walnuts. It is much used in artists' drawings when it is desired to show the gradation of tones of one colour, and is often combined with pen-and-ink work and other means of heightening an effect.

SEPOY (Persian sipahi, army). Anglo-Indian term for the Indian soldier in European service. The word is now commonly applied to the infantry soldier as distinguished from the sowar or trooper. Sepoys were first raised in trained bands as factory guards by the East India Company in the middle of the 18th century, and formed the nucleus of the company's army in their struggle with the French. During the next 150 years they were employed in various campaigns in Asia and Africa, but it was not until 1914 that they fought in Europe.

SEPT (Old Fr. septe, variant of secte, sect). Term applied to an Irish clan. The old Irish sept was a division of the tribe of which it was an offshoot. The freemen of the sept were theoretically related by blood, and bore the clan name with the prefix Ua, grandson, written O' in English. See Clan.



Seoul, Korea. One of the new business thoroughfares, showing the Y.M.C.A. building on the left.

SEPTENNIAL ACT. Act passed in 1716 fixing seven years as the extreme limit for the duration of a Parliament. In early times there was no such limit, parliaments being dissolved when the king wished or when he died. In 1694 the Triennial Act declared that no parliament should sit longer than three years. In 1716, however, the Jacobite rising had caused great unrest in the country, and to avoid the danger of a general election at such a time the Septennial Act was passed. It remained in force until 1911, when the Parliament Act (q.v.) limited the duration of a parliament to five years. See Parliament.

Septuagesima (Lat. septuaginta). In the ecclesiastical calendar, the third Sunday before Lent, being about the 70th day before Easter.

SEPTUAGINT, THE. Greek version, commonly designated LXX, of the O.T. It is so called from the Lat. word septuaginta, seventy, because, according to a tradition, preserved by Philo, Josephus, and in the so-called letter of Aristas to Philocrates, the translation of the Law (Pentateuch) was made

by seventy or seventy-two translators. On the whole the work of Alexandrian Jews, the version was made gradually and was not completed until nearly the beginning of the Christian era. The Septuagint included the O.T. Apocrypha, and these are interspersed among our canonical books. See Bible.

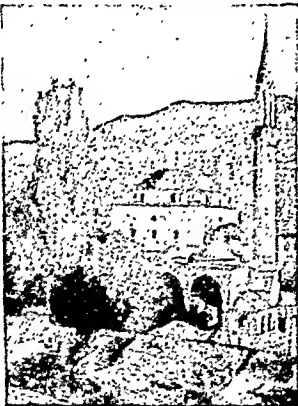
SEPULCHRE (Lat. sepelire, to bury). Tomb or other place of burial. The Holy Sepulchre is the name given to the tomb of Jesus Christ in Jerusalem. The site was identified by Constantine, who built a church there, the successor to which now covers the supposed site of Calvary, as well as that of the tomb. The Holy Sepulchro, in the middle of the church, is now converted into a chapel. Around it are a series of chapels devoted to the purposes of the Latin, Greek, Armenian, and other churches. See Jerusalem.

SERAGLIO (Turk. serai, palace). Former residence of the sultan in Istanbul (q.v.). It crowns the most easterly of the city's seven hills, and is surrounded by a wall, 2 m. round. Mohammed II commenced the building in 1468, and Suleiman II made considerable additions 1520-66: since 1839 it has not been in use and has fallen into decay. It contained the sultan's harem.

SERAING. Town of Belgium. It lies on the right bank of the Meuse, $\frac{1}{2}$ m. by rly. W.S.W. of Liège, and is the centre of a busy industrial area. It is the seat of the famous iron-working and engineering firm known as Cockscill's. Pop. 43,851.

SERAJEVO or **SARAJEVO**. City of Yugoslavia. It stands on the Miljacka, 122 m. S.W. of Belgrade, with which it has rly. connexion.

Several fine stone bridges span the river. Notable buildings are the R.C. cathedral, the 16th-century mosque of Husref Bey, the Konak, or governor's residence, and the town hall. Brewing, silk-weaving, dyeing, and the making of pottery are among the industries. The assassination of the archduke Francis Ferdinand here on June 28, 1914, precipitated the Great War. Pop. 64,500. Pron. Ser-ra-ye-vo.



Sarajevo, Yugoslavia. The 16th-century mosque of Husref Bey

SERAPEUM. Temple of Serapis. The most famous was at Alexandria, founded about 300 B.C., and converted into a Christian church A.D. 389. See Sakkara.

SERAPHIM (Heb. Seraphs). Supernatural beings attendant upon Jehovah and guardians of His sanctuary. In the O.T. they are mentioned only in one passage (Isa. 6, 2). Elsewhere the same word, *sārāph*, means serpent (Num. 21, 6).

The order of the seraphim is the premier Swedish order of knighthood. It was instituted in 1334, revised in 1748, and modified by later statutes.

SERAPIS or **SARAPIS**. Greco-Egyptian deity. Ptolemy I Soter introduced to Alexandria a Greek Hades-image; this was Serapis, and for its worship he erected the Serapeum. Deemed to represent an Egyptian Osiris-Apis, the new cult, in association with Isis, gained prompt recognition in Egypt, and spread

thence through the Greco-Roman world. The most famous temple for the worship of Serapis was at Alexandria.

SERBIA. Former kingdom of S.E. Europe, now the E. part of Yugoslavia. It lies S. of the Danube, between Bosnia, Montenegro, and Albania on the W. and Bulgaria on the E., and adjoins Greece on the S. The region is largely mountainous. Among the rivers are the Morava, Ibar, Vardar, and Timok. As part of Yugoslavia it now controls a long stretch of the Danube navigation between Rumania and Austria, as well as much of the river traffic on the Theiss (Tisza, Tisa), Save, and Drave. It further has access to the Adriatic along the Dalmatian and Croatian coasts. The area is 36,937 sq. m. Pop. 4,129,638.

In 1804 Kara George, the national hero of Serbia and the ancestor of the ruling house of Yugoslavia, led the first Serbian revolt against Turkish rule. It was not, however, until 1867 that Turkish garrisons were finally expelled from Serbia, and not until 1878 that Serbia's complete independence was acknowledged by Turkey. Alexander, the last of the Obrenovitch dynasty, was succeeded on the throne by Kara George's grandson, Peter, in 1903. Austria declared war on Serbia in 1914. In Nov., 1918, King Nicholas of Montenegro was deposed and his kingdom united with Serbia, and in the following month Serbia became the predominant part of the new Serb-Croat-Slovene kingdom called Yugoslavia. See Yugoslavia.

THE CONQUEST OF SERBIA. The Great War began with Austria's declaration of war on Serbia, July 28, 1914. On July 29 the Austrians began to bombard Belgrade, and on Aug. 12 crossed the Drina and occupied Shabatz, and advanced on Valjevo. The Serbians attacked on Aug. 17 and compelled the enemy to evacuate Serbia. The second Austrian invasion (Sept. 8) also met with defeat. A third opened in Nov. and issued in a fresh defeat at Mt. Rudnik (Dec. 12).

In Oct., 1915, a powerful Austro-German invasion was launched. The rapid advance of the enemy separated the N. from the S. Serbian forces. Nisb, the war capital, fell to the Bulgarians on Nov. 5, and by that date the larger part of Serbia, with most of the important rly. to Constantinople, was in the hands of the invaders. The Serbians retreated, and by Dec. 7 the country had been completely overrun and conquered.

Despite dreadful sufferings in the retreat to the coast, more than 100,000 men ultimately reached Corfu, where they were rested and refitted by the Allies. In 1916 the reconstituted Serbian army was transported from Corfu to Salonica, and thence to the Macedonian front. There they participated in all the battles which resulted in the reconquest of Serbia. On Oct. 30, 1918, they were again in possession of their capital, Belgrade.

SERES. Town of Greece. The ancient Seris or Sirae, it is 45 m. N.E. of Salonica, and is the capital of the dept. of the same name. It has a cotton industry, and trades in grain, rice, tobacco, wool, hides, and silk cocoons. It is the seat of a Greek archbishop. Seres was occupied by the Bulgarians in 1916 by collusion with the Greek government, and evacuated by them in Oct., 1918, after the armistice granted to Bulgaria by the Allies. Pop., town, 29,640; dept., 186,710.

SERETH or **SIRETUL**. River of Rumania. It rises in the Bukovina, and flows S. across Moldavia to join the Danube 5 m. above Galatz. The little Sereth, Suczawa, Moldava, and Bistritz are its chief affluents. Its length is 291 m. It was the scene of fighting between the Russians and Austro-Germans, Sept., 1915.



Serbia. Peasants from a remote village in their gala dress

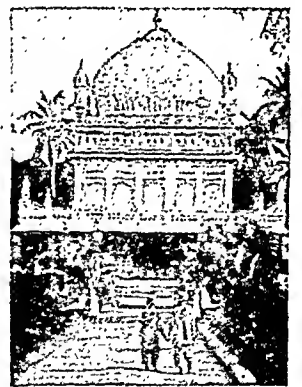
SERF (Lat. servus, slave). In feudal usage, a member of the class of peasants who were bound to the land of their master, which they cultivated.

Historically, serfdom may be regarded as a modified form of the earlier slavery. In England the custom was extinct by the end of the 16th century. In Scotland, however, colliers and salters remained serfs until late in the 18th century. In France the institution was abolished at the time of the Revolution; in Austria and Prussia it survived until the middle of the 19th century. As a result of the Crimean War, the tsar Alexander II began the emancipation of the Russian serfs by liberating those on the imperial domains in 1858, and completed it by the Act of Feb. 19, 1861, which came into full effect in 1863. In all about 23,000,000 serfs were set free. See Feudalism; Manor; Slavery; Villeinage.

Sergeant. Variant spelling of the non-commissioned rank, serjeant (q.v.).

SERINGAPATAM. Town of Mysore, India. On an island in the Cauvery river, 9 m. N.E. of Mysore, it was the capital in the days of Tippoo and Haider Ali, and contains their tombs, Tippoo's mosque, and the ruins of his palace. Pop. 7,217.

On the entry of the British into Mysore in 1790, Tippoo established himself in Seringapatam, which he fortified strongly. The British arrived before it in April and made a breach in the S. wall, May 4, 1790. The city was bravely defended, and Tippoo Sahib lost his life fighting in the breach. See Cornwallis, Earl; Tippoo Sahib.



Seringapatam, India. Mausoleum of Tippoo and Haider Ali, from the palace gardens

SERJEANT or **SERGEANT** (Lat. serviens, serving). Non-commissioned rank in the British army and in the Royal Marines, below that of company, battery, or squadron serjeant-major, and above that of corporal. The chief duties of a serjeant are to maintain discipline in barracks, to teach drill, and in the field to transmit officers' commands. He is distinguished by three inverted chevrons on his sleeves. Serjeant-major is the highest non-commissioned rank in the British army. Regimental serjeant-majors wear the royal arms on the right cuff; other serjeant-majors have a crown.

Serjeant-at-arms is the title of certain officers of the British royal household. One is the lord chancellor's mace-bearer and

attendant in the House of Lords, and another officer performs similar functions for the Speaker in the House of Commons



Serjeant-at-Arms.
The Speaker's
mace-bearer

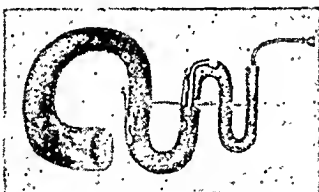
Serjeant-at-law is the term for an English legal order, now extinct. Until 1845 serjeants-at-law had a monopoly in the court of common pleas in term time, but not in vacation. Their mark of office was a coif or skull cap (see illus. p. 430). They had their own inn, Serjeants' Inn, in Fleet Street until 1877.

SERPENS. In astronomy, one of the ancient constellations. The head of the serpent is marked out by five stars in the shape of an X immediately below the semicircle of the Northern Crown. The tail comes to an end in a channel of the Milky Way. The chief star is Cor Serpentis.

SERPENT. Alternative name for the legless reptiles or snakes. To-day serpent is applied to the larger species. See Reptile; Snake.

SERPENT WORSHIP. In olden days serpent worship was prominent in religious cults. In Genesis, as to the Babylonians and Aztecs, the serpent is a spirit of wisdom, and was worshipped as such by the semi-Christian sect of Ophites. A widespread connexion with healing is found in the brazen serpent of Israel, worshipped in Hezekiah's time, in the Greek cult of Aesculapius, and in W. African belief.

SERPENT. Obsolete wind instrument of the cornet (q.v.) type. It was generally made of wood in several pieces joined together and covered with leather, but having a metal crook terminating in the mouth-piece. The conical tube was about 8 ft. in length, bent for convenience in handling into snake-like convolutions, thus giving rise to the name. The normal compass was three octaves. Its soft, woody quality made it a favourite for church use. In France it sustained the Plainsong, and in England it was for long a common member of village church orchestras.



Serpent, an obsolete musical instrument of the cornet type

SERPENTINE. Hydrated magnesium silicate, crystallising in a monoclinic system. It is a soft rock with a glassy or resinous lustre, and varies in colour from yellow to red, green and brown. The chief colour is some shade of green. Though soft, serpentine is durable, and is in great demand as an ornamental building stone. That found in Cornwall is known as serpentine marble. Serpentine rocks are also one of the chief sources of chlorite. See Chromite.

SERPENTINE, THE. Artificial lake in Hyde Park and Kensington Gardens, London. Caroline, queen of George II, in 1730-33 threw several ponds into one, and the sheet of water thus formed was fed by the Westbourne until 1834, when water was supplied from the Thames. The part in Kensington Gardens is called the Long Water. After leaving the park at Albert Gate the Serpentine becomes part of the London main drainage system. In 1930 the Serpentine began to be used for mixed bathing. See Hyde Park; Kensington.

SERPULA. Genus of polychaete (many-bristled) marine worms, belonging to the

phylum Annelida. They construct the chalky tubes so often seen on the shells of scallops and other molluscs. The head bears beautifully coloured plumes—the gill filaments—and an opereulum which closes the mouth of the shell. They are found from shallow water to great depths, specimens having been dredged from 3,000 fathoms.

SERUM THERAPY. Prevention or treatment of disease by an anti-toxic serum. When a dose of bacteria or the toxins produced by bacteria is injected into an animal, the serum of the blood of that animal develops certain substances known as anti-toxins, which neutralise the effect of the poisonous injection. After a succession of gradually increasing doses has been injected the animal is killed, and the serum prepared from its blood may be used for injection into a human being suffering from the disease, or may be given as a preventive. This method has been of value in the treatment of diphtheria and tetanus. See Antitoxin



Serval. Wild cat found in the forests and undergrowth throughout Africa

SERVAL (*Felis serval*). Species of wild cat. Occurring throughout Africa, it is about 4 ft. 6 ins. in total length, and the fur is a rich brownish yellow with black spots. The tail is banded and is a little over a foot long.

SERVICE, ROBERT WILLIAM (b. 1874). Canadian poet. Born at Preston, Jan. 16, 1874, he led a varied life in Canada, and his poems reflect the sterner aspects of life in the wild north-west. His *Songs of a Sourdough* and *Ballads of a Cheechako* have enjoyed great vogue; also his *Rhymes of a Red Cross Man*, prompted by his experiences in the Canadian Medical Corps. The *Trail of '98* is a novel containing vivid pictures of life at Klondike. Later works are *Ballads of a Bohemian* and *The Rough-Neck*.

SERVICE TREE (*Pyrus sorbus*). Tree of the order Rosaceae. A native of Europe and temperate Asia, it resembles the rowan, or mountain ash, but the bark is rough, the leaflets broader and downy on both surfaces, the flowers larger, and the oval fruits four times the size of mountain-ash berries. The colour of the fruits also is different, being greenish brown with dots of rusty red. They are harsh to the taste until touched by frost.

SERVITES. Popular name of the Roman Catholic mendicant order of the Religious Servants of the Holy Virgin. It was founded in 1233. The dress includes a black habit, leather girdle, scapular, and cape. In 1487 Innocent VIII conferred upon the order privileges akin to those bestowed upon the Franciscans, Dominicans and Carmelites.



Serpula. Plumed worm, withdrawn from tube

SERVUS TULLIUS. Sixth legendary king of ancient Rome, 578-534 B.C.

He is the reputed founder of the so-called Servian constitution. Essentially military in character, this formed the basis of a new assembly, *comitia centuriata*, in which the power of wealth predominated. Servius also made an alliance with the Latins, brought the seven hills within the city limits, and surrounded the whole with a ditch and rampart.

SESAME, GINGELLY, OILY GRAIN, OR GINGILI OIL-PLANT (*Sesamum indicum*). Annual herb of the order Pedaliaceae. A native of India, it has opposite, oval leaves and white two-lipped flowers spotted with yellow, red, or purple. The small oily seeds are contained in oblong two-celled capsules. On pressure they yield a tasteless oil, which is used for the adulteration of oil of almonds. Pron. scssa-me.



Sesame. Leaves and flowers of the Indian plant

SESSION (Lat. *sedere*, to sit.) Word meaning a sitting and used in two main senses, political and legal. In the British Parliament, a session is a continuous sitting of Parliament, and usually takes up the greater part of a year. Each parliament consists of a certain number of sessions. A session is ended by a prorogation, but a parliament by a dissolution. In law, the word is used for quarter and petty sessions. In the Presbyterian Church session is the name given to the meeting of the minister and elders.

COURT OF SESSION. The chief law court in Scotland is called the court of session, or college of justice. It consists of two houses, outer and inner, the inner being the court of appeal from the outer. Its judges are called senators. Its headquarters are in Parliament Square, Edinburgh, and from it there is an appeal to the House of Lords. See Parliament.



Robert W. Service
Canadian poet
By courtesy of T. Fisher
Unwin, Ltd.

SESSIONS. In law, term used for the sittings of justices in court upon commission. In England, sessions of the peace is the general term for those sessions held by justices of the peace, which comprise petty sessions, where two or more justices sit to give summary trial for certain minor offences; special sessions, where justices transact such business as granting of licences, etc., for the county division or borough which they represent; quarter sessions or county sessions; and general sessions, where the justices meet to act judicially for the whole region.

SESTERCE (Lat. *sestertius*, for *semitis tertius*, two and a half). Ancient Roman coin at first equal to 2½ asses and subsequently to 4 asses, or something over 2d. in English money. Originally a small silver coin, it became a copper one under the Empire. Its symbol was *IIS* or *HS*.

SET OR SETH. Egyptian deity. Originally a predatory tribal god at Kom Ombo, he came to represent the powers of darkness, and was portrayed as a grotesque



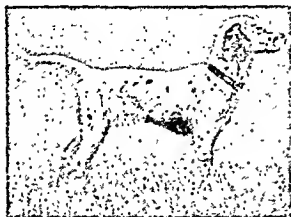
Sesterce. Coin of Vespasian, commemorating, on the reverse, the Conquest of Judaea. Diameter 1½ in.

animal. He was rehabilitated in the XIXth dynasty, whose two monarchs Seti bore his name, and was identified with the Greek Tryphon.

SETI. Name of two Egyptian kings of the XIXth dynasty. Seti I (c. 1300 B.C.) recorded at Karnak his Syrian, Hittite, and Libyan campaigns. His great Abydos temple (see illus. pp. 548 and 1204) and Theban tomb are supreme examples of Egyptian art. His mummy is at Cairo.

SETTER. Large breed of dogs of the spaniel group. They are game dogs, and are trained to crouch down when marking game, instead of standing like the pointer.

Five breeds of setter are recognized, though only three of them are generally met with. The English breed has a wavy, silky coat, while the tail carries a fringe of long, straight hair,



Setter. Compton Daisy, a champion of the English breed

and the toes have hair on the inner sides. The Scottish or Gordon setter, the heaviest breed, has been crossed with a bloodhound. It is black and tan in colour, has coarse hair and a rather short tail. The Irish setter, a smaller and lighter breed, has red hair. The Welsh setter is known by its curly coat.

SETTERWORT or **STINKING HELLEBORE** (*Helleborus foetidus*). Perennial herb of the order Ranunculaceae, a native of W. Europe, and, as a rare wild plant, of the S. and E. of England in chalky soil. It varies in height from a foot to 2 ft., with large, leathery leaves 6 ins. across. The large flowers, which open about February, have conspicuous pale greenish-yellow sepals, the petals being converted into little green tubes containing nectar. After the flower has been slightly open for a few days, a line of dull crimson develops on the margins of the sepals. The seed vessels are large follicles which contain about twelve large black wrinkled seeds. It has a strong fetid odour, and was formerly used in domestic medicine as a vermifuge. See *Hellebore*.

SETTLE. Market town of Yorkshire (W.R.). It stands on the Ribble, 11 m. from Skipton, on the L.M.S. Rly. Folly Hall dates from the 17th century. The industries include cotton mills and tan yards. The town is a good centre for excursions to the Pennine Hills, with their caves. Market day, Tues. Pop. 2,389.

SETTLEMENT. In English law, a transfer of any kind of property to trustees to hold for persons in succession. A settlement can be made by deed or by will. The most usual provisions in a settlement are (1) a trust in favour of the first taker (the tenant for life); (2) trusts in favour of widow (or widower) of the first taker; (3) trusts in favour of the child or children or other offspring of the first taker. It is not lawful to create an unlimited series of life estates. Every settlement must, by its terms, cause the capital (if personalty) or the fee (if realty) to vest absolutely in somebody within the compass of a life or lives in being and 21 years after.

Act of Settlement is the term given to a measure passed by the Parliament of England in June, 1701. It settled the crown of the country, and with it those of Scotland and Ireland, on the electress Sophia of Hanover and her heirs. It is to this Act that George V, as a descendant of Sophia, owes his crown.

SETTLEMENT. In English poor law, the legal right, acquired by residence or otherwise, of a pauper to maintenance in a par-

ticular union or parish. If any person should become chargeable to the poor rate while not residing in his place of settlement, the parish in which he happens to be may hand him over to his place of settlement and charge that place for expense incurred on behalf of the pauper. Settlement can be acquired by birth, by residence as a ratepayer, and by various other means. See *Pauperism*; *Poor Law*.

Settler's Clock. Name for the laughing jackass, a kingfisher of Australasia and New Guinea. See *Laughing Jackass*.

SEVASTOPOL. Port of Russia, in the autonomous republic of the Crimea. It stands on the S.W. coast, and its harbour is capable of accommodating ships of very large tonnage. The port is now closed to trade, being used entirely as a naval station. Pop. 74,703.

The siege of Sevastopol was the principal incident in the Crimean War, 1854-55. After the battle of the Alma, Sept. 20, 1854, the allied armies were able to entrench themselves within a mile of Sevastopol, and on Oct. 17 began to bombard it.

On June 7, 1855, the French carried the Mamelon fortress, which protected the Malakoff works, Sevastopol's chief defence. A furious bombardment was opened by the Allies early in Aug., and the French victory of the Tschernaya, Aug. 16, was the finishing stroke. After a final assault, Sept. 5, Sevastopol was evacuated. See *Alma*; *Crimean War*; *Redan*.

SEVEN BISHOPS. Those who in 1688 petitioned James II against his order commanding the clergy to read on two successive Sundays his second Declaration of Indulgence. The seven were William Sancroft, archbishop of Canterbury; Thomas Ken, bishop of Bath and Wells; Sir Jonathan Trelawny, Bart., bishop of Bristol; Lloyd of St. Asaph, Lake of Chichester, White of Peterborough, and Turner of Ely. In temperate language they declared that the Declaration was illegal, and asked to be excused from reading it. The petition was printed, and the king had the bishops arrested for seditious libel. Tried before three judges, they were found not guilty by the jury.

SEVEN CHAMPIONS OF CHRISTENDOM. Name given in medieval legend to the patron saints of seven countries. Their deeds were celebrated in prose and verse. The champions were: S. George of England, S. Denis of France, S. Anthony of Italy, S. James of Spain, S. Andrew of Scotland, S. Patrick of Ireland, and S. David of Wales.

SEVEN CHURCHES OF ASIA. Name given to the seven principal churches in Asia Minor which were presided over by bishops in apostolic days. They are enumerated in the opening chapters of the Book of Revelation. They were Ephesus, Smyrna, Pergamos, Thyatira, Sardis, Philadelphia, and Laodicea. See *Revelation*, Book of.

SEVEN DIALS. Area in London where seven narrow streets meet. It is between St. Martin's Lane and New Oxford Street, W.C. Once noted for broadsheet hallad printers and ballad-mongers, Seven Dials became a centre for dealers in domestic pets. It contains the Cambridge Theatre, opened in 1930.

SEVENOAKS. Urban dist. and market town of Kent. It is 22 m. from London on the Southern Rly., standing above the Darent, amid picturesque scenery. The church of S. Nicholas dates in part from the 13th century, and the grammar school was founded in the 15th. There is a cricket ground reputed to be one of the oldest in England. In the neighbourhood are some fine country residences, notably Chevening and Knole. Market day, Mon. Pop. 8,830. See *Knole*.

SEVEN WEEKS' WAR. Name given to the war between Prussia and the allied powers of Austria and certain German states, 1866.

The long-standing enmity between Austria and Prussia had caused the latter power to reorganize her army, and Bismarck deliberately sought a quarrel with Austria, with whom stood Bavaria, Württemberg, Baden, Saxony, Hesse-Cassel, Hanover, and Nassau. Strengthened by the secret alliance of Italy, April 8, Prussia declared war, June 14. After several minor successes the Prussians, under William I, encountered the main Austrian army at Sadowa (q.v.) and inflicted a crushing defeat upon it, July 3, 1866. This battle was



Sevastopol, Russia. Southern bay and principal harbour

decisive and the Austrians asked for a truce. The war was ended by the peace of Prague, signed Aug. 23, 1866. By this settlement Austria withdrew from the Bund, ceded Venetia to Italy, and renounced her claims in Schleswig-Holstein, which, with Hanover, Hesse-Cassel, Nassau, and Frankfurt-on-Main, were soon after annexed by Prussia.

SEVEN WONDERS OF THE WORLD. In ancient times, the Hanging Gardens of Babylon, the Pyramids of Egypt, the temple of Diana at Ephesus, the statue of Jupiter by Pheidias at Athens, the Colossus of Rhodes, the mausoleum erected by Artemisia at Halicarnassus, and the Pharos or lighthouse of Alexandria. An extant description of these wonders is attributed to the mechanician Philo of Byzantium (c. 145 B.C.).

SEVEN YEARS' WAR, THE (1756-63). Struggle between, on one side, Great Britain, Prussia, and Hanover, and on the other, France, Austria, Russia, Sweden, Saxony, and finally Spain. It had two main aspects. In one it was a duel between France and Great Britain for supremacy in America and in India; in the other it was the struggle of Prussia against foes encircling her on every side.

The war in India had two phases, the conquest of Bengal, which was only indirectly connected with the French quarrel, and the destruction of the French power in the S. of India. In America partially successful campaigns in 1758 were followed by the siege and capture of Quebec in 1759, whereby the complete conquest of Canada in the next year was ensured. The British fleet won overwhelming supremacy by the virtual annihilation of the French fighting fleet in Hawke's great victory at Quiberon in 1759.

In the actual war on the Continent Great Britain, under the guidance of the elder Pitt, played only a secondary part, i.e. she supplied Frederick with troops and money, and by engaging France in the colonial war, diverted French energies from concentrating against him. Thus the Prussian kingdom had to fight for its life almost single-handed. In 1757 Frederick invaded Bohemia, won the battle of Prague, and was driven out again by his defeat at Kolin. After that he was always on the defensive, threatened by the French on the S.W., the Austrians on the S., and the Russians on the E.

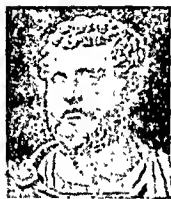
In 1761 the French were practically out of action, and Russia withdrew; so that Frederick was still just able to hold his own against Austria. The war was brought to an end at the beginning of 1763 by the treaties of Paris and Hubertsburg, which gave Canada to Great Britain, left the French without an effective foothold in India, and preserved to Frederick his territories intact as they were before the war. See *Frederick II*.

SEVERN. River of England and Wales. It rises in Wales, in the S.W. of Montgomeryshire, and flows in a great curve to its estuary, a continuation of the Bristol Channel. The chief left-bank tributary is the Warwickshire Avon. The Taff, Usk, Wye, and Leadon are right-bank affluents. On its banks are Gloucester, Shrewsbury, Welshpool, Newtown, and Llaidloes. Its length is about 220 m.

The Severn is a rapid river, and of little use for navigation except in the deeper reaches. At Stowport it connects with the Staffordshire and Worcestershire canals, and at Worcester with the Worcester and Birmingham Canal. At Sharpness the Severn bridge carries the rly. across the estuary. The Severn tunnel, 4 m. 624 yds. long, shortens the rly. journey from Bristol to Cardiff. In the estuary embankments are required against the boro, which sometimes attains a height of 9 ft. It is proposed to utilise the waters of the Severn for generating electricity.

SEVERN. British monitor. Completed in 1913 for the Brazilian government, she was purchased by the British government at the outbreak of the Great War and renamed the Severn. She was used in Oct., 1914, to bombard the Belgian coast, and in 1915 was engaged in the operations against the German light cruiser *Königsberg* (q.v.).

SEVERUS, LUCIUS SEPTIMIUS (A.D. 146-211). Roman emperor, 193-211. Born near Leptis Magna, Africa, he was in command of the legions in Pannonia when the emperor Pertinax was murdered, and was by them proclaimed emperor. After disposing of several rival claimants, Severus turned his attention to the Parthians, and in the course of an expedition against them he took Babylon, Seleucia, and Ctesiphon, the Parthian capital. His eastern victories are celebrated on the arch at Rome which bears his name. The closing years of his reign were occupied with campaigns in Britain from 208. He is said to have rebuilt the wall between the Forth and the Clyde which bears his name. Severus died at York, Feb. 4, 211. See Rome plan, p. 1136.



Septimius Severus,
Roman emperor
From a bust

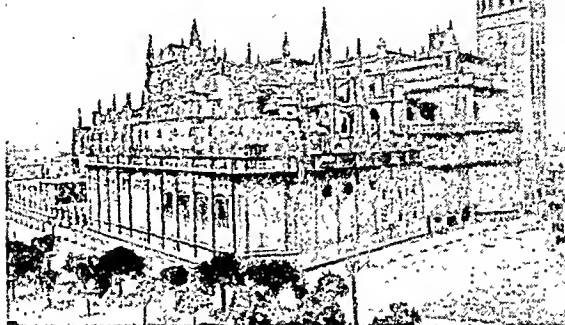
SÉVIGNÉ, MARIE, MARQUISE DE (1626-96). French writer. Born in Paris, Feb. 6, 1626, as Marie de Rabutin-Chantal. She married in 1644 the marquis Henri de Sévigné, who was killed in a duel in 1651. She then settled in Paris, where she educated her children. A woman of great charm and brilliant gifts, she retained her goodness of heart and character unsullied by the corrupt society in which she was a conspicuous figure. The letters which for some 25 years she wrote to her daughter, the comtesse de Grignan, and her many friends, are an enduring monument of her genius. She died April 18, 1696.



Marie de Sévigné,
French writer
After Nanteuil

SEVILLE. City of Spain. It stands on the left bank of the Guadalquivir, 54 m. from the Atlantic. Much of the city lies below high-water level, and is liable to floods. Bridges connect with the suburb of Triana on the right bank. The cathedral, 1403-1519, is one of the finest Gothic buildings in the world; it occupies part of the site of a Moorish mosque, the Court of Oranges being another portion. The Giralda, or bell tower, part of the old mosque, is surmounted by a bronze figure of Faith which is a weather-vane (giralda). The Alcázar has been in turn the palace of Moorish and Spanish kings.

Pilate's House, the Torre del Oro, the palace of the duke of Medinaceli, and the bull-ring are of interest. The museum houses a rich collection of the works of Murillo and Velazquez, both natives of Seville. The exchange contains documents relating to the discoveries on the Spanish Main; and the Columbian library collected by Fernando Colon, the son of Christopher Columbus, is in the cathedral. The university dates from 1256. Pop. 216,511. See Alcázar, illus. p. 46.



Seville. Cathedral from the south-east, showing the Giralda tower

SÈVRES. Town of France. It stands on the Seine, between Paris and Versailles, and is famous for its porcelain factory. In 1756 a factory for making the ware, hitherto associated with St. Cloud, was established here, and in 1759 it became state property. The first porcelain produced was of the soft paste type, but in 1768 hard paste, a mixture of kaolin and felspar, began to be used. Sèvres has always been celebrated for its handsome vases and large decorative pieces, dinner services and biscuit figures and groups. Pop. 14,505. See Chinaware; Pottery.

SÈVRES, TREATY OF. Peace treaty signed August 10, 1920, between the Allies and Turkey. Turkey's sovereignty in Europe was to be restricted to Constantinople. Thrace as far as the Chatalja lines was ceded to Greece, that adjoining this line being managed by an international commission. The straits of Dardanelles, sea of Marmara, and the Bosphorus, with adjacent islands, were put under a commission. Smyrna was put under international control, Armenia was created an independent state. Arab and Syrian territories were separated from Turkish rule. The treaty was never ratified by Turkey, and the treaty of Lausanne (1923) superseded it. See Syria; Turkey.

SEWAGE. Refuse which is carried off by sewers. Sewerage denotes the whole system of sewers in a city or town. A sewerage system is designed to deal with surface water (i.e. non-absorbed rain-water), house sewage, and discharge from factories of the area it serves. Only where sewage can be emptied into the sea without proving offensive or injurious is it allowed to escape untreated. The great majority of sewerage systems terminate in a sewage works, wherein the flow undergoes purification. The "combined" system employs a single set of sewers, into which all sewage and surface water falls. The "separate" system catches the sewage proper in one set of sewers and the surface water in another. Most large cities use the "combined" system of sewage.

Most sewage works purify sewage in two stages of treatment. The first aims at separating the solids from the liquid, or breaking it down into a form suitable for the processes of the second stage. In some processes the heavier solids are allowed to settle by gravitation in large tanks, or the solid contents are precipitated by the action of chemicals. In other

alternative methods the sewage is allowed to stand in beds where aerobic bacteria attack the organic matter and, by combining it with oxygen, render it far less harmful; or the sewage is decomposed in septic tanks by bacteria which liberate hydrogen and cause the formation of nitrogenous compounds.

After some such form of primary treatment the effluent, if not discharged into the sea or tidal water, is either distributed systematically over suitable land, for fertilisation, or passed through artificial filters. In both cases aerobic bacteria complete the oxygenation of organic matter, and in consequence the effluent from a well-designed sewage works is remarkably pure.

SEWARD, ANNA (1747-1899). British poet, called the Swan of Lichfield. Born at Eyam, Derbyshire, she was brought up in Lichfield, where her father became a canon. She is best remembered to-day by her friendship and correspondence with Hayley, Mrs. Piozzi, and Sir Walter Scott. She died March 25, 1809. Of her own works, *Louisa*, 1782, and her *Sonnets*, 1799, are the best known. She also left six volumes of letters. Consult *A Swan and her Friends*, E. V. Lucas, 1907.

SEWARD, WILLIAM HENRY (1801-72). American politician. Born May 26, 1801, he became a lawyer and practised at Auburn, New York. He entered the state legislature, and from 1838-42 was governor of New York. In 1849 he was elected to the Senate at Washington, and there he became one of the leaders of the Republican party. In 1860 Lincoln made him the secretary of state, and he retained that position under the next president, Andrew Johnson, being responsible for the negotiations with Great Britain about the Trent and Alabama difficulties. He resigned in 1869, and died Oct. 10, 1872.



W. H. Seward,
American statesman

SEWING MACHINE. Machine for performing the operation of stitching by mechanical means. The first lock-stitch machine was patented by Elias Howe in 1846, though its essential features had been anticipated by another American inventor, Hunt. Howe's machine was the basis of most modern sewing machines. It was followed by that of A. B. Wilson, of a four-motion feed, and the fixed overhanging arm of I. M. Singer.

The majority of household sewing machines are of the lock-stitch variety. There is a reciprocating eye-pointed needle, which moves through the material being stitched. The material rests on a steel plate, and is automatically moved forward with each stitch by a small toothed bar. A loop is formed when the needle passes through the fabric.

SEX. Quality of maleness or of femaleness which distinguishes most living creatures. Maleness means, in the first instance, the capacity of producing sperm-cells, called spermatozoa in animals, antherozoids in flowerless plants, and generative pollen-cells in most flowering plants. But along with this there generally goes a kind of constitution chemically different from that of the corresponding female. Similarly, female means, in the first instance, the capacity of producing egg-cells or ova; but there is also a

constitutional distinctiveness, demonstrated in some instances and probable in others. A species is typically represented by two contrasted kinds of individual, which are complementary in reproduction.

Sex implies the production of two different kinds of reproductive cells, and it typically implies their production by distinct kinds of individual—the female and the male. In many lower animals, however, the same individual produces both ova and spermatozoa, and is known as a hermaphrodite. Generally these animals do not fertilise their own ova, cross-fertilisation being almost invariable. In very rare cases, such as some flukes and tape-worms, self-fertilisation does occur. Another peculiar condition, parthenogenesis, where the egg-cells develop without being fertilised, is illustrated by the summer generations of green-flies, or Aphides. Fertilisation, in the strict sense, is the intimate and orderly union of two sex-cells. See Animal; Biology; Cell; Evolution, etc.

Sexagesima (Lat. sixtieth). In the ecclesiastical calendar, the second Sunday before Lent. See Calendar.

SEXTANT. Instrument used for measuring angles between distant objects. It forms part of the equipment of the navigator who uses it daily to measure the sun's altitude at noon, in order to determine the latitude of the ship. It consists essentially of a segment of a circle, on which is a scale, D, a telescopic eyepiece, T, a mirror, B, placed at the centre of the circle, but fixed to a movable arm, C, at the end of which is an index to record the angle, and of a fixed half-silvered, half-transparent mirror, A.

The observer sights one distant object through the telescope and through the unsilvered half of the mirror, moves the index arm until he can see the second object in the silvered half of the mirror immediately below the first object. The angle between first and second objects can now be read on the graduated scale. See Navigation.

SEXTET or **SESTER.** Composition for six solo voices or instruments. Specimens are comparatively rare, but Spohr, Raff, Dvorak, and Brahms have essayed this form of composition for strings only. Beethoven wrote two; one for wind instruments, and one for two horns in addition to strings.

SEXTON (contracted from *saecristan*). In the Church of England, a parish official appointed as keeper of the various things used in divine worship. Among his duties are the cleansing, lighting, and heating of the church, the filling-up, and sometimes the digging, of graves, tolling the bell, etc. He is also the assistant to the incumbent in many minor matters connected with the church.

SEYCHELLES. British possession in the Indian Ocean. With its dependencies, the Seychelles group of islands comprises some 100 islands and islets with a total area of 156 sq. m. Mahé, the chief island, accounts for a third of the area. Islets in the main group are Praslin, Silhouette, and La Digue; the dependent islands include the Amirante islands, Cosmoledo group, Assumption, and the Aldabra islands. Formerly administered from Mauritius, the Seychelles was made into a separate colony in 1897. The exports include copra, guano, and cinnamon oil. Victoria, the capital, which is situated on Mahé island, has a good harbour and is an admiralty coaling station. Pop. 27,238.

SEYMOUR. Name of a famous English family, now represented by the duke of Somerset and the marquess of Hertford. It is a variant of St. Maur. John St. Maur, member of a family long settled in Monmouthshire, married, about 1360, an heiress of the family of Beauchamp. His descendant, Sir John St. Maur, who called himself Seymour, was the father of Edward Seymour, who was made duke of Somerset and lord protector. Edward's sister was Jane Seymour, the wife of Henry VIII. A brother was Thomas Seymour (c. 1508–49), who was lord high admiral and married the king's widow, Catherine Parr. He was beheaded March 20, 1549.

Many later Seymours served the state in various ways, and one, Francis Seymour Conway (1718–94), was made marquess of Hertford in 1793. See Hertford, Marquess of; Somerset, Duke of.

SFORZA. Name of Italian family that succeeded the Visconti as dukes of Milan, holding the throne from 1450–1535. The name Sforza (strong) was first given to Muzio Attendolo (1369–1424), the founder of the line. His son made himself duke of Milan about 1450.

The duke's son, Ludovico, called Il Moro (1451–1508), was the patron of Leonardo da Vinci, opposed Charles VIII, and lost Milan to Louis XII in 1499. The last duke of the line was Francesco Maria (1492–1535) who died without heir.

SGRAFFITO (Ital. *sgraffiare*, to scratch). Term applied to certain methods of mural decoration and of pottery work.

In the former, a layer of white plaster is laid over one of black, and the top layer is excised so as to expose the black underneath in the required pattern. In pottery, the term is applied to the process by which a clay of one colour is superimposed upon one of a different, and a design produced by cutting away the outer coating. Examples of 15–17th century sgraffiti are to be seen in the British and Victoria and Albert Museums.

SHABATZ or **SABAC.** Town of Yugoslavia. It is situated on the Save, 38 m. W. of Belgrade. During the Great War it was occupied by the Austrians, Aug. 12, 1914, and evacuated by them twelve days later. It was occupied by them for a short time again in 1914, but they lost it in Dec., after the battle of the Kolubara. It passed to them once more in Sept., 1915, and remained in their hands till Nov., 1918. Pop. 11,969.

SHACKLETON, SIR ERNEST HENRY (1874–1922). British explorer. Born at Killybegs, Ireland, Feb. 15, 1874, he entered the mercantile marine. In 1901 he was in the Antarctic Expedition under R. F. Scott (q.v.), and was secretary to the Royal Scottish Geographical Society from 1903–6. He commanded the British Antarctic Expedition of 1907–9, which ascended Mt. Erebus, reached the south magnetic pole for the first time, and attained a point 97 m. from the South Pole itself. He also commanded the Antarctic Expedition of

1914–17, and in Sept., 1921, sailed from London at the head of the Shackleton-Rowett Antarctic Expedition. He died on board the Quest, Jan. 5, 1922, while his ship was at South Georgia.

Shackleton was knighted in 1909. He wrote *The Heart of the Antarctic*, 1909, and *South*, 1919. See Antarctic.

SHAD. Species of fish of the herring family. It is common about the coasts of Europe and often found in the lower reaches of rivers. It varies in length from one to two feet, and in appearance much resembles a large herring with a few black spots on the sides. See Herring.

Shaddock. Alternative name for the grape fruit (*Citrus decumana*). See Grape Fruit.

SHADWELL. Dist. of E. London. It is in the bor. of Stepney (q.v.), between St. George's-in-the-East and Ratcliff. Shadwell contains the East London Hospital for Children. The Shadwell-Rotherhithe tunnel was opened in 1908. Shadwell Basin forms part of the London docks.

SHADWELL, THOMAS (c. 1642–92). English dramatist. Born of a good Norfolk family, he wrote about 17 plays, which show an intimate knowledge of the London underworld of his day. Dryden, whom he had attacked, and whom he later succeeded as poet laureate, satirised him in *Mac-Flecknoe*, and as *Ogin Absalom* and *Achitophel*. He died Nov. 19, 1692.

SHAFT. Word used in several connexions. In mining a shaft is the opening excavated in the crust of the earth leading down to the workings of a mine. In mechanics, a shaft is a unit of a power transmission system, and usually consists of a round bar of iron or steel, revolving in bearings.

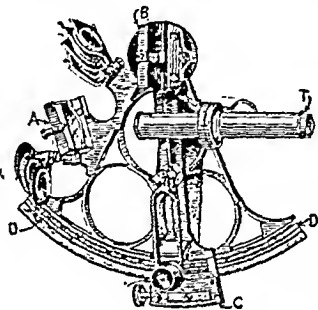
SHAFTESBURY or **SHASTON.** Mun. bor. and market town of Dorset. It is 28 m. from Dorchester, its station being Semley, on the S.R. Shaftesbury is said to have been founded by King Alfred, and at a Benedictine abbey here Canute died in 1035. From 1294 to 1885 it was separately represented in Parliament. The town became the property of the Grosvenor family, but in 1918 Lord Stalbridge sold it. It is an agricultural centre. Market day, Sat. (alternate). Pop. 2,355.

SHAFTESBURY, ANTHONY ASHLEY COOPER, 1ST EARL OF (1621–83). English statesman. He was born July 22, 1621, at Wimborne St. Giles, Dorset, and educated at Oxford. In the Civil War he was first on the king's side, but went over to the Parliament, then quarrelled with Cromwell. At the Restoration he was placed on the privy council, made Baron Ashley and chancellor of the exchequer, 1661. In 1672 he was made earl of Shaftesbury and lord chancellor. As lord president, 1679, he carried the Habeas Corpus Act, and he is notorious for the use he made of the so-called Popish Plot. After at least two attempts at rebellion he fled to Holland in 1682, and died at Amsterdam, Jan. 22, 1683.

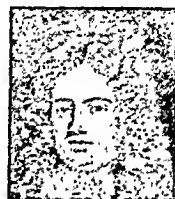
SHAFTESBURY, ANTHONY ASHLEY COOPER, 3RD EARL OF (1671–1713). English philosopher. Born in London, Feb. 28, 1671, son of the second earl, he was educated, privately under the earl on John Locke, at Winchester, and abroad. From 1695–98 he was M.P. for Poole. In 1699 he succeeded to the earldom, and died Feb. 15, 1713. Shaftesbury's ideas were set forward in his *Characteristics of Men, Manners, Opinions, Times*, 1711.



Shad. Common European variety
Clupea alosa or *Allos shad*



Sextant used in navigation. See text



Thomas Shadwell,
English dramatist
After W. Pothorne



Sir Ernest Shackleton,
British explorer
Claude Harris

SHAFTESBURY, ANTHONY COOPER, 7TH EARL OF (1801-85). English philanthropist. Son of the 6th earl, he was born April 28, 1801, and educated at Harrow and Oxford. M.P. for



7th Earl of Shaftesbury. English philanthropist

Woodstock, 1826, Dorchester, 1830-31, and Dorset, 1831-46, he succeeded to the earldom in 1851. He is remembered for his work on behalf of the better treatment of lunatics and for the improvement of working hours and conditions in factories, especially in regard to women and children. Ragged Schools and many kindred institutions likewise owe their existence to him. He died Oct. 1, 1885.

In 1914 the Ragged School Union, of which he was the first president, became the Shaftesbury Society and Ragged School Union.

SHAG OR **GREEN CORMORANT** (*Phalacrocorax graculus*). British bird, common about the coasts. It is distinguished from the common cormorant by its smaller size and greenish plumage. It preys upon fish, which it catches by diving.

SHAGREEN (Turkish and Persian, horse's back). Untanned leather with a granular surface. It is made from the skin of the horse, ass, camel, shark, and ray. The characteristic surface is produced by pressing into the wet skin small seeds, which are removed when the skin is dry. It is usually dyed green. That made from shark's skin is used for polishing wood. Other kinds are used for sword handles, horse trappings, cases and boxes, etc.

Shah. Title of the ruler of Persia. It is an abbr. of padshah, lord king. The Turkish form is padishah.

SHAH JEHAN (fl. 1614-66). Mogul emperor. Son of Jehangir, he ascended the throne in 1627. His reign was one of constant warfare, but the famous Taj Mahal and Pearl Mosque were built and Delhi was founded by him. He made the Peacock throne, valued at £6,000,000, and captured by Nadir Shah, 1759. In 1658 Shah Jehan was imprisoned by his son Aurangzobe, and died at Agra eight years later.

SHAIBA, BATTLE OF. Fought between the British and the Turks, April 12-13, 1915. On April 12, Turks and Arabs attacked the British at Shaiba, 9 m. S.W. of Basra. General Melliss arrived from Basra with reinforcements, took command, and on April 13 cleared the neighbourhood. Next day Melliss attacked the Turks at Barjasiya, S. of Shaiba, and after severe fighting the Turks were defeated. The losses of the British amounted to 700.

SHAKESPEARE, WILLIAM (1564-1616). English poet and dramatist. He was baptized in the parish church of Stratford-on-Avon, April 26, 1564. His father, John Shakespeare, was the son of a farmer of Snitterfield;



Shakespeare. Supposed death mask, discovered at Mainz, 1849, now at Darmstadt

his mother, Mary Arden, daughter of a farmer of Wilmeote. In 1582 he married Ann, daughter of Richard Hathaway, a farmer of Shottery. A daughter, Susanna, was born within six months of the marriage, and twins—a son, Hamnet, and a daughter, Judith—early in 1585. The son died in his 12th year; the two daughters survived their father. Coming to London in 1587, Shakespeare found

employment at The Theatre, Shoreditch, and was quickly admitted a member of a company of actors, The King's Servants, to which he remained faithful during the rest of his career at The Globe and Blackfriars Theatres, in which he had a share. He first attracted the reading public as a writer of narrative poems (Venus and Adonis, 1593; Lucrece, 1594), but he early turned playwright.

Of the 37 plays assigned to him in his lifetime, Henry VI, Titus Andronicus, Taming of the Shrew, Timon of Athens, Pericles, and Henry VIII he wrote in collaboration with others. The most important of his non-dramatic compositions are his Sonnets, first published in 1609, though earlier circulated in MS. In 1596 an application to the Herald's College was made in his father's name, but in his own behalf, for a coat-of-arms, granted in 1599. As soon as his financial position in London was secure, he acquired much property in his native place; and after 1611 he made Stratford his main home. He died at New



Shakespeare. Monument above the grave in Holy Trinity Church, Stratford-on-Avon, erected before 1623. Below, signature from his will

Place, Tuesday, April 23, 1616, when he had just completed his 52nd year. Two days later he was buried in the chancel of Stratford church, in front of the altar.

His will was proved in London, by his elder daughter Susanna and her husband John Hall, on June 23, 1616. The main part of the poet's estate was left to Mrs. Hall. To his wife he left only "his second best bed, with the furniture" (i.e. the bedding). The First Folio edition of his plays was issued by his fellow actors Heminges and Condell in 1623; the Second Folio in 1632; the Third Folio in 1663; the Fourth Folio in 1685. The first attempt to edit Shakespeare's plays was made by Nicholas Rowe, in 1709, and his successors have been legion, as have been the attempts to assign the works to Bacon and others.

SHAKESPEARE'S WORKS (with approximate date of composition). Henry VI, 1592-93; Titus Andronicus, 1589-90; Love's Labour's Lost, 1591; Two Gentlemen of Verona, 1591; Comedy of Errors, 1591-92; Romeo and Juliet, 1592; Richard II and III, 1593; Venus and Adonis, 1593; Lucrece, 1594; King John, 1594; A Midsummer Night's Dream, 1594; Merchant of Venice, 1594-95; Sonnets,

1594-1604; All's Well That Ends Well, 1596-1601; Taming of the Shrew, 1595-96; Henry IV, 1596-98; Merry Wives of Windsor, 1598; Henry V, 1599; Much Ado About Nothing, 1599; As You Like It, 1599; Twelfth Night, 1600; Julius Caesar, 1600-1; Hamlet, 1602; Troilus and Cressida, 1603; Othello, 1604; Measure For Measure, 1604; Macbeth, 1605-6; King Lear, 1606; Timon of Athens, 1607; Pericles, 1607-8; Antony and Cleopatra, 1608; Coriolanus, 1609; Cymbeline, 1610; The Winter's Tale, 1610-11; The Tempest, 1611; Henry VIII, 1611-12.

SHAKESPEARE'S CLIFF. Precipitous cliff S.W. of Dover. It is supposed to be the "steep" from which, in Shakespeare's King Lear (Act 4, sc. 6), Gloucester seeks to destroy himself. See illus. p. 521.

SHALE. Laminated deposit of clay. Shales vary considerably and grade into slates, sandstones, or limestones. The strongly clayey shales are used in the manufacture of firebricks; limestone shales in the making of Portland cement; iron oxide shales in the manufacture of mineral paint; alum shales in the manufacture of alum.

Bituminous shales or oil shales are valuable sources of petroleum. The crude oil is refined and yields naphtha, paraffin, and kerosene. One ton of shale yields about 40 gallons of oil.

SHALLOT (*Allium ascalonicum*). Small bulbous-rooted member of the onion family. A native of Palestine, the bulbs are edible, and are usually pickled.

SHAMANISM. Form of spirit worship developed in N. Asia. The Tungus name shaman denotes a medicine-man. The cult, reminiscent of early Sumerian demonology, still prevails with the E. Siberian palaeosians and some lamiist Tibetans. The term is often applied loosely to N. American Indian spirit worship.



Shamrock. Species of clover adopted as the Irish national emblem

SHAMROCK, WHITE CLOVER, OR DUTCH CLOVER (*Trifolium repens*). Perennial herb of the order Leguminosae. A native of Europe, N. Africa, Asia, and N. America, it has creeping stems, and the leaves are divided into three small heart-shaped leaflets, often with a curved whitish band near the base.

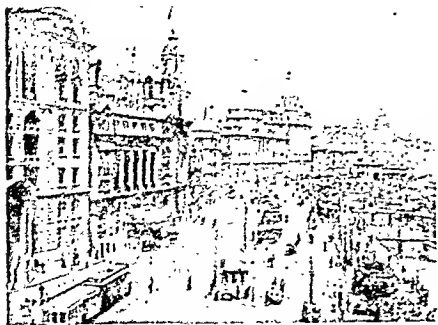
In heraldry, the shamrock is the badge of Ireland. It is supposed to have been adopted by S. Patrick.

SHAMROCK. Name given by Sir Thomas Lipton to the five yachts built by him to compete for the America Cup. Shamrock V competed for the cup in Sept., 1930, but without success. See America Cup; Lipton, T.

SHAN. Burmese name for a people of Tai stock in the Burmese Shan states and S. China. The states are territories of Burma, specially administered. The Northern states have an area of 14,294 sq. m. and a pop. of 459,000. The Southern states have an area of 40,434 sq. m. and a pop. of 900,000. They are traversed by the Salween.

SHANGANI. River of Rhodesia. It flows N.W. to the Gwai river, a S. tributary of the Zambezi. Shangani station is 69 m. by rail from Bulawayo. Alt. 4,507 ft.

SHANGHAI. Seaport of China, in the prov. of Kiangsu. It stands 12 m. from the Yang-tse estuary on the tidal Hwangpu. Soochow creek or Wosung river crosses the city. The native quarter, taken by the nationalists in 1927, is surrounded by walls 3½ m. in circuit with six gates. The European quarter lies N. of the native city and occupies over 9 sq. m. The harbour extends along the river for 6 m. There is railway connexion with Hangchow, Nanking, and Peking. Pop. 2,677,000. See China; also illus. p. 1233



Shaughan, the Bund, the fine waterside thoroughfare of the foreign concessions. See p. 1232

SHANKLIN. Urban dist. and watering place of the Isle of Wight. It is on the S.E. coast, 9 m. from Ryde, is served by the Southern Rly., and has good bathing, a pier, and an esplanade; also chalybeate springs and baths. Behind are the downs. Pop. 7,500.

SHANNON. Longest river of Ireland. It rises in Shannonpot, and flows between the mts. of Cuilcagh and Benbrack to Lough Allen. From the lake it flows S. to the head of the Shannon estuary at Limerick, about 160 m. from the source. The river falls 97 ft. in the 17 m. between Killaloe and Limerick, whence the estuary leads for about 70 m. almost due W. to the Atlantic Ocean. Its width varies between 2 and 10 m. Vessels of 1,000 tons reach Limerick, and small steamers can reach Athlone. The scheme for generating electricity from the waters of the Shannon has been carried out by the firm of Siemens-Schuckert. See Hydro-electric Machinery

Shannon was the name of a 38-gun frigate, commanded by Sir Philip Broke, which on June 1, 1813, during the American War, gave battle to the Chesapeake in Massachusetts Bay, and took her prisoner to Halifax.

SHANNON, CHARLES HAZLEWOOD (b. 1865). British artist and lithographer. Born at Sleaford, Lincolnshire, he was trained at the Slade School, London. His painting is romantic in feeling and marked by graceful and flowing design and rich and harmonious colour. He was elected A.R.A. in 1911 and R.A. in 1921.

SHANNON, SIR JAMES JEBUSA (1862-1923). British-American artist. Born at Auburn, New York, he came to England in 1878, exhibited at the Royal Academy in 1881, and in 1887 showed his full powers as a portraitist with his paintings of Henry Vigne. He was specially successful as a painter of women's and children's portraits. He became A.R.A. in 1907 and R.A. in 1909. He died Mar. 6, 1923.

SHANTUNG. Coast prov. of China. It is situated S. of the gulf of Chihli. Its area is 55,984 sq. m.; estimated pop. 29,600,000. The E. portion, which is mountainous, juts out into the sea for 150 m.; the W. part is a broad plain. Shantung is intersected by the Grand Canal and the Yellow river. The chief products are silk, cotton, beans, ground nuts, and cereals: vermicelli and straw braid are made. Minerals include coal, iron, copper, and gold. By the treaty of Versailles the rights of Germany in this province were transferred to Japan. China asked repeatedly for the withdrawal of the Japanese, but in 1930, although discussions had taken place, they were still in possession.

SHAP. Market town and urban dist. of Westmorland. It is 12 m. from Penrith on the L.M.S. Rly. Granite is quarried, and cattle and horse fairs are held. Shap Fells is a neck of land over which the L.M.S. Rly. and the main road pass. Market day, Mon. Pop. 1,000.

SHARK. Group of primitive fishes with cartilaginous skeletons, of almost world-wide

distribution, but most abundant in tropical and sub-tropical waters. The gills are in from 5 to 7 (usually 5) separate pouches, each with a distinct passage from the back part of the mouth, and a separate exit in the form of a vertical slit on the neck. There are abundant teeth in several rows in each jaw. Among the sixteen species found in the British seas are the hammer-head (*Sphyrna zygaena*); the blue shark (*Carcharias glaucus*); the tope (*Galeorhinus canis*); the smooth hound (*Mustelus canis*); the porbeagle (*Lamna cornubica*), and the thrasher (*Alopias vulpes*).

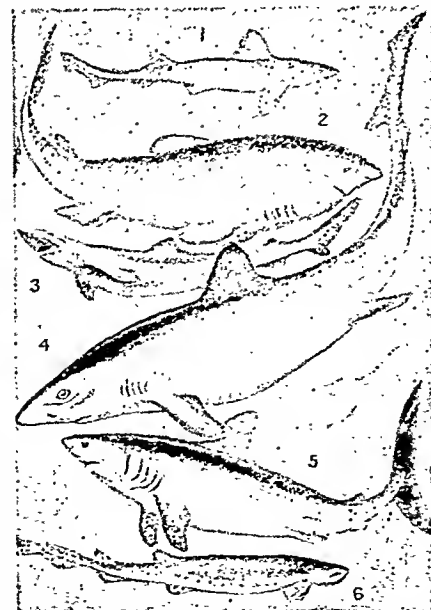
The Greenland shark (*Laemargus borealis*), feeds on whales. Other notable sharks include the enormous but harmless whale shark of the Indian and Pacific Oceans, and the great white shark of the tropics, feared as a man-eater. See Dog Fish.

SHARON, PLAIN OF. Region of Palestine. Noted of old for its beauty and fertility, it lies between Jaffa (Joppa) and Kaisariyeh (Caesarea). It is some 25 m. in length and 8 m. in width. The rose of Sharon was probably the narcissus.

SHARP. Sign used in music to denote the raising of a natural note by one semitone, thus: ♯. In early days the sign for a natural was used for the same purpose. The confusion thus occasioned was remedied towards the close of the 17th century by using a double, X, or a single, X, cross. The former was superseded by the present sign, and the latter (double sharp) now indicates that a natural is to be raised a whole tone.

SHARP, JAMES (1618-79). Scottish p.clate. Born May 4, 1618, he was educated at St. Andrews and Oxford. In 1648 he became a presbyterian minister at Crail, Fifeshire, and during the period of the Commonwealth was one of the leaders of this party. In 1660 he became an episcopalian, and in 1661 was made archbishop of St. Andrews. As primate of Scotland he acted very harshly towards the Presbyterians, and on May 3, 1679, he was murdered by a body of Covenanters on Magus Moor, Fifeshire.

SHARP, WILLIAM (1856-1905). Scottish novelist. Born at Paisley, Sept. 12, 1856, he was educated in Glasgow. Having settled in London, he began to write, and his work



Shark. Principal species of the primitive fish found in most parts of the world. 1. Smooth Hound, 4-5 ft. 2. Greenland shark, 12-14 ft. 3. Tope, 5 ft. 4. White shark, 20 ft. 5. Porbeagle, 10 ft. 6. Nurse Hound, 4-5 ft.

included novels, biographies, and miscellaneous writings. As Fiona Macleod he produced a number of romances of Celtic life, these including *The Mountain Lovers*, *Green Fire*, and *The Winged Destiny*, as well as two plays, *The House of Usna* and *The Immortal Hour*. He died in Sicily, Dec. 14, 1905, and it was only then that it was learned that William Sharp and Fiona Macleod were the same person. A Memoir by his wife appeared in 1910.

SHAT-EL-ARAB or **SHATT-AL-ARAB.** River of Arabia. Formed by the junction of the Euphrates and the Tigris, near Kurna, it flows from the N. past Basra into the Persian Gulf, after receiving the waters of the Karun from the N.E. It is about 100 m. long, with an average width of about 600 yds.

SHAW. District of Lancashire, 3 m. from Oldham, on the L.M.S. Rly., now incorporated in the urban district of Crompton. Its chief industry is the manufacture of cotton.

Shaw House, near Newbury, is a fine Elizabethan building with Civil War associations.

SHAW, ALFRED (1842-1907). English cricketer. Born Aug. 29, 1842, at Burton Joyce, near Nottingham, he proved himself a skilful cricketer. In 1864 he joined the ground staff at Lord's and began to play regularly for Nottinghamshire. For about 20 years, from 1867-87, Shaw was at the top of his powers, and was perhaps the greatest bowler in England, certainly the greatest slow bowler. He played for England against Australia, and went five times to that country and twice to America. He died Jan. 16, 1907.

SHAW, GEORGE BERNARD (b. 1856). Irish dramatist and critic. Born in Dublin, July 26, 1856, he was the only son of a civil servant and millowner belonging to a Protestant family of Yorkshire descent. His mother was a talented musician. He left school in Dublin at 14, and was employed by a land agent until 1876, when he came to London. In 1879 he abandoned office work for literature, and became an early member of the Fabian Society.

Shaw has written much sound musical and dramatic criticism and been a champion of anti-vaccination and vegetarianism. His plays include *Widowers' Houses*, *The Philanderer*, *Mrs. Warren's Profession*, *Arms and the Man*, *Candida*, *The Man of Destiny*, *You Never Can Tell*, *The Devil's Disciple*, *Caesar and Cleopatra*, *Man and Superman*, *John Bull's Other Island*, *Major Barbara*, *The Doctor's Dilemma*, *Getting Married*, *The Shewing Up of Blanco Posnet*, *Misalliance*, *The Dark Lady of the Sonnets*, *Fanny's First Play*, *Androcles and the Lion*, *Overruled*, *Pygmalion*, *Heartbreak House*, *Great Catherine*, *Back to Methuselah*, 1921, *Saint Joan of Arc*, 1923, and *The Apple Cart*, 1929. In 1926 he was awarded a Nobel prize. *The Intelligent Woman's Guide to Socialism* appeared in 1928.

SHAW, JOHN BYAM LISTON (1872-1919). British artist. Born at Madras, India, Nov. 13, 1872, he was taken to England in 1878 and studied art at the St. John's Wood and the R.A. schools. As a painter with a taste for brilliant decorative colour he achieved success, but his reputation depends equally on his black-and-white work, particularly his illustrations to the *Chiswick Shakespeare*. He died Jan. 26, 1919.

SHAW, RICHARD NORMAN (1831-1912). British architect. Born in Edinburgh, May 7, 1831, he studied at the R.A. schools, and beginning practice in 1863 soon made a reputation by his country houses. He was also the architect of Scotland Yard. He died Nov. 17, 1912, having been R.A. since 1877.



G. BERNARD SHAW, Irish dramatist Russell

SHAW, THOMAS (b. 1872). British politician. Born at Colne, April 9, 1872, he began life in a cotton mill. He was made secretary of the international congress of textile workers in 1911. In 1918 he entered Parliament as Labour M.P. for Preston, and he kept his seat at subsequent elections, including 1929. In Jan.-Nov., 1924, minister for labour, he was appointed secretary for war in June, 1929.



Thomas Shaw,
British politician

SHAWINIGAN FALLS. City of Quebec, Canada. It stands on the St. Maurice river, and the falls, 150 ft. high, here generate an enormous amount of electric power. The manufactures are connected with the pulp, aluminium, and lumber industries. Pop. 10,625.

SHAWM (Fr. chalumeau, from Lat. calamus, a reed). Double reed instrument like the oboe, which superseded it, but having a larger conical bore and a wider bell. It is of very ancient origin, and numerous allusions to it may be found in medieval literature. It was made in various sizes from treble to contrabass. Each had a compass of about an octave and a half.

Sheaf. River of Derbyshire and Yorkshire. It rises in the Penk district and falls into the Don at Sheffield. See Sheffield.

SHEARWATER. Name given to a genus of bird related to the petrels. The Manx shearwater (*Puffinus anglorum*) occurs round the S. and W. coasts of Great Britain and Ireland, especially in Orkney and Shetland. The sooty shearwater, greater shearwater, and dusky shearwater are occasionally met with during the winter months.

SHEAT. Large family of fishes, known as the Siluridae. Numbering about a thousand species, they have conspicuous barbels round the mouth and no scales. The skin is smooth, or covered with small bony plates or knobs. Only one species, the Wels (*Silurus glanis*), is known in Europe. It inhabits muddy rivers and feeds on frogs and fish, sometimes seizing water-fowl by the feet and pulling them under.

SHEATHBILL (Chionis). Small group of birds, placed between the snipes and the gulls. Found in S. America and the Falkland Islands, they are about the size of pigeons, have white plumage, and feed on small molluscs and refuse.

SHEBA. Ancient kingdom in the S. part of Arabia Felix. It is celebrated for its gold, frankincense, spices, and precious stones, and its people were known as Sabaeans. Abyssinian tradition dates its royal house from Solomon and the queen of Sheba, but it is doubtful whether Solomon's visitor (1 Kings 10; Matt. 12) came from the Arabian Sheba or from the Ethiopian Seba.

Shebeen. Term applied in Ireland and Scotland to a house where excisable liquor is retailed without a licence, or to a mean inn.

SHECHEM. Ancient name for Nablus, a town of Ephraim. It is near Mount Gerizim and on the road from Jerusalem to the North.

A victory was gained here, Sept. 16-24, 1918, by the British over the Turks. It resulted in the conquest of Palestine and finally crushed the Turkish authority there. Under Sir Edmund (later Lord) Allenby, the British army consisted of 12,000 sabres, 57,000 rifles, and 540 guns. The great majority of the men were Indians. The strength of the Turks and Germans was 36,000 effectives. Opposed to the Turks were also the Hejaz Arab army, with an estimated strength of 40,000. Upwards of 25,000 prisoners were taken, and more than 250 guns. See Palestine.

SHECHINAH (Heb. dwelling). Term used in extra-Biblical Jewish literature. Its use seems to have been suggested by Exod. 40, 35, where a cloud, symbolising God's presence, is said to have dwelt above the tent of meeting. Thus the expression is employed either as a periphrasis for the divine name, to render the language less anthropomorphic, or as a designation of the divine presence and glory (a word associated with it).

SHEE, SIR MARTIN ARCHER (1769-1850). British artist. Born in Dublin, Dec. 20, 1769, he first exhibited at the R.A. in 1791, and took the place of Lawrence as the portraitist of the day. Elected A.R.A. in 1798, he became R.A. in 1800, assisted in the foundation of the British Institution in 1807, and was elected P.R.A. in 1830 and knighted. Shee was a friend of Burke and Byron, and wrote poems, novels, and a tragedy. He died at Brighton, Aug. 19, 1850. See illustration p. 7.

SHEEN, East. District of Mortlake, Surrey. Notable for its handsome villas, it lies between Richmond Park, S., and Mortlake, N.; Sheen Common being on its S.W. border and Palewell Common S.E.

SHEEP. Name applied to ungulate mammals of the genus *Ovis*. In the wild state sheep are usually horned, but the horns of the male are larger than those of the female; there is a characteristic gland between the hoofs; the udder has only two teats; and with one exception, all have short tails. Most are natives of Europe and Asia; but one species occurs in Africa, and another, the Big Horn, in N. America. Structurally domestic sheep are related to the urial and the mouflon but, unlike most wild species of sheep, save one, they have long tails, and wool instead of coarse hair, like the latter.

Of British domesticated sheep the chief long-wool breeds are the Cotswold, Leicester, Lincoln, Kentish, Devonshire, Roscommon, and Wensleydale; short-wool breeds include the Southdown and other "down" sheep, Shropshire, Clun Forest, Suffolk, and Dorset Horn; the chief mountain breeds being the

Cheviot, Blackface, Lonk, Exmoor, and Welsh. Scottish breeds include the Cheviot and Blackface; Wales claims the Kerry Hill and Welsh mountain breeds; and the Roscommon breed is Irish. All the others are of English origin. The horned sheep are the mountain and Dorset breeds. The Cotswold is one of the oldest and the Leicester the champion long-wool breed. See Argali; Big Horn; Mouflon.

Sheep dip is a preparation for curing sheep of a parasitic disease known as sheep scab, due to a mite that burrows in the skin.

SHEEPDOG. Breed of rough-coated, tailless dogs much used by shepherds, drovers, and farmers. If not born tailless, the puppy



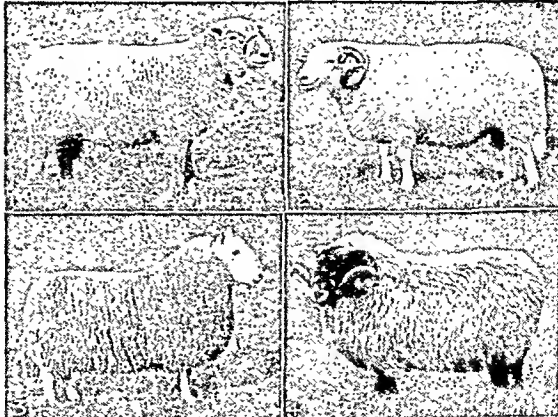
Sheepdog. Brentwood Bob, a champion of the old English breed never be kept chained up or confined in a yard.

SHEEPSHEAD (*Sargus ovis*). American food fish of the family Sparidae. Found along the Atlantic coast of the U.S.A., it grows to a length of 30 ins. and an average weight of about 7 lb. It is deep in the body, marked by seven or eight dark transverse bands. The name is derived from the shape of the head and the prominent incisor teeth. It feeds on small crustaceans and shellfish.

SHEEPSTOR. Village of Devonshire. It stands on Dartmoor, 7 m. from Tavistock. Features of interest are an old bull-ring and a priest's house of the 15th century.

SHEERNESS. Seaport and urban district of Kent. It stands at the mouth of the Medway, on the Isle of Sheppey, on the S.E. The town is divided into Blue Town, Banks Town, Mile Town, and Marine Town. Blue Town is the dockyard quarter. Connected with it are barracks and a coastguard station. The industries of Sheerness centre round the royal dockyard, which is strongly fortified and includes wet and dry docks, storehouses, etc. The modern portion of the town, Sheerness-on-Sea, is a watering place, with good beach, esplanade, and bathing facilities. Market day, Sat. Pop. 18,700.

SHEFFIELD. City of Yorkshire (W.R.). It is situated at the junction of the Don and the Sheaf, on the L.M.S. and L.N.E. Ryss., and has an area of about 53 sq. m. The chief buildings include the town hall, the cathedral church of SS. Peter and Paul, central library, Cutlers' Hall, the city museum, art gallery, Mappin Art Gallery, and Ruskin Museum. Apart from the university, the chief educational centre is the grammar school (King Edward VII). The royal infirmary is the chief of several hospitals. Albert Hall, noted for its organ, is one of several public halls. The Roman Catholic cathedral is a noteworthy. Victoria Hall is a Wesleyan centre. The city



Sheep. Prize rams of the principal British breeds. 1. Southdown. 2. Welsh Mountain. 3. Cheviot. 4. Scotch Blackface
Courtesy of "The Farmer & Stockbreeder"

possesses extensive markets, hotanial gardens, and parks, and there are golf courses and grounds for other sports. A few miles from the heart of the city are the fine ruins of Beauchief Abbey, bought by the corporation in 1930.

In addition to cutlery the manufactures include files, saws, and other tools, armour plate, guns of all kinds, turbines, boilers, projectiles, rly. material, and all kinds of heavy forgings. Silver-plating is an important industry, and attention has been given of late years to the manufacture of glass. Sheffield has a lord mayor. It has been the seat of a bishop since 1915, and returns seven members to Parliament. The Cutlers' Company dates from 1565. Market days, Tues. and Sat. Pop. 519,200.

Sheffield is noted for its Association football clubs. Sheffield Wednesday, now called the Wednesday, was founded in 1866. It won the Association Cup in 1896 and 1907, and was champion of the Football League in 1903 and 1904. The ground is at Hillsborough, Sheffield. Sheffield United won the Cup in 1899, 1902, 1915, and 1925, and was League champion in 1898. The ground is at Bramall Lane.

The university of Sheffield was founded in 1905, being an extension of Firth College, dating from 1879, and including also the Sheffield school of medicine, established in 1828, and the technical school, dating from 1884. The faculties include arts, science, medicine, engineering, metallurgy, and glass technology. There are laboratories of all kinds. The Sheffield Daily Independent was founded Dec. 11, 1819. The Sheffield Daily Telegraph was founded June 8, 1855.

SHEFFIELD PLATE. Name given to articles made of copper and plated with silver by a process of fusion or soldering. In 1742-43 Thomas Boulsover (1704-88), a Sheffield mechanic, discovered a method of fusing copper and silver, which he turned to account in the manufacture of plated articles.

SHEFFORD. Market town of Bedfordshire. It stands on the Ivel, 9 m. from Bedford, on the L.M.S. Rly. Near is the village of Warden, with ruins of an abbey. Pop. 900.

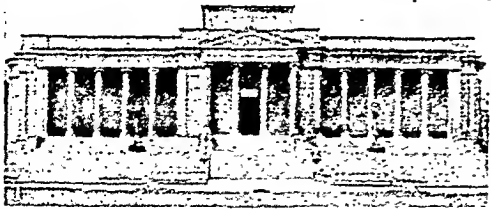
SHEIK OR **SHEIKH** (Arab. old man). Arab title of respect. It is applied to Arab chiefs, headmen of villages, preachers, heads of religious orders or communities, and to local saints. Pron. Sheekh or Shaykh.

SHELL, RICHARD LALOR (1791-1851). Irish dramatist and politician. Born at Drumdowney, co. Kilkenny, he was called to the Irish bar in 1814, adapted several dramas which achieved considerable success, and from 1823-29 supported the agitation for Catholic Emancipation. He sat in Parliament for several Irish constituencies, and was the first Roman Catholic to be made a privy councillor, 1839. Later he became British minister to Tuscany, and he died in Florence, May 23, 1851.

SHEKEL (Heb. weight). Name of a Jewish weight or coin. In the former sense it weighed about 225-253 grs. or 10 dwts. Troy. Fifty shekels went to the maneh, of which sixty went to a talent. As coined, the silver shekel was worth about 2s. 8d., and the gold shekel about £2. No gold shekels are extant.

SHELBURNE, EARL OF. English title borne by the family of Petty. In 1719 Henry

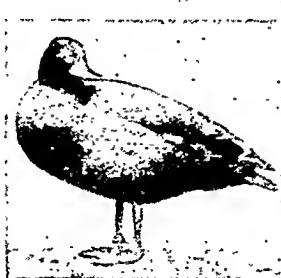
Petty was created earl of Shelburne. In 1751 his estates passed to his nephew John Fitzmaurice, a son of the earl of Kerry. John took the name of Petty, and in 1760 was created earl of Shelburne. His son William was prime minister in 1782-83, and was made marquess of Lansdowne in 1784. See Lansdowne.



Sheffield. 1. Mappin Art Gallery. 2. Cathedral church of St. Peter and Paul

SHELDON, GILBERT (1598-1677). English prelate. Born July 19, 1598, he was educated at Trinity College, Oxford, and ordained in 1622. Imprisoned under the Commonwealth, he was made bishop of London, 1660, and archbishop of Canterbury in 1663, becoming one of Charles II's advisers. He built the Sheldonian Theatre at Oxford. He died Nov. 9, 1677.

SHELDRAKE (Tadorna). Genus of wild ducks, of which two species occur in Great Britain. The common sheldrake (*T. cornuta*) is about 26 ins. long, and the plumage is dark



Sheldrake. Variegated species, or Paradise duck
W. S. Derridge, F.Z.S.

green on the head; green, white, and brown in bands on the neck; black and white on the wings, and dark brown and white beneath. The beak is bright red. The bird holds an intermediate place between the ducks and the

geese, and is found on sandy shores, where it feeds on molluscs and marine worms. The ruddy sheldrake (*T. rutilla*) is an occasional visitant to British shores.

SHELL. Name given to the hard natural outer case of various organisms, e.g. fruits and seeds and birds' eggs, and especially to the external limy or flinty covering or skeleton of certain animals. Strictly speaking, it occurs only in the protozoa, the mollusca, and the brachiopoda. The so-called shell of the crustacea, as the lobster and crab, is a modification of the chitinous skin seen in the insects and other arthropoda. The carapace of the tortoises is a specialised development of the bony skeleton of the animal.

About three-quarters of the molluscs have univalve shells, as in the whelk and snail; and about one-fifth have bivalve shells, as in the oyster and mussel. The small remaining fraction includes the Chitons and a few shell-less species, as the nudibranch sea slugs.

See Bivalves; Egg; Mollusc; Nummulite, etc.

SHELL MONEY. Medium of exchange used from prehistoric times by native tribes of Africa, Asia, America, and Australasia. The

cowry shell is the one most common, but the tusk shell, clam shells, and others, or parts cut and ground from them, have been used.

SHELL. Hollow projectile discharged from guns, mortars, or howitzers. It contains a charge of explosive, incendiary, or illuminating composition, bullets, or chemicals, and is provided with suitable arrangements for discharging its contents at a prearranged point or on impact.

Spherical cast-iron shell made their appearance about 1600 and were general up to 1871. The percussion cap was introduced in 1840-45. Pointed cylindrical shell became general soon after 1880. As an explosive gunpowder was to a certain extent replaced by picric acid after 1886, and by trinitrotoluene after 1902. Since that date a variety of high explosives have been used in common shell.

The Great War saw the introduction of gas shell, which incapacitate troops by the toxic or irritant nature of their contents, and incendiary shells, designed to set fire to buildings and aircraft. See Ammunition; Gun; Howitzer; Shrapnel.

Shellac. Resinous preparation from the Ficus religiosa and other trees. See Lac.

SHELLEY, PERCY BYSSHE (1792-1822). English poet. He was born, August 4, 1792, at Field Place, Warnham, Sussex, the eldest son of Timothy Shelley. Edu-

ated at Eton, and expelled from University College, Oxford, for circulating his pamphlet on The Necessity of Atheism, he made the acquaintance in London of Harriet Westbrook, with whom in 1811 he eloped to Edinburgh, where they were married. By the spring of 1814 Harriet left her husband for a prolonged visit to Bath. During her absence he was frequently at the house of William Godwin, of whose extreme republican writings he was an enthusiastic admirer. Here he met Godwin's daughter, Mary, with whom he eloped to Switzerland in July, 1814, and to whom he was married in Dec., 1816, after his wife's suicide.

Shelley visited Geneva in 1816, and on his return to England issued Alastor and other Poems, in which his wonderful gifts were first seen in their maturity. In March, 1818, he left England, in search of health, for Italy, where his genius developed to its full. The noble tragedy of The Cenci, 1819, was followed by Prometheus Unbound, 1820. The "choral song of the regenerated universe," it is his most characteristic work, great alike in conception and performance. In 1821 he settled at Pisa, where he wrote Epipsychidion, and Adonais, his tribute to Keats. On July 8, 1822, he met his death returning to Lerici by sea from Leghorn. His body was



Mary Wollstonecraft Shelley, British author
After R. Rothwell

burnt some days later, and his ashes buried in the Protestant cemetery at Rome.

His widow, Mary Wollstonecraft Shelley, who lived until Feb. 21, 1851, was the authoress of Frankenstein, the story of a man who created a monster and gave it life.

SHELL FISH. Name given loosely to certain types of edible crustaceans and molluscs, including the lobster, crab, prawn, shrimp, oyster, cockle, mussel, whelk, winkie, etc.

SHELL SHOCK OR **SNISTROSIS.** Term employed during the early years of the Great War to designate the symptoms displayed by a certain number of soldiers after exposure to



Percy Bysshe Shelley, English poet
After A. Curran
Nat. Port. Gall.



Shekel. Both sides of the Jewish silver coin. Actual diameter, 1 1/2 in.

hombardment or shock from an explosion. At first it was believed that the symptoms were actually due to these causes. Later, however, it was found that the condition was really a neurosis such as was already familiar in peace time following the shock of a sudden accident, for example, a railway collision.

SHENSTONE, WILLIAM (1714-63). English poet. The son of a Worcestershire farmer, he went to Pembroke College, Oxford. He was the author of *The Schoolmistress*, a pretty poem written in the Spenserian stanza, and in his *Pastoral Ballads* are to be found faint foreshadowings of the return to nature which was to begin in earnest later on in the century. He died Feb. 11, 1763.

SHEPHERD'S BUSH. Dist. of London. In the hor. of Hammersmith, it has a common, and contains a station on the Central London (tube) Rly. It is also served by the London United Tramways Co. Here are the Hammersmith School of Arts and Crafts and the White City, with its stadium.

SHEPHERD'S PURSE or **PICKPOCKET** (*Capsella bursa pastoris*). Annual weed of the order Cruciferae, a native of Europe, N. Africa, and temperate Asia. It has a rosette of variable, lobed leaves, and a branched stem bearing minute white flowers. The pods are heart-shaped, two-valved, like an ancient purse, containing numerous seeds.

SHEPPARD, JOHN (1702-24). English highwayman. Commonly known as Jack Sheppard, he was born at Stepney, London, took to crime as a lad, and became a daring highwayman and expert thief. He was at the summit of his career in the summer of 1724, when he fell foul of Jonathan Wild. Wild gave him up to justice. After twice escaping from Newgate he was hanged at Tyburn, Nov. 16, 1724. Jack Sheppard furnished the theme for several plays and books, notably Ainsworth's *Jack Sheppard*, 1840. His portrait was painted in Newgate by Sir J. Thornhill.

SHEPPARTON. Township of Victoria, Australia. On Goulburn river, 113 miles by rail from Melbourne, it has extensive irrigation works and cattle yards. Pop. 3,800.

SHEPPERSON, CLAUDE ALLIN (1867-1921). British artist. Born at Beckenham, Kent, Oct. 25, 1867, he was a popular illustrator in black and white and for long a regular contributor to *Punch*. Graceful line and a freshness of colour are seen in his painting. He was elected A.R.A. in 1919, and he died Dec. 30, 1921.

SHEPPERTON. Village of Middlesex. A popular angling resort, it is on the N. bank of the Thames, between Sunbury and Chertsey, on the S.R., 19 m. from London.

SHEPPEY (SHEEP ISLAND). Island of Kent. It is separated from the mainland by the Swale and has an area of about 30 sq. m. Cereals are cultivated in the N. The chief industry is the rearing of sheep. Sheerness and Queenborough are on the W. side.

SHEPSHED. Urban dist. of Leicestershire. It is 3½ m. from Loughborough, on the L.M.S. Rly. Hosiery and gloves are made and quarrying is carried on. Pop. 5,600.

SHEPSTONE, SIR THEOPHILUS (1817-93). South African statesman. Born Jan. 8, 1817, he was taken to Cape Colony as a child, became proficient in the Kafir language, and was secretary for native affairs in the Natal government, 1856-77. Trusted and loved by the natives, his influence was unbounded. Knighted in 1876, he was entrusted with the settlement of the South African states, and in 1877 annexed the Transvaal to Great Britain. He retired in 1880, and died at Pietermaritzburg, June 23, 1893.

SHEPTON MALLET. Market town and urban district of Somerset. Known locally as Shepton, it is 22 m. from Bath, on the G.W.R. The church of SS. Peter and Paul is famous for its oak roof and various memorials. The town has a beautiful hexagonal market cross built in 1500 and a grammar school of the 17th century. The chief industries are brewing and the manufacture of silk, velvet, rope, and pottery. There are stone quarries, plaster works, and an agricultural trade. Market day, Fri. Pop. 4,300.

SHERATON, THOMAS (1751-1806). British furniture designer and cabinet maker. Born at Stockton-on-Tees and self-educated, he settled in London about 1790. He published *Designs for Furniture*; *The Cabinet-maker and Upholsterer's Drawing-Book*, 1791, and *The Cabinet Dictionary*, 1803. Although highly appreciated, he remained very poor, and eked out his livelihood by teaching drawing. He died in London, Oct. 22, 1806.

The Sheraton style, which he introduced, marks a reaction against Chippendale (q.v.), and is influenced by R. Adam and Hepplewhite. It is in the main an English version of the Directoire style. Sheraton was a clever mechanic, and devised folding bedsteads, cabinet-washstands, cellaret sideboards with urns for hot and cold water, knives and spoons, writing tables, and other contrivances.

SHERBET (Arab. sharbat). Oriental beverage made of fruit juices, water, and sugar, and cooled. In Britain the name is given to a powder composed of sodium bicarbonate, tartaric acid or oil of lemon, and sugar; when dissolved in cold water the powder makes a refreshing, effervescent beverage.

SHERBORNE. Market town and urban dist. of Dorsetshire. It is 13 m. from Dorchester on the S.R. The chief building is the church of S. Mary the Virgin. There is a 15th century hospital. Sherborne Castle was built by Sir Walter Raleigh about 1600. Market days, Thurs. and Sat. Pop. 6,400.

The title of Baron Sherborne has been held by the family of Dutton since 1784.

SHERBORNE SCHOOL. This public school was founded as a grammar school in 1550, but it was in a sense the successor of the school of the abbey, as it took over some of the buildings. In 1870 it was refounded, and has now accommodation for 350 boys.



Sherborne, Dorsetshire. The Perpendicular Abbey Church, from the south-west

Frith

SHERBROOKE. City of Quebec, Canada. It stands at the junction of the rivers St. Francis and Magog, 100 m. from Montreal. The industries include the making of clothing, machinery, tools, etc. Mining is carried on in the vicinity. Pop. 26,300.

SHERBROOKE, ROBERT LOWE, VISCOUNT (1811-92). British statesman. Born at Bingham, Notts, Dec. 4, 1811, he was educated at Winchester and University College, Oxford, and became a harrister. From 1842-50 he lived in Sydney. In 1852 he was chosen M.P. for Kidderminster, and from 1853-58 was secretary of the board of control, and then vice-president of the board of trade. From 1859-64 he was vice-president of the council, being responsible for the affairs of the education department. Elected M.P. for the university of London, he became in 1868 chancellor of the exchequer under Gladstone. In 1873 he was transferred to the home office. Created a viscount in 1880 he died at Warrington, Jan. 27, 1892.



Viscount Sherbrooke. British statesman

SHERBURN. Market town of Yorkshire (W.R.). It is 13 m. from York on the L.N.E.R. Its church, mainly Norman, has a noble tower, and there is an old grammar school. Pop. 2,094.



P. H. Sheridan. American soldier

SHERIDAN, PHILIP HENRY (1831-88). American soldier. During the Civil War he came into prominence as a skillful and daring cavalry leader, playing a conspicuous part in the battle of Chickamauga. He commanded the cavalry in the army of the Potomac and the army of Shenandoah, and fought under Grant in Virginia. He conducted the Indian campaigns, 1868-69, and from 1883-88 was commander-in-chief of the U.S. army. He died Aug. 5, 1888.

SHERIDAN, RICHARD BRINSLEY BUTLER (1751-1816). British dramatist and politician. Born in Dublin, Oct. 30, 1751, and educated at Harrow, in 1773 he married Elizabeth, daughter of Thomas Linley, the composer, and settled in London. In 1775 his play *The Rivals* was produced.

On the death of Garrick, Sheridan purchased a share in Drury Lane Theatre, and produced *The School for Scandal* there on May 8, 1777. His next piece was the clever farce *The Critic*, 1779. Elected M.P. for Stafford in 1780, he made his mark as one of the finest orators of his time, his greatest speech being that on the impeachment of Warren Hastings. Later he was an under-secretary in Rockingham's ministry (1782) and a secretary of the treasury in the coalition ministry (1783). He died July 7, 1816, with bailiffs in his house, and was buried in Westminster Abbey. In addition to his gifts as an orator and a dramatist, Sheridan was one of the wittiest men of his own or any age. His three daughters were Lady Dufferin, Mrs. Norton, and the duchess of Somerset.



R. B. Sheridan. British dramatist
After Reynolds

SHERIFF. Public official in Great Britain. The word means shire reeve, and the first sheriffs were officials who looked after the king's property in the various shires or counties. Some of them became hated for their extortions, and Henry II found it

necessary to curb their power and to prevent them from making the office hereditary.

In England and Wales each county has its sheriff called the high sheriff. He is chosen for one year, three names being submitted to the king for the purpose from among the landowners in the county. The chancellor of the exchequer selects one of the three, usually the first on the list, on Nov. 12. In the counties of Lancaster and Cornwall the sheriffs are chosen by the king and the prince of Wales as dukes of Lancaster and Cornwall. There are sheriffs in certain English cities, e.g. Bristol, Norwich, and Nottingham, and the city of London has two.

In Scotland, a sheriff court is a court held nominally by the sheriff of a county, but in practice by the sheriff-deputy, or substitute. The sheriff, who is a lawyer, has also summary jurisdiction in small debt cases and criminal jurisdiction in minor offences.

SHERIFFMUIR, BATTLE OF. Engagement between the Jacobites and Hanoverian forces, Nov. 13, 1715. The Old Pretender ordered the earl of Mar to raise an army in the north, and 9,000 Highlanders flocked to his standard. Mar waited until the royalist army of some 3,500 regulars advanced upon him at Sheriffmuir, 3 m. from Dunblane. The battle was stubbornly fought until, unable to gain a decision, the royalists withdrew.

SHERINGHAM. Urban dist. and watering place of Norfolk. It is 4 m. from Cromer on the L.N.E.R. There are golf links and other attractions. Near are the remains of Beeston Priory. Pop. 4,800.

SHERMAN, JOHN (1823-1900). American politician. Born at Lancaster, Ohio, May 10, 1823, brother of W. T. Sherman, he became a lawyer in 1844. In 1855 he entered the House of Representatives, and in 1861 became a member of the Senate, wherein he remained until 1897 with the exception of four years, 1877-81. Secretary to the treasury, 1877-81, Sherman, who was secretary of state under McKinley, 1897-98, is chiefly known for the silver law of 1890 and for a measure against trusts. He died at Washington, Oct. 22, 1900.

SHERMAN, WILLIAM TECUMSEH (1820-91). American soldier. Born at Lancaster, Ohio, Feb. 8, 1820, he was educated at West Point. During the Civil War he was given the command of the army of Tennessee, and contributed largely to the victory of Shiloh. He assisted Grant in the campaign against Vicksburg and in the battles around Chattanooga, and did brilliant work in Mississippi. In May, 1864, he began the invasion of Georgia, and after defeating General Joseph E. Johnston, undertook his famous march to the sea in Nov. He died Feb. 14, 1891. His Memoirs appeared in 1875.



W. T. Sherman, American soldier

SHERRY. White Spanish wine. Grown between the mouths of the Guadalquivir and Guadalete, it is named from Jerez. The chief varieties are the pale, or dry, and the brown, or sweet. Typical of the former is Manzanilla; of the latter, Amontillado. Other brands are called Fino, Oloroso, and Vino de Pasto, other trade names being palma, raya, and palo.

SHERWOOD FOREST. Former royal forest in Nottinghamshire. It stretched W. from Nottingham as far as Worksop and covered about 200 sq. m. Most of it has been disafforested. King John had a hunting residence here and the forest is associated with the exploits of Robin Hood. The name Sherwood is now that of one of the suburbs of Nottingham. The part of the forest which remains is part of the Dukeries (q.v.).

SHERWOOD FORESTERS. Regiment of the British army. Known also as the Nottinghamshire and Derbyshire Regiment, it was formerly the 45th and 95th Regiments of Foot, the former dating from 1741.



Sherwood Foresters Regimental badge

In the Peninsular War the Foresters were attached to Picton's Fighting Division, and gained the nickname of "The Old Stubborns." They served in the Crimean War, the Indian Mutiny, Egyptian War, 1882, the Tirah campaign, 1897-98, in S. Africa, and had a large number of battalions serving in the Great War. The depot is at Derby.

SJETLAND OR ZETLAND. Group of about 30 inhabited and 70 uninhabited islands off the N. coast of Scotland. They form a co., and with the Orkneys send a member to Parliament. The area is 551 sq. m. The chief industries are the breeding of cattle, sheep, and ponies, and fishing. Lerwick is the capital. They were part of Norway from 875 to 1468, when they were ceded to Scotland. In 1764 they became the property of the Dundas family, who take from them, in the form of Zetland, the title of marquess. Pop. 22,600. See Scotland, map, p. 1214.

SJETLAND PONY OR SHELTY. Smallest British breed of horses. It is produced in the Shetland Isles, and thought to have descended from the British horse of prehistoric times. It stands from 9 to 11 hands high, and has a rough shaggy mane and forelock. See illus. p. 1096.

SHIBBOLETH (Heb. ear of corn, flood). Password of the Gileadites under Jephthah during their war with the Ephraimites (Judges 12, 6). The Ephraimites pronounced the word shibboleth, thus betraying their identity. The word is applied to the watchword or pet phrase of a political or other party.

SHIEL. Loch or lake of Scotland. Forming part of the boundary between Invernesshire and Argyllshire, it extends from Glenfinnan in a S.W. direction for 17 m., and has a breadth of 1 m. and a greatest depth of 420 ft. Its surplus waters are discharged by the river Shiel through Loch Moidart to the sea. At Glenfinnan a monument marks the spot where the Young Pretender unfurled his banner, August 19, 1745.

SHIELD (A.S. scild). Article of defensive armour, carried on the left arm. Its use was widespread until the introduction of firearms. The materials were chiefly wood, hide stretched over a wooden or wicker frame, and metal. In classical times the Greek shield was often round, with a leather apron. Roman legionaries carried an oblong convex shield (scutum) of wood and leather with metal rim. The Normans of the 11th century used the kite-shaped shield, from which was developed the form familiar in heraldry.

In engineering an elaborate mechanical device called a shield is used in tunnelling operations. It consists of a steel-plate cylinder, with a powerful cutting edge at the forward end. The rear end of the shield overlaps the completed tunnel lining. By hydraulic rams the shield is forced slowly forward, and the earth excavated through openings in the end of the cylinder. See Tunnel.

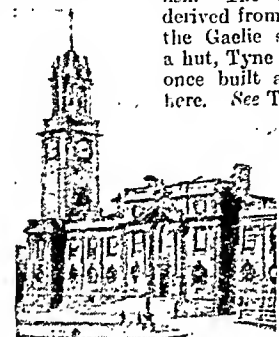
SHIELD OR ESCUTCHEON. In heraldry, the motif, derived from the ancient military protective shield, on which armorial bearings are blazoned. Its shape has varied with fashion, that best adapted for most purposes being the heater, used in this Encyclopedia. Crests should not be displayed on shields; while, strictly speaking, merchants' marks and other devices of a non-heraldic character are also expected. See Heraldry.

SHIELD FERN. Name given to several species of Polystichum. P. aculeatum, the prickly shield fern, has bright green bipinnate fronds which grow to two or three feet. It is an evergreen, common in hedgerows and at the margins of thickets and woods.



Shield Fern, a species common in the English countryside

SHIELDS. NORTH. Seaport of Northumberland, part of the county borough of Tyne-mouth. It stands on the N. bank of the Tyne, 8 m. from Newcastle, on the L.N.E.R., and a steam ferry connects it with S. Shields. There are docks from which coal is exported. Other industries are shipbuilding and the manufacture of cables, anchors, chemicals, rope, etc. It is also a port for fish. The name Shields is derived from a word, akin to the Gaelic shieling, meaning a hut, Tyne fishermen having once built a number of huts here. See Tynemouth.



South Shields, Durham. Portion of the municipal buildings

SHIELDS. SOUTH. Co. bor. seaport, and market town of Durham. It stands on the S. bank of the Tyne, opposite N. Shields. The harbour is accessible to the largest vessels, and there are extensive docks and wharves. The industries include the shipping of coal, the manufacture of glass, chemicals, boilers, cables, etc., and shipbuilding yards. The Lawe was the site of a Roman station. In 1922 it adopted the French town of Catillon-sur-Sambre. One member is returned to Parliament. Market day, Sat. Pop. 123,000.



Shiel. The Scottish loch, with monument showing where the Young Pretender unfurled his flag in 1745

SHIFNAL. Market town of Shropshire. It is 17 m. from Shrewsbury on the G.W.R. St. Andrew's church is a fine cruciform edifice with Norman work. The industries include blast furnaces and iron foundries, and around are coal and ironstone mines. Near by are Tong Castle, Boscobel, and White Ladies. Market day, Tues. Pop. 3,400.

SHITES OR SHIAHS (Arab. shi'ah, party). One of the two chief divisions of Mahomedans, the other being the Sunnis or Sunnites. They regard Ali, cousin of Mahomet, as the Prophet's first true successor.

SHILDON. Market town of Durham. It is 9 m. from Darlington on the L.N.E.R., and is part of the urban dist. of Shildon and E. Thickley. The industries include iron-founding, coal-mining and quarrying. Market day, Fri. Pop. (urban dist.) 14,165.

SHILLING. British silver coin, nominally the 20th part of a pound sterling. Formerly consisting of 925 parts of silver and 75 of other metals, its fineness was reduced to 500 in 1920. First coined by Henry VII in 1504, it received milled edges, to prevent sweating, in Charles II's reign. The Anglo-Saxon "scyilling," value about 5d., was indented with a cross and could be broken into four pieces.

SHILOH. Town in Ephraim, now known as Seilun. Between Bethel and Shechem, and about 19 m. from Jerusalem, it was a resting place of the Ark of the Covenant.

Shin. Loch or lake of Sutherland, Scotland. It is 17 m. long, from $\frac{1}{2}$ to $1\frac{1}{2}$ m. broad, and its depth is 161 ft.

SHINGLE. Rounded alluvial material found on the seashore. The word is employed also for the thin pieces of wood used in roofing.

A shingle, so named from its resemblance to a shingled roof, is one of the ways in which women, since the Great War, have had their hair dressed. The hair is cut and waved to fit closely to the back of the head and neck.

The Shingles is a sandbank between the Isle of Wight and Hurst Castle, $2\frac{1}{4}$ m. long.

Shingles. Acute eruption on the skin characterised by the appearance of groups of small vesicles.

SHINTOISM (Chin. shin-tao, way of the gods). National religion of Japan. Though apparently of native origin, it has affinities with N. Asiatic Shamanism, and has been overlaid with Buddhistic and Confucian ideas. The chief of numerous divinities is Amaterasu, the sun goddess. From her the emperors claim descent. There are no idols, but the souls of the gods are held to inhabit chests in the temples. The ritual is simple and austere. Worship takes the form of offerings, prayers for temporal blessings, litanies read by the priests, and dances. Pilgrimages are frequent, and there are annual festivals. Twice a year there is a day of purification of the people. Reverence for ancestors and loyalty to the state are enjoined. The human heart is held to be essentially good. The spirit passes at death into the shadowy world of Yomi, from which it exerts an influence over posterity. Shintoism contributed to the restoration of the temporal power of the emperor.

SHINTY OR CAMANACHD. Ancient game of the Scottish Highlands. The field varies from 250 yds. to 140 yds. in length and 100 to 70 yds. in width. The goals (hails) are 12 ft. wide and 10 ft. high, backed by a netting. A goal is scored by the ball being hit between the hails into the netting. There are 12 players on a side. The ball, a cork core bound with worsted and covered in leather, is about 2 ins. in diameter and weighs between three and four ounces. The caman or club is a stick with a triangular head. The controlling body of the game is the Camanachd Association.

SHIP. Any vessel intended for navigation, and in particular a sea-going vessel. The earliest ships were built more than 6,000 years ago, when the Egyptians had vessels large enough to carry 50 persons. Other early shipbuilders were the Chaldeans, Hindus, and Chinese. Until the time of Columbus there was but little progress in design. The length was usually less than 100 ft., and the vessels were high at the bows and stern. Such development as occurred took place chiefly in the Mediterranean. Columbus's flagship was 128 ft.

long and had three masts. In the three succeeding centuries ships rarely exceeded 200 ft. in length, and were characterised by full lines and breadth of beam. The Great Harry (q.v.), the first double-decked English warship, was built in 1514. The Ark, the English flagship against the Armada in 1588, was only 800 tons burthen. Nelson's Victory, 1765, was 226 $\frac{1}{2}$ ft. in over-all length, with a tonnage of 2,162.

In 1775 Jouffroy built a paddle steamer which was used on the Saône for 16 months. Fitch's boats on the Delaware (c. 1790), Symington's Charlotte Dundas on the Forth and Clyde canal (1801), Stevens's Phoenix on the Delaware (1809), and Fulton's Clermont on the Hudson (1807) were the earliest successful vessels driven by steam.

Transatlantic voyages under steam began with the Sirius and Great Western in 1838. The early steamers depended on paddles, but screw propellers came into use after 1860. Concurrently sailing vessels were improved. They were built with finer lines, and the spread of sail was increased. The famous clipper ships, designed for rapid travel over long voyages, were used in the tea trade with China, and made the transatlantic passage in 13 $\frac{1}{2}$ days. The fastest of the early clippers were about 215 ft. long, and capable of 330 nautical miles per day. Modern sailing tramps belong to the clipper type or to the

SOME OF THE WORLD'S LARGEST SHIPS

Name	Nationality	Length in feet	Tons Gross
Bremen	German	933	51,658
Europa	German	938	51,000
Majestic	British	915	56,621
Leviathan	U.S.A.	907	59,957
Berengaria	British	832	51,969
Aquitania	British	803	45,047
Olympic	British	852	40,359
Mauretania	British	762	31,938
Ile de France	French	757	43,548
Homerie	French	751	34,351
Britannic*	British	712	26,913
Augustus*	Italian	710	32,650

* Motor Ship.

schooner type, carrying two to seven masts. Representative types of sailing vessels are illustrated in the articles which deal with barque, brig, clipper, cutter, lugger, ketch, sloop, and schooner.

From 1840 to the present time transatlantic steamers have increased in length from 200 to over 900 ft., and reduced the journey, England to U.S.A., to less than five days.

Shipbuilding has been one of the most important industries in the British Isles since very early times. The chief shipbuilding districts are the Clyde, Tyne, Wear, Tees, Humber, Mersey, Barrow-in-Furness, and Belfast. Iron was first used for hulls in 1818, and gave way in the late seventies to mild steel, now universally employed. The great increase in the size of individual ships has been brought about by the demand for greater speeds and more economical working. See Savannah.

SHIP CANAL. Artificial waterway for the passage of sea-going vessels. It may be a link between two seas, or provide access from the sea to an inland town or district, or a navigable river or lake. The Suez Canal is an early example of a ship canal without locks; the Panama Canal is the most notable example of a ship canal with locks. Other important ship canals are the Kaiser Wilhelm or Kiel Canal, connecting the Baltic and North seas; the Corinth Canal, connecting the Adriatic and

Aegean seas; the Manchester Ship Canal; and the Kronstadt to Leningrad canal. Two short but important ship canals at Sault Ste. Marie connect Lakes Superior and Huron; one is in the United States, and the other in Canada. In Canada also is the Welland Canal, uniting Lakes Ontario and Erie.

SHIPKA PASS (Wild Rose Pass) Pass in the Balkan Mts., Bulgaria. It leads from Plevna to Philippopolis (Plovdiv). The summit is 4,370 ft. alt. Some of the distilleries of attar of roses are at Karlovo and Kazanlik at the S. end of the pass.

SHIPLEY. Market town and urban dist. of Yorkshire (W.R.). It stands on the Aire, 3 m. from Bradford, and is served by the L.M.S. and L.N.E. Rlys. The industries include the manufacture of woollens and worsteds. Market day, Fri. Pop. 28,300.

Another Shipley is a mining village in Derbyshire, 7 m. from Derby, on the L.M.S. Rly.

SHIP MONEY. Tax levied by Charles I in 1634. In previous reigns it had been usual for seaport towns to fit out ships to defend the coasts, but only in time of war. Charles, in 1634, demanded ship money from the seaport towns. In 1635 the writs were repeated and sent to inland towns. When the tax was levied for a third time John Hampden (q.v.) refused to pay. The case came before the court of exchequer in 1637. Of twelve judges, seven decided for the king.

SHIPPING. Industry of conveying passengers and goods in ships. In England the first shipping code dates back to the reign of Richard I, and restrictive legislation against foreign shipping was soon initiated; but since 1854, when the coasting trade was thrown open to the ships of every nation, shipping legislation has been designed more with a view to safeguarding life and property at sea than to favour shipowners by excluding their rivals on certain sea routes.

According to Lloyd's Register the gross tonnage of the world's steamers and motor ships at June, 1914, was 45,404,000. At June, 1930, the total was 68,023,804 tons, and the tonnage of sailing vessels was 1,583,840, making the world's mercantile tonnage at that date 69,607,644. The gross tonnage of sea-going mercantile marine vessels belonging to Gt. Britain and Ireland at June 30, 1930, was 20,438,444.

The first six months of 1930 saw a great depression in shipping. Although rates were reduced to an uneconomic level, lower than the pre-war figure, some hundreds of vessels were unable to obtain freights, and were consequently laid up. At the worst period ships totalling over 4,000,000 tons gross were rendered idle. At July 1, 1930, 373 vessels were laid up in British ports as compared with 145 a year previous.

The Ministry of Shipping was a department of the British Government set up during the Great War. It ended March, 1921.

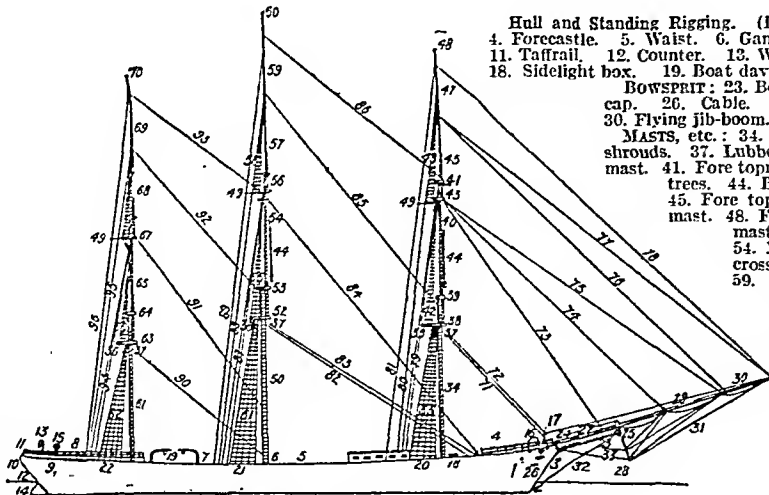
SHIPTON, MOTHER. Legendary English soothsayer. The earliest known reference to her is in an anonymous pamphlet published in London in 1641. W. Lilly, the astrologer, quoted 18 of her predictions in his Collection

of Prophecies, 1645, declaring that 16 of them had been fulfilled.

SHIRAZ. City of Persia. Situated in a fertile valley, on the caravan route between Bushire and Isfahan, it is the capital of the prov. of Fars or Farsistan, and has considerable



Mother Shipton. The legendary prophetess
After Sir W. Osseley



Hull and Standing Rigging. (Left-hand diagram.) HULL: 1. Bow. 2. Cutwater. 3. Stem. 4. Forecastle. 5. Waist. 6. Gangway. 7. Quarterdeck. 8. Poop. 9. Quarter. 10. Stern. 11. Taffrail. 12. Counter. 13. Wheel. 14. Rudder. 15. Binnacle. 16. Cathead. 17. Anchor. 18. Sidelight box. 19. Boat davits. 20. Fore chains. 21. Main chains. 22. Mizzen chains.

BOWSPRIT: 23. Bowsprit. 24. Gammoning (i.e. bowsprit lashing). 25. Bowsprit cap. 26. Cable. 27. Bowsprit shrouds. 28. Dolphin striker. 29. Jib-boom. 30. Flying jib-boom. 31. Martingale stays. 32. Bobstays. 33. Martingale.

MASTS, etc.: 34. Foremast. 35. Foremast rigging or shrouds. 36. Futtock shrouds. 37. Lubber's holes. 38. Fore-top. 39. Fore mast head. 40. Fore topmast. 41. Fore topmast head. 42. Fore topmast rigging. 43. Fore topmast cross-trees. 44. Burtens and pendants (tackle for tightening the upper shrouds).

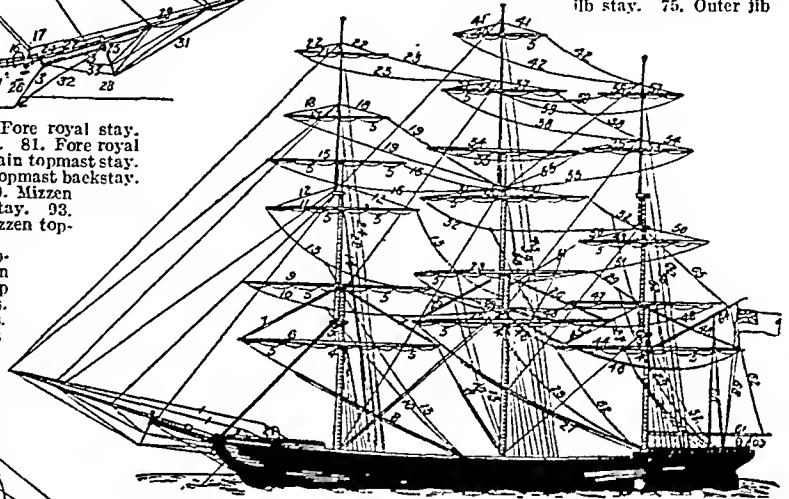
45. Fore topgallant mast. 46. Fore topgallant rigging. 47. Fore royal mast. 48. Fore truck. 49. Backstay outriggers. 50. Main mast. 51. Main mast rigging or shrouds. 52. Main top. 53. Main topmast head. 54. Main topmast. 55. Main topmast rigging. 56. Main topmast cross-trees. 57. Main topgallant mast. 58. Main topgallant rigging. 59. Main royal mast. 60. Main truck. 61. Mizzen mast. 62.

Mizzen mast rigging or shrouds. 63. Mizzen top. 64. Mizzen mast head. 65. Mizzen topmast. 66. Mizzen topmast rigging. 67. Mizzen topmast cross-trees. 68. Mizzen topgallant mast. 69. Mizzen royal mast. 70. Mizzen truck.

STAYS: 71. Fore preventer stay. 72. Fore stay. 73. Fore topmast stay. 74. Inner jib stay. 75. Outer jib

stay. 76. Fore topgallant stay. 77. Flying jib stay. 78. Fore royal stay. 79. Fore topmast backstays. 80. Fore topgallant backstays. 81. Fore royal backstays. 82. Main preventer stay. 83. Main stay. 84. Main topmast stay. 85. Main topgallant stay. 86. Main royal stay. 87. Main topmast backstay. 88. Main topgallant backstay. 89. Main royal backstay. 90. Mizzen stay. 91. Mizzen topmast stay. 92. Mizzen topgallant stay. 93. Mizzen royal stay. 94. Mizzen topmast backstays. 95. Mizzen topgallant backstays. 96. Mizzen royal backstays.

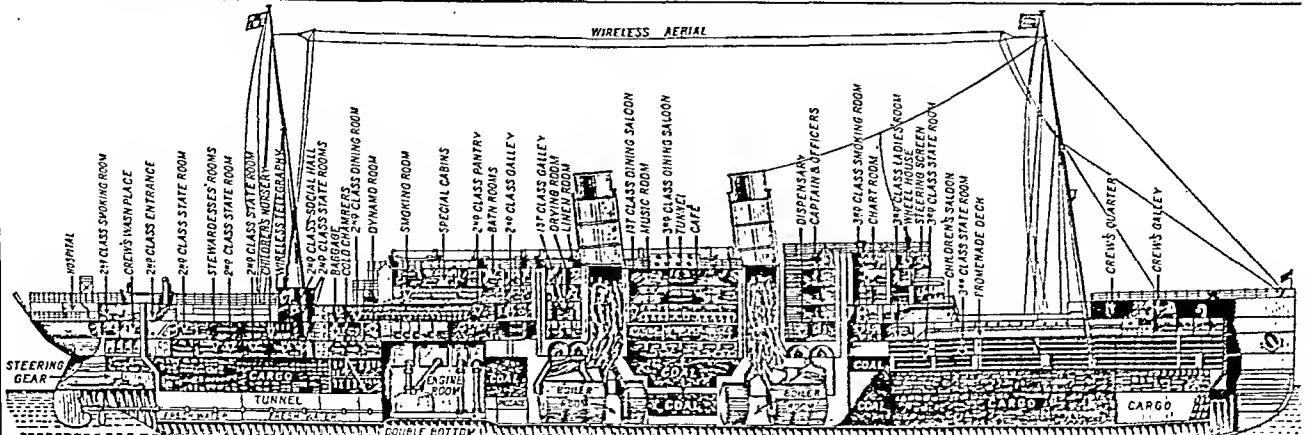
Yards and Running Rigging. (Right-hand diagram.) 1. Jib-boom guys. 2. Whiskers. 3. Slings of fore, main and mizzen yards. 4. Goosenecks of main and mizzen yards. 5. Stlirrup and fntropes. 6. Fore yard. 7. Fore lifts. 8. Fore braces. 9. Lower fore-topsail yard. 10. Lower fore-topsail braces. 11. Upper fore-topsail yard. 12. Upper fore-topsail lifts



13. Upper fore-topsail braces. 14. Upper fore-topsail halliards. 15. Lower fore-topsail yard. 16. Lower fore-topsail braces. 17. Upper fore-topsail yard. 18. Upper fore-topsail lifts. 19. Upper fore-topsail braces. 20. Upper fore-topsail halliards. 21. Fore royal yards. 22. Fore royal lifts. 23. Fore royal braces. 24. Fore royal halliards. 25. Main yard. 26. Main lifts. 27. Main braces. 28. Lower main topsail yard. 29. Lower main topsail braces. 30. Upper main topsail yard. 31. Upper main topsail lift. 32. Upper main topsail braces. 33. Upper main topsail halliards. 34. Lower main topgallant yard. 35. Lower main topgallant braces. 36. Upper main topgallant yard. 37. Upper main topgallant lifts. 38. Upper main topgallant braces. 39. Upper main topgallant halliards. 40. Main royal yard. 41. Main royal lifts. 42. Main royal braces. 43. Main royal halliards. 44. Cross-jack yard. 45. Cross-jack lifts. 46. Cross-jack braces. 47. Lower mizzen topsail yard. 48. Lower mizzen topsail braces. 49. Upper mizzen topsail yard. 50. Upper mizzen topsail lifts. 51. Upper mizzen topsail braces. 52. Upper mizzen topsail halliards. 53. Mizzen topgallant yard. 54. Mizzen topgallant lifts. 55. Mizzen topgallant braces. 56. Mizzen topgallant halliards. 57. Mizzen royal yard. 58. Mizzen royal lifts. 59. Mizzen royal braces. 60. Mizzen royal halliards. 61. Spanker boom. 62. Spanker boom topping lift. 63. Spanker sheet. 64. Spanker gaff. 65. Spanker gaff lift. 66. Spanker vang. 67. Bumpkin. 68. Signal halliards.

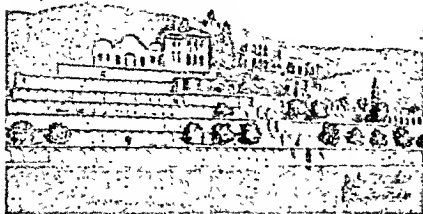
Sails of a ship-rigged vessel.—Jib sails. 1. Flying jib. 2. Outer jib. 3. Inner jib. 4. Jib. Foremast. 5. Foresail or fore course. 6. Lower fore topsail. 7. Upper ditto. 8. Lower fore topgallant sail. 9. Upper ditto. 10. Fore royal. Mainmast. 11. Mainsail or main course. 12. Lower main topsail. 13. Upper ditto. 14. Lower main topgallant sail. 15. Upper ditto. 16. Main royal. 17. Main skysail. Mizzen mast. 18. Cross-jack. 19. Lower mizzen topsail. 20. Upper ditto. 21. Mizzen topgallant sail. 22. Mizzen royal. 23. Spanker. Staysails. 24. Main topmast staysail. 25. Main topgallant staysail. 26. Royal staysail. 27. Mizzen topmast staysail. 28. Mizzen topgallant staysail.

SHIP. DETAILS OF HULL, RIGGING (STANDING AND RUNNING) AND SAILS OF A THREE-MASTED SAILING SHIP



SHIP. Longitudinal section of a Canadian Pacific Rty. liner, of 14,000 tons burthen and 18,000 h.p.; showing disposition of cargo, passenger accommodation, coal bunkers, boilers, and engines. Measurements: length, 548 ft.; breadth, 65 ft.; depth, 36 ft. Internal arrangements vary in detail according to the class and size of vessel, but the above diagram may be considered typical of ocean-going passenger boats

trade in normal times in wine, cottons, gums, opium, and attar of roses. Famous as the birthplace of the poets Hafiz and Sa'di, its inhabitants are credited with speaking the purest Persian in the country. Founded in 697, it was formerly one of the chief centres of the Zoroastrians. Pop. 35,000. See Persia.



Shiraz, Persia. Bagh-i-Takht-i-Kajar, the splendid throne garden and palace to the north of the city

SHIRE (A.S. *sciran*, to divide; cf. *share* and *shear*). In England, term applied from about the 8th century onwards to the districts into which the country was divided. They were ruled by earls or aldermen, whose authority was frequently delegated to a sheriff. In a general way the shire is the same as the modern county, but several counties, e.g. Durham, Norfolk, Surrey, Cornwall, were never called shires. In Ireland county is the usual prefix, e.g. co. Down, co. Kerry. See County; Sheriff.

SHIRE. River of the Nyasaland Protectorate and Portuguese East Africa. It is 295 m. long and forms the S. outlet of Lake Nyasa, passing through the reedy swamp of Lake Malombe. Navigation is obstructed by cataracts. The only important tributary is the Ruo. The chief settlements are Fort Johnston, Liwonde, Chiromo, Port Herald, and Chindio.

SHIREBROOK. Village of Derbyshire. It is 5 m. from Mansfield on the borders of Nottinghamshire, a small stream called the Shirebrook here separating the two counties. Served by the L.N.E. and L.M.S. Rlys., it is a coal-mining centre. Pop. 11,309.

SHIREHAMPTON. District of Gloucestershire. It stands on the Avon, about 4 m. to the N.W. of Bristol, on the G.W. and L.M.S. Joint Rly., and has a public park. During the Great War the place had a large remount depot.

SHIRE HORSE. Breed of horses, believed to be descended directly from the old English war horse. It is large limbed, with full, flowing mane and tail, and the fetlocks are clothed with long, silky hair. The maintenance and improvement of the breed is looked after by the Shire Horse Society. See Horse.

SHIRLEY, JAMES (1596-1666). English dramatic poet. Born in London, Sept. 18, 1596, and educated at Merchant Taylors' School and at Oxford and Cambridge, he was by turns clergyman, schoolmaster, playwright, soldier, and again schoolmaster. Of his plays the best are the comedy *The Lady of Pleasure* and the tragedy *The Traitor*. He wrote some exquisite lyrics, notably "The glories of our blood and state," and excellent dialogue, and dramatised Sidney's *Arcadia*.



James Shirley, English dramatist
After J. Thurston

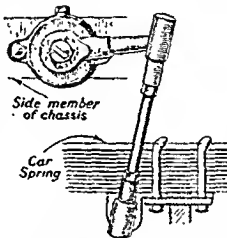
SHITTIM. Wood of an acacia tree (A.

seyal), found in the valleys around and S. of the Dead Sea, Palestine. Hard and close-grained, the wood was largely used in the construction of the Tabernacle.

SHOAL (akin to shallow). Place where the water of a river, lake, or sea shallows. Shoals occur over sandbanks, bars, or reefs, and rise sufficiently close to the water surface to interfere with navigation. Shoals run for hundreds of miles along the West African coast, between Lagos and Freetown.

SHOCK. Condition of general depression of the system associated with a marked fall in the blood pressure, feebleness and irregularity of the pulse, and shallow breathing. Shock results from an injury or surgical operation affecting peripheral sensory or sympathetic nerves, the stimulus being transmitted to the brain and depressing the vital centres. The tendency to shock is increased by any factors which lower the general tone of the body, such as haemorrhage, exposure to cold, or want of food. Psychic factors, such as the nervous expectation of a patient awaiting operation, also play a part.

SHOCK ABSORBER. In engineering this is any arrangement for taking up sudden shocks. The spring fork of a motor cycle or the bumpers of a motor car are examples. The hydraulic shock absorber for motor cars comprises an oil-filled casing with compartments in which vanes are forced round by the action of a lever connected to the car springs, the casing itself being fixed to the chassis. A small hole enables oil to pass easily from one compartment to another when movement of the springs is slow, but rapid oscillations are checked by the damping effect of the oil. See Motor Car.



Shock Absorber. Houdaille type as used on motor cars

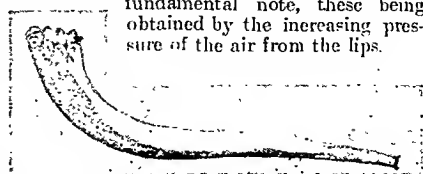
SHODDY (A.S. *seeádan*, to shod). Word loosely used to denote any twice-used wool. Shoddy is the long fibre obtained from shredding stockings, worsted, carpets, and the like. Large quantities of clippings of cloth are converted into shoddy. The chief centre of the industry is Dewsbury. The materials are thoroughly cleansed before unpieking, all cotton threads removed, and sorted into various colours and qualities. They are then oiled to facilitate the separation of the threads and "teased" into a fibrous mass, from which the material can be freshly spun.

SHOE-BILL or WHALE-HEAD (*Balaeniceps rex*). Species of heron, found in N. Equatorial Africa. It has an enormous beak, somewhat like a shoe, very long legs, and grey plumage. It feeds on fish and carrion.

SHOEBURYNESS.

Urban dist. of Essex. It stands on the Thames estuary, 3 m. from Southend-on-Sea, on the L.M.S. Rly., and is noted for its school of gunnery. There are barracks and other military buildings. Pop. (1921) 6,400. Shoebury Ness is a cape near the town where the coast turns to the N.E.

SHOFAR. Hebrew trumpet still used in the modern synagogue. It is the horn of a ram or any clean animal, and produces only the natural series of harmonies from its fundamental note, these being obtained by the increasing pressure of the air from the lips.



Shofar. Hebrew trumpet used on New Year's Day

SHOGUN (Jap. general). Originally, the title of a military commander in Japan. The shoguns became so powerful that they came to be regarded as the temporal rulers of Japan. The shogunate was abolished in 1868. The shogun was also called the tycoon, the Chinese term for "great lord."

SHOOTER'S HILL. London dist. It is part of the bor. of Woolwich, between Woolwich and Eltham. The Castlewood estate, with the tower known as Severndroog Castle, is now public property. On Shooter's Hill are the kennels of the Blue Cross Society and golf links. See Blue Cross.

SHOOTING. Art of using firearms in war and in sport. In war it is more usually known as gunnery or marksmanship, leaving the word shooting in common speech to sport.

In the British Isles the chief objects of shooting as a sport are pheasants, partridges, grouse, rabbits, snipe, etc. The shooting of stags is generally known as deer stalking. Another form, now only possible in a few parts of the world, is big game shooting.

The safest position in which to carry a gun is poised over the shoulder with the trigger guard uppermost. Another safe position is under the arm with the barrel in front pointing towards the ground; and if, in addition, the gun is open at the breech, it will add to the security of the rest of the shooters. Before climbing a gate or getting through a hedge, the cartridges should always be extracted. Extra precaution should be taken when various members of the party are shooting in line. See Close Time; Gunnery.

SHOP (A.S. *seoppa*, stall or booth). Room or building in which goods are sold. The term is also used for a building in which engineering and other manual work is done.

In Great Britain the law about shops is contained in the Shops Act of 1912, and the Shops (Hours of Closing) Act of 1928. Every shop assistant shall have a half-holiday once a week, beginning not later than 1.30 p.m. Shops are to be closed on one afternoon in each week, the day to be fixed by the local authority, but certain classes of shops, e.g. those selling refreshments, are exempt. With some exceptions, shops must be closed at 8 p.m. on every evening in the week but one, when they may stay open till 9 p.m.

No person under the age of 18 may be employed in or about a shop for a longer period than 74 hours, including meal times, in a week. Female assistants must be provided with seats behind the counter, in the proportion of one seat to three assistants. Intervals for meals are also the subject of regulations. See Early Closing; Factory Acts.

SHOP STEWARD. Official of a trade union. Appointed by his fellow-members employed by the same firm, his duties are to collect subscriptions and forward them to the branch secretary, to be cognizant of all matters in dispute, and to report on them to the general or branch secretary; to report promptly any accident to members, and generally to see that the union rules are strictly observed. See Trade Union.



Shoe-bill. Head, showing the broad, heavy beak
W. S. Burridge, F.Z.S.

2 A**

Africa, and N America, it occurs in Britain as a winter visitant, but breeds in a few places in England, Ireland, and the Hebrides.

SHRAPNEL. Type of shell containing a large number of bullets, which are released and travel forward at high velocity when the shell is opened by the bursting charge. Shrapnel was invented in 1784 by Col. Henry Shrapnel (1761-1842), and was adopted in 1803 by the British army. On firing the time fuse is started by percussion mechanism and after a certain length of time, previously set by the gunner, fires the magazine of the fuse, the flash exploding the charge, which blows the fuse out and ejects the bullets. See Ammunition; Artillery; Explosive; Gun; Shell.

SHREW. Family of small insectivorous mammals (Soricidae). There are many species, distributed over most tropical and temperate regions. In general appearance most of them resemble mice, but they usually have long and conspicuous snouts. The common shrew (Sorex araneus), about 3 ins. long in body, has a tail about 1 1/2 ins. in length. It is brownish grey on the back and grey or pale buff below. The ear is very small and is rounded in outline. It lives in burrows in banks, the food consisting of insects, snails, and worms.



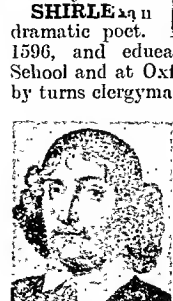
Shrew. Common shrew, the mouse-like insectivorous mammal

The pygmy shrew (S. minutus), smallest of the British mammals, is little more than 2 ins. long in body. The fur is brighter and more silky than that of the common shrew. The water shrew (Neomys fodiens) has a total length of slightly over 6 ins., of which more than 3 ins. is taken up by the tail. It lives in burrows beside streams and ponds, and the entrance is under the water. See Jumping Shrew.

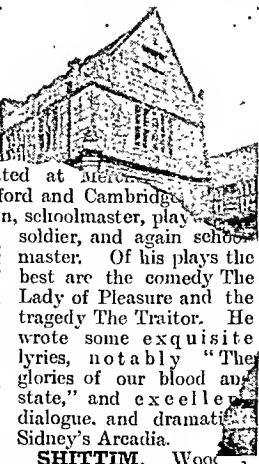
The shrew mole is a genus of insectivorous mammals related to the true moles and found in N. America and Japan. It resembles the common mole, but is much smaller.

SHREWSBURY. Borough, market town and county town of Shropshire. It stands on the Severn, 43 m. from Birmingham, on the G.W. and L.M.S. Rlys. The abbey church has a Norman nave, and S. Mary's a Jesse window. S. Julian's and S. Alkmund's were rebuilt in the 18th century, excepting the altars. There

SHIRLEY a dramatic poet. 1596, and educated at Merchant Taylors' School and at Oxford and Cambridge, by turns clergyman, schoolmaster, play soldier, and again schoolmaster. Of his plays the best are the comedy The Lady of Pleasure and the tragedy The Traitor. He wrote some exquisite lyrics, notably "The glories of our blood and state," and excellent dialogue, and dramatic Sidney's Arcadia.

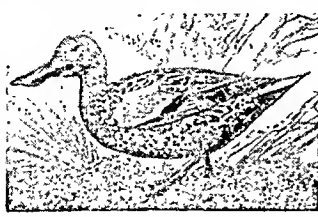


James Shirley, English dramatist
After J. Thurston



SHITTIM. Wood and an acacia tree

house, the council house (1620) and the drapers' hall. The museum and library occupy the old grammar school building. The castle



Shoveller. Broad-billed species of duck, with matured plumage

has been much modernised, but some parts of the Norman building still stand. Shrewsbury is noted for cakes, brawn, and ale; other industries include glass staining, malting, iron founding, and the making of agricultural implements. Having been reconstructed, the English bridge over the Severn was opened by Queen Mary in 1927. The public school, founded in 1552 by Edward VI, has accommodation for about 500 boys. It was in the town until 1882, when it was removed to Kingsland, just outside. Market days, Tues. and Sat. Pop. 31,030.

The battle of Shrewsbury was fought July 21, 1403, between Henry IV of England and a combination of his enemies, led by Hotspur. Hotspur was killed, and his followers fled.

SHREWSBURY, EARL OF. English title borne since 1442 by the family of Talbot. Its holder ranks as the premier earl in the English peerage. John Talbot, the first earl, won fame as a soldier in France during the reign of Henry VI. His descendant George, the 6th earl, was a husband of Bess of Hardwicke, the builder of Hardwicke Hall and other houses and the ancestress of the dukes of Devonshire and Newcastle. Charles, 12th earl, was secretary of state and then lord high treasurer under William III and Anne. In 1694 he was made a duke, but this title became extinct when he died in 1718. The earldom passed then to a cousin, whose direct line died out in 1856, when the title came to H. J. Chetwynd-Talbot, Earl Talbot. Since then the two earldoms have been united. The earl's seat is Ingestre Hall, Stafford, and his eldest son is called Viscount Ingestre.

SHRIKE. Book name for the butcher bird. The genus Lanius includes about 50 species of world-wide distribution, with the exception of S. America. Only one, the red-backed shrike, breeds in Britain; but others are winter visitors. See Bush Shrike; Butcher Bird.

SHRIMP. Popular name for a number of small decapod crustaceans, but applied particularly to the edible brown shrimp (Crangon vulgaris). The brown colour is due to cooking. The natural tint is greenish grey speckled with brown. It differs from the prawn (q.v.) in several respects; the carapace is not extended forward into a long rostrum; only one pair of antennae are at all long; and there are no nippers to the walking feet. It forms a considerable part of the food of flat-fish and stoner shallow water species. It feeds on minute marine organisms and debris, swimming over the sand (to which its coloration assimilates) by incessant motion of its swimmerets. Shrimps are

caught in a large net attached to a T-shaped handle which is pushed over the submerged sands by the wading shrimp.

SHROPSHIRE or SALOP. County of England. With an area of 1,346 sq. m., it is bounded W. by Wales and is crossed by the Severn. Except for the Wrekin, the N. portion is level, but the rest is generally hilly. Ranges are the Clec Hills, Wenlock Edge, and the Breidden Hills. Brown Clec is 1,800 ft. The Severn and its tributaries, Rea, Roden, and others, water the county, which contains Ellesmere and other meres or lakes. Clun Forest and the Wyre Forest are rough, unfertile regions in the south. Shropshire is in the main agricultural, although there is a coal-field around Coalbrookdale. Barley, oats, wheat, and other crops are produced. Shropshire sheep are noted. The G.W. and L.M.S. Rlys. serve the county. Shrewsbury is the county town. Ludlow, Wenlock, Oswestry, Wellington, Bridgnorth, and Newport are other towns. Church Stretton is an inland watering place. It is in the dioceses of Lichfield and Worcester. Pop. 243,062. See map below.



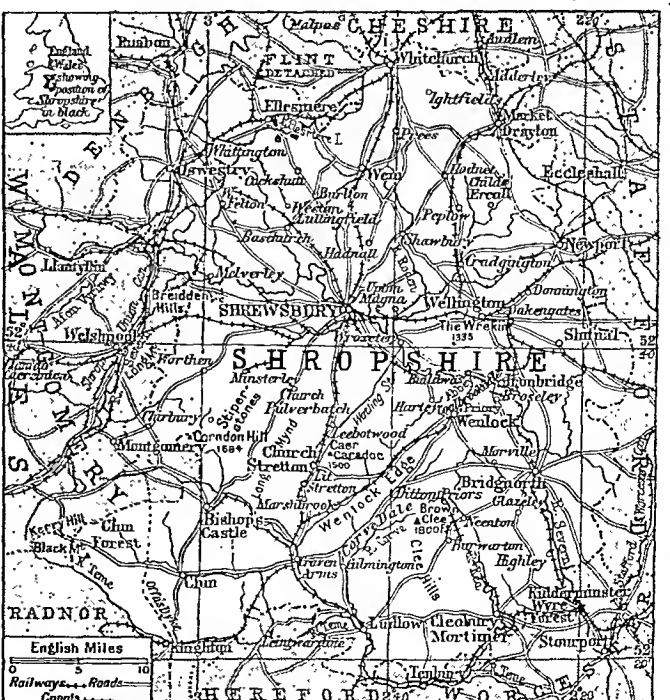
Shrimp. Common edible species found in the shallow waters around the British coasts

SHROPSHIRE LIGHT INFANTRY. THE KING'S. Regiment of the British army. It was formerly the 53rd and 85th of the line, raised in 1755 and 1793 respectively. It won fame in the campaign in Flanders in 1793-95. It went through the Peninsular War, and includes among its battle honours Talavera, Fuentes d'Onoro, Salamanca, and Vittoria. It fought in the Maratha and Sikh Wars, and in the India Mutiny, and later campaigns included the South African War.



Shropshire Light Infantry badge

The regiment had a number of territorial and service, in addition to its regular and



Shropshire. Map of the agricultural county on the border of Wales

reserve, battalions in the Great War. Units of the regiment fought in most of the leading battles of the war. The 1st battalion Herefordshire Regt. is now included in it. The regimental depot is at Shrewsbury.

SHROVE TUESDAY. Popular name for the day preceding Ash Wednesday. As the last day before Lent, in medieval times it was largely a day of preparation for the Lenten fast, penitents being then shriven, whence the name. The day was also characterised by merry making and feasting, a relic of which is the eating of pancakes.

SHRUB. Horticultural term for any perennial, hard-wooded plant which has branches springing immediately from the roots or ground level. Its application appears merely to rest upon convention and custom, in order to distinguish a shrub from a tree, which has a solitary trunk rising from the ground before the branches are produced.

SHRUBB, ALFRED (b. 1878). English long-distance runner. Born at Slinfold, Sussex, Dec. 12, 1878, he won in 1898 his first race, a mile handicap, in 4 min. 38 secs. His later successes include the One Mile championship in 1903 and 1904; the Four Miles, 1902-4; and the Ten Miles in 1901-1904. Shrub held many records, both amateur and professional, for distances from 2-25 m., including the world's amateur records from 6 to 7 m.; and professional and amateur records from 8 to 11 m. He wrote *Long Distance Running and Training*, 1909. See *Running*.

SHUTTLE. In weaving, the weft carrier. It is a wooden piece, pointed and metal-capped at the ends, hollowed in the middle to receive the yarn, and with an eye in the side from which the thread is trailed. The shuttle shoots back and forth across the loom in course of weaving. See *Loom*; *Weaving*.

SIALKOT. District of the Punjab, India. It occupies part of the Rechna doab, between the Ravi and the Chenab, and is irrigated by the Upper Chenab Canal. Wheat is the main crop, and the Jats are the chief tribesmen. The area is 1,991 sq. m. Pop. 937,823.

The town of Sialkot is an important centre of trade. Pop. 70,600.

SIAM. Kingdom of S.E. Asia. It lies between Burma on the W. and French Indo-China on the E., where a considerable portion of the boundary is the Mekong river. To the S.W. a narrow strip of territory, between Burma and the gulf of Siam, connects with the Siamese portion of the Malay peninsula. The area is 200,148 sq. m. Pop. 10,284,000.

Forced labour is still levied on the peasantry, but a poll tax is gradually being substituted. The forests yield large quantities of teak. Tin is obtained in the island of Puket and on the neighbouring mainland. Other minerals include wolfram, coal, iron, zinc, manganese, and antimony. Rice is the staple crop and the main export. Among other exports are tin and teak. Bangkok is the capital and the seat of a university, and is also the centre for rlys., of which there are 1,749 m. of state lines and over 60 m. in private hands. Siam joined the Allies in the Great War, July, 1917, and sent troops and other units to France. The kingdom is a member of the League of Nations. See *Bangkok*.



Siam. A Siamese dancer, in typically gorgeous and elaborate costume



Siam. Map of the progressive native kingdom of south-east Asia

In 1925 the metric system was introduced.

SIAMANG (*Hylobates syndactyla*). Gibbon or long-armed ape, native of Sumatra and the Malay Archipelago. The largest species in the genus, it is distinguished from its congeners by the middle and index toes being united by the skin for half their length. It stands about 3 ft. high, and is of a uniformly black colour, save for a few scattered grey hairs on cheek and chin. The ears are almost hidden by long fur. See *Gibbon*.

SIAMESE TWINS. Name given to Chang and Eng (1811-74), twins joined at birth. They were born of Chinese parents in Siam, and, their breastbones being united by a band of flesh, were sold by their parents for exhibition. They died Jan. 17, 1874, one surviving the other by 2½ hours.

The original twins were succeeded by Rosa and Josepha Blazek, born in 1878 in Bohemia. They toured Europe in 1921, visited the U.S.A., where they contracted jaundice, and died in Chicago on March 30, 1922.

SIBELIUS, JEAN JULIUS CHRISTIAN (b. 1865). Finnish composer. Born at Tavastehus, Finland, Dec. 8, 1865, he became a teacher at Helsingfors conservatoire in 1893. Sibelius is generally regarded as leader of the Finnish school of musicians. The popular *Valse Triste* is from the music for a tragedy, *Knolema*; the stirring *Finlandia*, a symphonic poem, five symphonies, and many songs are among his best-known works.



Jean Sibelius, Finnish composer

SIBERIA. General term applied to the Asiatic territory of the Union of Socialist Soviet Republics, with the exception of Soviet Central Asia. It comprises the whole of N. Asia between the Urals and the Pacific, and includes the autonomous Yakutsk and Mongol-Buriat republics. The area of the territory is some 5,000,000 sq. m.

For several hundreds of miles inland from the Arctic Ocean stretches a region of marshy tundras, which are frozen for the greater part of the year. Next comes a belt of forest, which is succeeded by a horder ridge fringing the N. slope of the Central Asian plateau. In 1926 a great range of mountains was discovered E. of the Lena called the Cherski range. There are long rivers, such as the Yenisei, Ob, and Lena, and immense lakes, of which Baikal is the chief. The climate is one of extraordinary contrasts. The Trans-Siberian Rly is the main artery of the whole territory. The Trans-Manchurian Rly connects with the Siberian system near Chita.

The part known as the Siberian area, between the Ural area and the Yakutsk republic, is rich in coal, iron, and non-ferrous metal ores, and grows much wheat. Its capital is Novo Sibirsk, other towns being Omsk, Tomsk, and Irkutsk. See *Russia*, map.

SIBYL (Gr. Sibylla). In classical legend, the designation of a number of prophetesses, inspired by Apollo. Ten were enumerated by late writers. The Cumæan Sibyl offered to sell Tarquin the Proud nine prophetic books, and on his refusal burnt three, and again three, finally selling him the remaining three. The extant Sibylline Oracles, some 4,000 Greek hexameters mostly written 200 B.C.-A.D. 300, are Jewish and Christian predictions, partly Messianic. As pagan witnesses to Christ, the Sibyls were represented in art, notably by Michelangelo in the Sistine Chapel, in the Vatican.

SICILY. Island in the Mediterranean, forming part of the kingdom of Italy. It is triangular in shape and lies just off the toe of Italy, from which it is separated by the strait of



Siamaug. Ape notable for the length of its hind limbs
W. S. Berridge, F.Z.S.

Messina. The mountains are a S.W. continuation of the Apennines and lie close to the N. coast. Etna (10,755 ft.) is the highest point.

The island is an important world source of sulphur, while rock salt and asphalt are also mined. Fruit-growing is the main occupation. Tunny, sardines, coral, and sponges are the chief yield of the fisheries. Palermo, the capital, Catania, and Messina are the chief ports. With the neighbouring Lipari, Aegades, and other islands, Sicily forms a compartment of Italy, having an area of 9,935 sq. m. Pop. 4,426,113.

When the Phoenicians began to colonise the island, c. 1000 B.C., they found the E. portion inhabited by the Siceli and parts of the N.W. by the Elymi. The Greeks founded their first colony in 735 B.C., but after a long series of wars with Carthage Sicily became a Roman province in 210 B.C. The island was ruled by the Goths until Belisarius conquered it in 535, when it became part of the Eastern Empire. Later it fell to the Saracens and became a seat of Arab culture.

During the late 11th and the 12th centuries Sicily was under Norman kings. Then the throne was seized by Henry VI of Germany, son of Frederick Barbarossa, who was succeeded by his son the Emperor Frederick II, but after the defeat of Frederick's grandson Conradin in 1268 the Sicilian throne passed to Charles of Anjou. The Angevin rule was

ended by the massacre called the Sicilian Vespers, 1282, in which every foreigner was either slain or driven out of Sicily. The island then appealed to Spain. Peter of Aragon was crowned king, and Sicily became little more than a Spanish possession.

In 1713 Sicily was given to the duke of Savoy, but in 1718 he exchanged it with Austria for Sardinia. It then formed with Naples the kingdom of the Two Sicilies, which in 1738 passed under the rule of a Bourbon prince. This dynasty ruled, with a brief interval, until 1860, when the island was invaded by Garibaldi and the last Bourbon, Francis II, was driven out. Sicily then joined the kingdom of Italy. See *Agrigentum*; Italy; Naples.

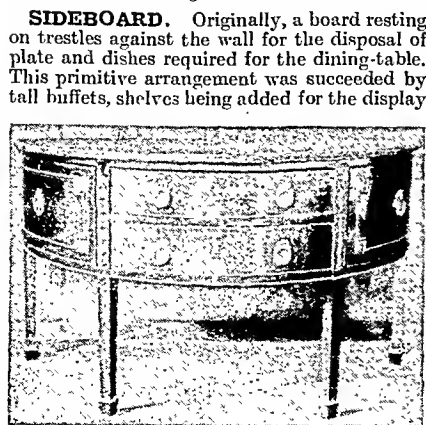
SICKERT, WALTER RICHARD (b. 1860). British artist. A son of Oswald Sickert, a painter, he was trained at the Slade School. He is one of the most fearless experimenters with the problem of light, especially as regards the painting of interiors. He is represented at the British Museum, the Luxembourg, and other art collections. In 1924 he was made A.R.A. In 1928 he was made President of the Society of British Artists.

SICYON. City of Greece. It was in the N.E. Peloponnese, between Corinthia and Achaia on the river Asopus, about 2 m. from the sea. It first came into prominence in the 7th and 6th centuries B.C., when it became famous for its pottery, wood carving, and bronze work. Classical Greek painting originated here.

SIDCUP. Urban district of Kent. It is 12 m. from London on the Southern Rly. The buildings include S. John's church, with a fine oak pulpit. Pop. 9,294.

SIDDONS, SARAH (1755-1831). British actress. Born at Brecon, July 5, 1755, daughter of Roger Kemble, an actor-manager, in 1773 she married William Siddons, a member of her father's company. She made her debut at Drury Lane, Dec. 29, 1775, but achieved her first success at Manchester, 1776-77. After achieving further triumphs at Bath and Bristol, she returned to Drury Lane, Oct. 10, 1782, as Isabella in Southerne's *The Fatal Marriage*. For 30 years thereafter she remained the unrivalled tragedy queen of the British stage. She died June 8, 1831. Sir Joshua Reynolds painted her portrait as *The Tragic Muse*.

SIDEBEARD. Originally, a board resting on trestles against the wall for the disposal of plate and dishes required for the dining-table. This primitive arrangement was succeeded by tall buffets, shelves being added for the display



Sideboard. Fine Georgian sideboard, c. 1750-60. By courtesy of Country Life, Ltd.

of dishes and drinking cups. They assumed monumental proportions and were elaborately decorated under the Tudors. The lower part was next enclosed by doors, providing cupboards, which later became cellarets. Sheraton employed inlay and brasswork, and the Adams perfected the design and decoration.

SIDERITE. In mineralogy, an iron carbonate. Grey yellow to dark brown (almost black) in colour, with glassy lustre, it crystallises in the hexagonal system and is found in gneiss, mica, clay, slates, etc. The name is also applied to sapphirine, the blue translucent variety of vitreous quartz.

SIDGWICK, HENRY (1838-1900). British philosopher. Born at Skipton, May 31, 1838, he went from Rugby to Trinity College, Cambridge, where he was senior classic in 1859. He became a fellow and lecturer at Trinity, and in 1883 was chosen professor of moral philosophy at Cambridge. He died Aug. 30, 1900. In 1876 he married Ethel M. Balfour (sister of A. J. Balfour), who, 1892-1910, was principal of Newnham College. As a philosopher Sidgwick endeavoured to combine intuitionism with utilitarianism. His chief work is *Methods of Ethics*, and he also wrote *Elements of Politics*, 1891.

SIDLAW HILLS. Range of hills in Scotland. It forms the S. boundary of Strathmore and extends N.E. from Kinnoull Hill in Perthshire to Stonehaven in Kincardineshire. The chief summits are Craigowl (1,493 ft.), Auchterhouse Hill (1,399 ft.), and Dunsinane (1,012 ft.), with traces of a fort popularly called Macbeth's Castle.

SIDMOUTH. Watery place and urban dist. of Devon. It stands at the mouth of the Sid, 13 m. from Exeter, on the Southern Rly. The church of S. Nicholas has a window presented by Queen Victoria, in memory of her father, the duke of Kent, who died here in 1820. Pop. 5,569.

SIDMOUTH, HENRY ADDINGTON, VISCOUNT (1757-1844). British politician. Born May 30, 1757, in London, he entered Parliament in 1784. He was elected Speaker in 1789, and on Pitt's resignation in 1801 he resigned the Speakership and formed a ministry, which lasted until 1804. He was created Viscount Sidmouth in 1805, and was home secretary, 1812-21, achieving great unpopularity owing to his coercive measures in the Luddite riots and other labour troubles. Sidmouth died Feb. 15, 1844.

SIDNEY, ALGERNON (1622-83). English patriot. He was the second son of the 2nd earl of Leicester. Joining the Parliamentary

army, he was severely wounded at Marston Moor in 1644. In 1652 he was appointed member of the council of state, but in the following year, resenting Cromwell's assumption of power, he retired to Penshurst until 1659, when he again became a member of the council. In 1680 he began the writing of his chief work, *Discourses Concerning Government*, published in 1698. A strong republican and an opponent of the Roman Catholics, he was executed on Tower Hill, Dec. 7, 1683, for alleged complicity in the Rye House Plot (q.v.).

SIDNEY, SIR PHILIP (1554-86). English soldier and poet. Born at Penshurst, Kent, Nov. 30, 1554, eldest son of Sir Henry Sidney and Mary Dudley, daughter of the duke of Northumberland, he was educated at Shrewsbury, Oxford, and Cambridge. He was in Paris during the night of S. Bartholomew. He travelled much in Poland, Germany, Austria, and Italy, and in 1577 was ambassador in Germany. In 1581 he was elected M.P. for

Kent; in 1583 he was knighted, made master of the horse, and married Frances Walsingham. In 1585 he was appointed governor of Flushing. He was mortally wounded on Sept. 22, 1586, at Zutphen, and died at Arnheim, Oct. 17.



Sir Philip Sidney, English poet. Nat. Port. Gall.

Sidney's *Apologie for Poetrie* is the first example of English literary criticism; his pastoral romance, *The Arcadia*, is a foundation book in English prose romance and an example of mental self-portraiture; while his *Astrophel and Stella* Sonnets gave the sonnet sequence its vogue in England. See *Arcadia*; *Penshurst*.

SIDON. City of Phoenicia. It is 25 m. S. of Beirut and was celebrated for its purple dyes and glass manufactures. It was conquered by Sennacherib, 701 B.C., and, as the headquarters of the Phoenician navy, contributed the best ships to the expedition of Xerxes against Greece. It was destroyed in 351 B.C. Under the Romans it was a free city. It became Mahomedan in 637, and later was the port of Damascus. The W. part of the old site is occupied by the modern town of Saïda. Pop. 12,000. See *Phoenicia*.

SIEGFRIED OR SIGURD. Hero of the most famous of Teutonic legends. In the *Völsunga Saga*, Sigurd is son of Sigmund the Völsung. He slays the dragon Fafnir, and his treacherous master; the smith Regin, plights his troth with the Valkyrie Brunhild, but afterwards wins her for Gunnar, whose sister, Gudrun, he marries. Brunhild avenges herself by inciting Gunnar's henchman Hagen to murder Sigurd, but slays herself on his funeral pyre.

In the *Nibelungenlied* Siegfried makes himself invulnerable, save for one spot, by bathing in the dragon's blood, and wins the hoard of the Nibelungs and the hood of invisibility, by which he helps Gunther (Gunnar) to win Brunhild in Iceland. See *Brunhild*; *Nibelungenlied*.

SIEMENS, ERNST WERNER VON (1816-92). German electrical engineer. Born at Lenthe, Hanover, he invented in 1841, with his brother, a process of electro-plating, but afterwards he specialised in the construction of telegraph lines, laying many of the earlier lines in Europe, and inventing many improvements in transmission, etc. He was the first to use gutta-percha as an insulating material, and he suggested the unit of electrical resistance known by his name.

His brother, Sir William Siemens (1823-83), settled in England and turned his attention to the regenerative steam engine, a new type of water meter which was superior to any then in use, and finally the regenerative furnace. In 1866 he established, with his brothers, electric works in England, and many important telegraph lines were laid under their direction, including the Atlantic cable in 1874. Siemens died Nov. 18, 1883.

SIENA

(Anc. Sena Julia). City of Italy. It is 30 m. direct, but 60 by rly., S. of Florence, and is picturesquely situated on three undulating hills. The Palazzo Pubblico (1259-



Siena. The 13th century cathedral, showing fine triple portal.

1305) has a slender tower, the Torre del Mangia, and frescoes of the Sienese school, and the Palazzo del Governo (1469-1500) houses the city archives and a library. The Gothic cathedral dates from 1243. It contains Donatello's bronze statue of John the Baptist. Under the choir is the early 14th century church of San Giovanni; adjacent is the 15th century cathedral library. The university was founded in 1203. Pop. 47,815

SIENKIEWICZ, HENRYK (1846-1916). Polish novelist. He made his name by some letters to the Polish Gazette, describing his experiences in California in 1876. In 1880 he brought out the historical novel, *The Tatar Bondage*, and later wrote a remarkable trilogy of tales—*Fire and Sword*, 1884; *The Deluge*, 1886; *Pan Michael*, 1887—describing 17th century society in Poland. In 1895 he published *Quo Vadis*, a romance of Nero's times, which, translated into some 30 languages, and, dramatized, made him world-famous. Sienkiewicz received the Nobel prize for literature in 1905. He died Nov. 14, 1916. Pron. Syenk-yayvitch

SIERRA. Name used in Spain and Spanish America for a mountain range. In Spain there are the Sierra Morena and the Sierra Nevada, both in the south of the country. The Sierra Nevada has many peaks over 10,000 ft. high, the highest being 11,420 ft. The Sierra Morena only reaches a height of 5,920 ft. In California there is another Sierra Nevada, in which several peaks rise to over 13,000 ft.

SIERRA LEONE (Span. lion range). British territory in W. Africa. It consists of the colony of Sierra Leone proper, including the Sherbro dist., a strip of land along the sea and river shores, and the Banana, Turtle, and other small islands; and a protectorate. The areas of the colony and protectorate are 4,000 sq. m. and 27,000 sq. m. respectively, and the pops. 85,163 and 1,456,148.

Sierra Leone is bounded N. and E. by French Guinea, S.E. by the republic of Liberia, and W. by the Atlantic. The capital is Freetown (q.v.). There is a main line of rly. from Freetown to Pendembu, 227 m., with a branch line from Boia Junction to Kamahai (104 m.). A mountain section connects Freetown with the hills, about 5 m. away. The colony of Sierra Leone began with the cession of a strip of land in 1788, to provide a home for liberated slaves.

SIÈYÈS, EMMANUEL JOSEPH (1748-1836). French statesman and political philosopher. Born at Fréjus, May 3, 1748, he entered the Church, and became vicar-general of Chartres, 1784. A member of the states-general and of the national assembly, he produced in 1789 his plan for a new constitution. He sat in the convention, 1792, voted for the king's execution, entered the committee of public safety, 1795, and went as ambassador to Berlin, 1798. Having opposed the return of Napoleon, 1814-15, he lived in exile in Holland, 1815-30, and died in Paris, June 20, 1836. Pron. Syay-ayz.

SIGHT. One of the special senses. It involves perception of three things, viz. light, colour, and form. The light sense enables differences in the degree of illumination to be appreciated. The colour sense is the power of distinguishing light of different wavelengths and consequently of different colours. Persons in whom this sense is seriously defective are said to be "colour blind." The form sense is the power of distinguishing form, and is equivalent to acuteness of vision. See Eye.

SIGHT TESTING. A person's sight is tested by placing him with his back to the light and displaying in a good light a board containing a series of rows of letters known as test types.

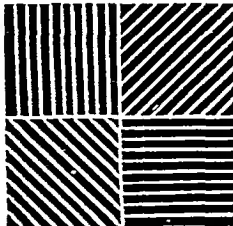
Each row is intended to be read at a definite distance, and the letters of each row are smaller than those of the preceding row

SIGISMUND (1368-1437). German king and Roman emperor, 1411-37. Born Feb. 15 1368, he succeeded his father, the emperor Charles IV, as margrave of Brandenburg, 1378, and nine years later became king of Hungary by right of his wife Maria, daughter of Louis I. In 1411 he was elected German king, and made an attempt at settling the scandal of the three rival popes. His responsibility for the death of John Hus (q.v.) angered the Bohemians, and it was only after 17 years of bitter warfare that Sigismund became king of Bohemia. He died Dec. 9, 1437.

SIGNALLING. Transmission of signals other than vocal or written. Army signalling covers communication by means of flags, heliographs, lamps, telephony, and telegraphy. Marine sight-signals include flags fixed or movable shapes, smoke or steam, and light devices. Sound-signals comprise bells, horns, guns, whistles, and sirens. Wireless telegraphy and telephony are widely used. Flag signalling became systematized in the British navy in 1665. A system was introduced into the merchant navy in 1857, and was adopted by all maritime nations. Naval night-signalling was revolutionized in 1867 by the introduction of the Colnmb flashing system. It utilised the European Morse dot-and-dash code by short and long light-exposures. Searchlights (q.v.) are used for the longest distances. See Morse: Nelson

RAILWAY SIGNALLING. Before the introduction of telegraphy trains were controlled by time-limits; and a train was not allowed to leave a station till a certain number of minutes had elapsed after the departure of the preceding train. With the advent of telegraphy railway lines were divided into "blocks" or sections, each guarded by signals, and two trains were not allowed to be in any one block at the same time. In 1841 semaphore signals, now used generally, were first applied to railway working. Semaphore arms are pivoted at one end to the post; or balanced at the centre on a bracket projecting from the post. When horizontal, the arm is "on," i.e. at "danger"; when inclined, it is "off," and indicates "all right." At night a red light is shown on the approach side when a signal is "on," and a green light when it is "off." In a type of three-position signalling the horizontal position of the semaphore and the red light stand for danger; the signal moves upward to starting position, showing a white light to indicate "clear to the next signal," and the arm moves into a vertical position, showing a green light for the all clear. Signal arms are counter-weighted in such a manner that they must be pulled off, and will return automatically to the danger position if the connexion with the signal-box be broken. In colour light signalling the semaphore arm is eliminated and the lights are kept burning for the 24 hours. See Semaphore.

Automatic signalling implies the operation of signals by the trains themselves through the agency of electricity.



for smaller craft another 100 m. At Samshui the Si-kiang divides into several branches, forming the Canton delta.

SIKKIM. Indian state in the Himalaya Mts. A British protectorate since 1890, it lies between Nepal on the W. and Bhutan and Tibet on the E. There are extensive forests and state fruit gardens, and the chief products are tea, cotton, oranges, and cereals. The people are mainly Nepalese. Gangtok is the capital. The ruler is a maharaja with a salute of 15 guns. Area, stato, 2,818 sq. m. Pop. 81,721.

SILCHESTER. Village of Hampshire, about 10 m. S. of Reading, the site of the Romano-British town of Calleva Atrebatum. Excavation from 1890 onwards revealed walls, streets, and house foundations, a Christian church, probably 4th century, besides an assemblage of objects, now in the Reading Museum. Within an area 820 yds. by 803 yds. were a basilica, forum, a number of residences, and other establishments.

SILENCER. Device for muffling the sound of exhaust gases from a motor. They are used more particularly on internal combustion engines using liquid or gaseous fuel. In its simplest form a silencer comprises a hollow cylinder connected at one end to the



Silenus. An ancient statuette at Naples

SILESIA. District divided between Prussia, Czechoslovakia and Poland. Prussian Silesia consists of Upper Silesia with an area of 3,746 sq. m. and a pop. of 1,379,278, and Lower Silesia with an area of 10,277 sq. m. and a pop. of 3,132,328. The two Silesias are in the S.E. of the country, between Czechoslovakia and Poland. Upper Silesia possesses a rich coalfield and also iron and zinc mines. Lower Silesia is mainly agricultural, though there are some manufactures in Breslau, the capital, and Leignitz.

The Czechoslovakian prov. of Silesia has an area of 1,708 sq. m. and a pop. of 735,532, and the Polish county of Silesia an area of 1,632 sq. m. and a pop. of 1,124,967. The latter includes Teschen, before 1919 part of Austria.

In the 14th century Silesia came under the rule of the king of Bohemia, and later, as part of Bohemia, passed under the sway of the house of Austria. When Maria Theresa succeeded her father, Charles VI, Frederick the Great of Prussia, relying on an old treaty, claimed part of Silesia. The result was a European war, at the end of which, in 1745, Frederick, who had conquered Silesia, was allowed to keep it, except three districts in the south. It became a province of Prussia, and was so when the Great War began in 1914. In 1815 it had been enlarged by

the addition of Upper Lusatia. The existing division is the result of the deliberations of the peace conference, 1919.

SILHOUETTE, ÉTIENNE DE (1709-67). French financier. Born at Limoges, July 5, 1709, he studied finance, and held several civil appointments before being appointed, in 1759, controller-general of France, through the influence of Madame de Pompadour. He at once attacked the privileges of the nobles, and his crude plans of spoliation raised a storm of protest and ridicule, his name becoming a synonym for any figure reduced to its simplest form. In this sense it was later applied to a shadow portrait in profile. Silhouette died Jan. 20, 1767.



Silhouette, depicting Garrick, the actor (right), conversing with Tobias Smollett, the novelist

SILICON. One of the non-metallic chemical elements. Its symbol is Si, atomic weight 28.06; atomic number 14. It does not occur in the free state in nature, although as the oxide silica the element is, next to oxygen, the most abundant, being the chief constituent of the earth's crust. Silicon exists in two forms, amorphous and crystalline. Like carbon, the element forms with metals compounds resembling alloys, and one atom of both carbon and silicon combines with four atoms of hydrogen.

Silica is the principal constituent of sandstone, felspar, and many other rocks. The purest form occurring naturally is rock crystal, a transparent and colourless variety of quartz; coloured varieties are amethysts and cairngorm stones, amorphous kinds being chalcedony, agate, flint, and opal. Silica is found in the vegetable kingdom; it gives hardness to the stems of grasses, cereals, and rushes, the strength of the joints of the bamboo being due to deposits of silica. Silicon carbide is known as carborundum. With hydrogen and oxygen silicon forms four acids, the chief being metasilicic acid or silica monohydrate and orthosilicic acid or silica dihydrate. The salts of silicic acid are known as silicates

SILICOSIS. Disease of the lungs due to the inhalation of mineral dust. Stonemasons and potters are particularly susceptible to it. The functional activity of the lungs is impaired and a liability to contract tuberculosis created. Inhalation of coal dust does not predispose to tuberculosis. The risk of silicosis is lessened by good ventilation, the use of exhaust fans, by spraying the air and the substance creating the dust, and by the use of respirators.

SILK. Fibre derived from the cocoon of several insects or spiders, notably the silkworm. The latter, in its larval stage, discharges from an opening in its under lip a fluid secretion which solidifies on contact with air and forms the silk of its cocoon. In silk culture the eggs of the moth are hatched out by warmth on paper-covered trays, and the larvae are fed with young mulberry leaves, and after three or four weeks the spinning of the cocoon begins. The intermediate layers of the cocoon are those which are reeled to form raw silk. The cocoons are softened in a basin of heated water, and the ends from several cocoons are wound into a hank around a hexagonal frame.

Raw silk is woven in Japan into the cheap goods (habutae) for which the country is

famous, but in Europe the raws are further treated in the process of throwing. The silk is carefully sorted and reeled, and different ends of raw silk are combined and twisted together. Japan provides nearly half the commercial crop of raw silk, and China, Italy, and the Levant are the next most productive regions. Silk is grown in France under the aid of bounties, and in several European countries, but cannot profitably be raised in Britain. The high tensile strength of silk and the permanence of colours dyed upon it are strong points in favour of its use for wear and ornament. Its non-inflammable character lends silk a special value for making containers for the propulsive explosives for artillery. Artificial silk (q.v.) is a fibre mechanically produced from cellulose.

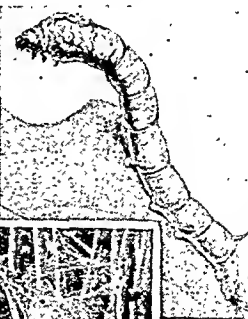
SILKWORM. Caterpillar of a moth, the chrysalis of which is enclosed in a cocoon of silk. A native of N China, the caterpillar is yellowish grey and about 3 ins. long; the silky cocoon, about the size of a pigeon's egg, is either yellow or white. Most species feed on the leaves of the mulberry.

SILLIMANITE. In mineralogy, the name of a silicate of aluminium. Named after Benjamin Silliman, the American scientist, the mineral is grey or brown, and is found in crystalline rocks, notably gneiss and mica schist, in the form of long slender crystals

SILLOTH. Seaport and watering place of Cumberland. It stands on Solway Firth, 224 m. from Carlisle, on the L.N.E.R. Formerly a fishing village, Silloth was made, in 1855 the port of Carlisle. The port carries on a trade with the Isle of Man and Liverpool. There are good bathing and golf links. Pop 2,630.

SILOAM. Rock-hewn reservoir outside the wall of Jerusalem (John 9, 7, 11). A conduit, 1,700 ft. long, hewn by Hezekiah, c. 700 B.C. (2 Kings 20; Neh 3), conveyed the Gihon waters from their source in what is now the Virgin's fountain to the Siloam pool.

SILT. In geology, a deposit of sand and mud. Such deposit is usually carried down towards the sea by the great rivers and deposited at or near their mouths, so causing silting up. Silt is of great economic importance, often being the depositary of precious metals, and forming great fertile plains. Thus the silt deposited annually by the Nile does away with the necessity for manure. The amount carried down by rivers, as the Hwang-ho of China, the Mississippi, etc., is between 300 and 600 million tons annually. See Alluvium: Delta; Dredging; River.



Caerwent, not far from Chepstow, was made a centre of Roman civilization, with walls, baths, etc. See Britain.

SILURES. Celtic tribe once inhabiting a large part of S. Wales. They offered a stubborn resistance to the Roman occupation of Britain, and were only subdued by the Romans about A.D. 80. Their chief town, Venta Silurum, the modern Caerwent, was made a centre of Roman civilization, with walls, baths, etc. See Britain.

SILURIAN. In geology, a term used for those rocks which lie above the Ordovician and below the Devonian, though Upper Silurian and Lower Silurian are terms also

used by geologists for the Silurian and Ordovician periods respectively. Silurian rocks are marine in origin, and consist chiefly of grits, sandstones, shales, and limestone. They are widely distributed. The rocks are chiefly used as building stones and are also sources of gypsum and rock salt. Seaweeds and ferns were common plants of the Silurian period. See *Geology*.

SILVER. One of the metallic elements. Its chemical symbol is Ag, atomic weight 107.88, atomic number 47; specific gravity 10.57, and melting-point 961° C. It occurs native in cubic crystals, in masses often weighing several hundred pounds; combined in silver ores as argentite, proustite, stephanite, hessite, pyrrargyrite, cerargyrite, etc.; and alloyed with other metals, as lead, copper, mercury, etc. Lead ores are an important source of production of the metal. Silver when pure is white and lustrous, ductile, malleable, capable of taking a brilliant polish; and is the best known conductor of heat and electricity. The metal is extracted in three ways: amalgamation, solution, and smelting.

The three great areas where silver and its compounds are produced are Mexico, the U.S.A., and Canada, followed by S. America, Japan, Australia, and Central America. Small quantities are also found in Austria, Germany, Czechoslovakia, and Spain.

Silver forms a number of important compounds. The oxide Ag₂O is used to give a yellow colour to glass. Silver nitrate or lunar caustic is prepared by dissolving the metal in nitric acid. When fused and cast into sticks it is used as a caustic in medicine. It is mixed with gum arabic in the manufacture of indelible inks and certain dyes. Silver chloride, bromide, and iodide are all widely used in photography, being all extremely sensitive to the action of light. Silver sulphide is the mineral argentite.

THE ECONOMIC ASPECT. In recent years the world's annual production of silver has varied from 245,000,000 to 254,000,000 oz. fine, Mexico contributing about two-fifths of this total. In 1868 the average price of silver was 5s. 0½d. per oz., an average not reached again until 1920. In 1930 the price per troy ounce fell to 1s. 5d., as compared with an average of 2s. 2d. in 1929.

SILVER END. Model town of Essex. It is 2½ m. from Witham. Here the Crittall Manufacturing Co. has erected large works for the production of articles used in house building and furnishing. The estate has been laid out on garden city lines and houses built for the employees. There is a large store in the town and facilities for social life.

SILVER FIR (*Abies pectinata*). Tall evergreen tree of the order Pinaceae. A native of Central and S. Europe, it attains a height of 150 ft. or more, and a trunk diameter of upwards of six feet. The needles are not in pairs as in the pines, but solitary, arranged in spirals. They are bright green and polished on the upper side, but beneath there is a stripe of white wax on each side of the mid-rib, which gives the tree its popular name. Each leaf endures for eight or more years. The cones are cylindrical, erect, and about 6 ins. long. The timber, though soft, is strong. It yields Strasbourg turpentine.

SILVERTOWN. Dist. of E. London. It lies to the W. of N. Woolwich, S. of the Royal Albert Dock, and is 8 m. from Liverpool Street on the L.N.E. Rly.

SILVER TREE OR WITTEBOOM (*Leucadendron argenteum*). Small tree of the order Proteaceae, a native of the Cape of Good Hope. The long, slender, lance-shaped, leathery leaves are covered with silvery white hairs and are exported in quantity for wreath-

making with "everlasting" flowers, for which their durability makes them suitable. The flowers of the tree are yellow and clustered.



Silver Tree. Silvery-leaved tree, native of the Cape of Good Hope

Lakes Erie and Huron, the Severn taking its waters into Georgian Bay. Its area is 271 sq. m. The surrounding dist. was the scene of an Indian war, during which the Iroquois almost exterminated the Hurons. The town is 24 m. from Brantford, is the capital of Norfolk co., and is served by the Canadian National Rlys. Pop. 3,953.

SIMEON. Name of one of the tribes of Israel, and of its traditional ancestor, the second son of Jacob and Leah. He was born at Haran in Mesopotamia, and with Levi took part in a feud with Shechem, resulting in the dispersion of the two tribes. The remnant of Simeon settled in the S. part of Judah, and seems to have been a pastoral people which was soon absorbed by Judah.

SIMEON, CHARLES (1759-1836). British divine. Born at Reading, Sept. 24, 1759, he was elected fellow of King's College, Cambridge, was ordained, and in 1783 became perpetual curate of Holy Trinity, Cambridge, where he remained until his death. Simeon exercised an enormous influence in the university, and was one of the leaders of the evangelical party in the Church of England. He helped to found the Church Missionary Society and established the Simeon Trust to secure livings for men holding evangelical opinions. He died Nov. 13, 1836.

SIMEON STYLITES (350-459). Pillar-saint. Son of a shepherd in Cilicia, he early started a monastic life. Later he lived as a hermit on Mt. Thelaniassa, near Antioch, where in 423 he built a series of pillars, on which he spent over 30 years of his life. He was visited by great crowds, to whom he preached. Pron. Sty-li-teez.

SIMLA. Town of India, in the Punjab. It stands 7,000 ft. above sea level on a spur of the Himalayas, 170 m. N. of Delhi, with which it is connected by rly. Simla is a great sanatorium for Europeans, and the summer residence of the viceroy. Pop. 27,494.

The dist. of Simla is in the Ambala division of the Punjab. Its area is 101 sq. m. Pop. 45,327. The deputy commissioner is also political officer for the Simla Hill States, which have an area of 5,937 sq. m. and a population of 306,718.

SIMNEL, LAMBERT (c. 1475-1535). English impostor. Said to be the son of an Oxford joiner, he was trained by an ambitious priest,

Richard Simon, to play his part as the figure-head in a Yorkist plot against Henry VII (q.v.). In 1486, following a report that the earl of Warwick, son of the deceased duke of Clarence and Yorkist claimant to the throne, had escaped from the Tower, Simnel was taken to Ireland and crowned as Edward VI in Dublin Cathedral. With the support of Margaret of Burgundy, the earl of Lincoln and other powerful Yorkist nobles, the rebellion was carried over to England. Simnel landed near Furness, and marched through Yorkshire, but was overthrown by Henry VII at Stoke, near Newark, June 16, 1487. He was relegated to service in the royal kitchens.

SIMNEL CAKE (Lat. simila, wheat flour). Rich cake, formerly made to celebrate Mothering Sunday, the 4th Sunday in Lent. The making of simnel cakes, formerly common in W. England, is still observed in a few localities of Gloucestershire and Monmouthshire, and in Lancashire. The ingredients are those of a rich plum pudding, enclosed in a crust coloured with saffron.

SIMOIS. Small river of the Troad, Asia Minor, a tributary of the Scamander. It has been identified with the Dumbrek Chai. Simois was also personified as a river god, the son of Oceanus and Tethys.

SIMON, SIR JOHN ALLSEBROOK (b. 1873). British politician and lawyer. Born Feb. 28, 1873, he was called to the bar in 1899. He represented the British Government on the arbitration over the boundary of Alaska in 1903, and became a K.C. in 1908. Simon was Liberal M.P. for Walthamstow, 1906-18, and in 1910 he was made solicitor-general and knighted. Promotion to attorney-general and a seat in the Cabinet followed in 1913; and in 1915 he was made home secretary in the Coalition Ministry, but resigned office early in 1916 because he would not agree to accept the principle of compulsory military service. From 1922 he represented the Spen Valley division of Yorkshire. In 1927 he visited India as chairman of the royal commission on the Indian constitution, and in 1930 the report of this commission appeared. In Oct., 1930, he conducted the official inquiry into the R 101 disaster. In 1930 he published *Comments and Criticisms*, a volume of speeches, addresses, and several papers on Indian topics. See *India*.



Sir John Simon, British politician
Russell

SIMONIDES (c. 556-468 B.C.). Greek lyric poet. He was born in the Ionian island of Ceos, but spent most of his life at Athens, in Thessaly, and at the court of the tyrant Hiero in Sicily, where he died. He wrote both in the

Doric and Ionic dialects and was the author of hymns to the gods, odes, elegies, dirges, epitaphs, and epigrams. His poetry survives only in fragments. Simonides shares with Pindar the distinction of being the greatest lyric poet of Greece. He was the first Greek poet to write for money. Pron. Si-monny-deez.



Simla, India. Government House, summer residence of the viceroy

SIMON MAGUS (fl. c. A.D. 37) Samaritan magician (Gr. magos) and religious leader. Acts 8, 9-24 relates that his followers regarded him as "that Power of God which is called Great." Baptized by the deacon Philip, he desired to acquire the miraculous gifts of the Holy Spirit possessed by SS. Peter and John, and offered them money, but was sternly rebuked by S. Peter (see Simony). The Simonite sect blended pagan and Christian doctrines with a form of Gnosticism.

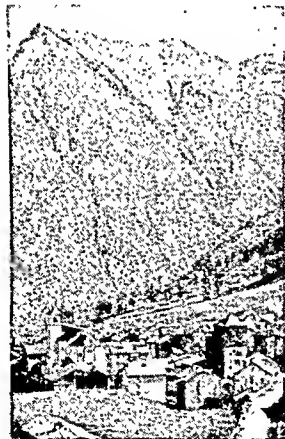
SIMONSBATH. Village of Devonshire. It is on the Barle, 9 m. from South Molton, and is the chief place on Exmoor. It is visited for the fishing in the river.

SIMON'S TOWN. Naval port of S. Africa. It is situated in Simon's Bay, on the E. side of the Cape peninsula, 22 m. by-rail from Cape Town. It has an excellent harbour, and the docks can accommodate the largest vessels. European pop. 5,409.

SIMONY. Term of ecclesiastical law. It takes its name from Simon Magus (q.v.). By ecclesiastical law it was simony to agree corruptly to present anyone to any ecclesiastical preferment for reward. By the law of England a simoniacal contract is void; but a patron may present a clerk to a living and make a stipulation that he resigns in favour of one of the patron's relations if requested to do so. See Benefice.

SIMOOM (Arab. samum, from sammā, be poisoned). Desert sandstorm of Arabia and N. Africa. It is caused by rising currents of hot air setting up an inward swirl of air comparable to a cyclone. This advances and raises great volumes of sand.

SIMPLON. Pass over the Alps. It leads from Brieg in canton Valais to Domodossola



Simplon. Pass leading through the Alps to Italy, and village of Brieg

in Piedmont, Italy, at an alt. of 6,582 ft. The Simplon Road was begun under Napoleon in 1800. It is 42 m. long. Below the pass is the 121 m. rly. tunnel on the route to Milan. This was opened in 1906. A second tunnel was completed in 1921.

SIMPSON, SIR JAMES YOUNG (1811-70). Scottish physician. Born in Linlithgow, June 7, 1811, he studied medicine at Edinburgh University, and in 1840 was chosen professor of medicine there. Simpson's chief title to fame is the work he did in forwarding the use of anaesthetics, of which he may be regarded as the founder. He was made a baronet in 1866, and died May 6, 1870. See Anaesthesia.

SIMS, GEORGE ROBERT (1847-1922). British journalist. Born Sept. 2, 1847, he became widely known by his pen-name which he contributed the columns to The Referee. In addition to an anonymous translation of Balzac's Contes and was a volume of reminiscences, in 1914. In 1815 it was author of How the

Poor Live, The Dagonet Ballads, Ballads of Babylon, Three Brass Balls, Among My Autographs, Without the Limelight, Watches of the Night; and author or part author of innumerable melodramas, farces, comedies, burlesques, and other stage productions. He died Sept. 4, 1922.

SIMS, WILLIAM SOWDEN (b. 1858). American sailor. Born at Port Hope, Canada, Oct. 15, 1858, he entered the American navy as a lieutenant in 1879, and by 1909 had become commander of the battleship Minnesota, U.S. Atlantic Fleet. In 1913 he was made commander of the torpedo flotilla of the Atlantic Fleet, and in 1915 was given command of the dreadnought Nevada. In 1917 he was made president of the U.S. Naval War College, a post he resumed in 1919. He retired in 1922. On the entry of the U.S.A. into the Great War he was put in charge of the American vessels in European waters. He published The Victory at Sea, 1920.



William S. Sims, American sailor

SIN. Theological term signifying an offence against God, or a breach of divine law. What is known as vice in the realm of ethics and as crime in the social organism becomes sin when it is viewed in relationship to God. Some conception of sin is found in every type of religion. In its lower phases, where religion is mainly non-ethical, sin consists of some breach of ritual, or the doing of some action that is taboo. When religion becomes ethicised, sin is identified with transgression of the moral law which is held to embody the will of God.

SIN EATING. Primitive custom formerly prevalent in Wales and adjacent English shires. Some villages had an appointed sin eater, who repaired to the house of death, receiving over the dead body a loaf, bowl of ale or milk, and a small coin, thereby taking over its sins (Hosea 4, 8).

SINAI. Peninsula at the head of the Red Sea, between the gulfs of Suez and Akaba. It is about 230 m. long, and gradually tapers to a point at the S. It is largely a treeless region of wild and barren mountains, shut in on the N. by desert country. The Mount Sinai of the Old Testament is generally regarded as identical with Gebel Catherina, which has two separate peaks, Mount Horeb and Gebel Musa, or the Mountain of Moses, the latter usually regarded as the scene of the Hebrew law-giving. Politically, Sinai forms part of the kingdom of Egypt.

In the Great War, following the evacuation of Gallipoli, the British concentrated considerable forces in Egypt to safeguard the canal. The Turkish advance on Egypt was across the Sinai peninsula. Two attacks in 1915 had already been repulsed. At the beginning of 1916 the Turks were in occupation of virtually the whole peninsula. Sir A. Murray, early in 1916, made plans to conquer it, his objective being the invasion of Palestine.

After a check at Katia, Sir A. Murray, in Aug. 1916, won the battle of Romani (q.v.), and in Nov., 1916, commenced the systematic bombing from the air of the Turkish lines. On Dec. 23 he won the battle of Magdhaba. By the victory at Rafa, Jan. 9, 1917, he drove the enemy out of the N. part of Sinai. See Palestine; Turkey.

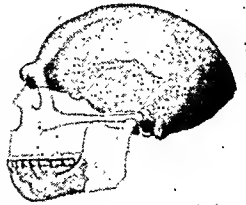
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Sir James Simpson, Scottish physician

of Dagonet, over the Mustard and Cress columns to The Referee. In addition to an anonymous translation of Balzac's Contes and was a volume of reminiscences, in 1914. In 1815 it was author of How the

SINANTHROPUS. Term distinguishing a type of fossil human remains discovered in 1928-9, near Peking. Named in full Sinanthropus Pekinensis, these are referred to the early or mid-Pleistocene period. See Man.



Sinanthropus. Skull of Peking man, showing anthropoid characteristics. Courtesy of Sir Arthur Smith Woodward

SINCLAIR, MAY. British novelist. She was born at Rock Ferry, Cheshire, and was educated at Cheltenham. She published her first novel, Audrey Craven, in 1897.

The Divine Fire, 1904, showed her distinctive gifts, and among her other works of fiction have been The Creators, 1910; The Judgement of Eve, and other stories, 1913; The Combined Maze, 1913; Tasker Jevons, 1916; The Tree of Heaven, 1917; Mary Olivier, 1919; The Romantic, 1920; Mr Waddington of Wyck, 1921, and The Allingham, 1927.

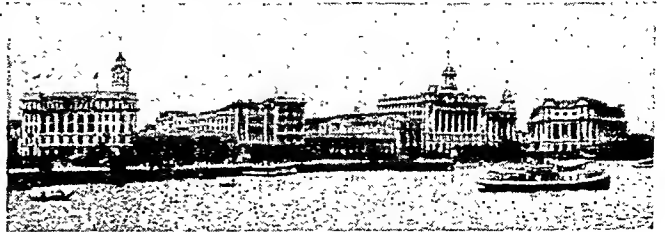
SINCLAIR, UPTON BEALL (b. 1878). American novelist. Born at Baltimore. Sept. 20, 1878, he is best known as the author of The Jungle, 1906, a novel which made so seething an attack on the American canning trade that President Roosevelt appointed a committee to investigate the conditions of the Chicago stockyards. The report they issued revealed serious abuses. Other novels are King Midas, 1901; The Overman, 1907; Simon the Seeker, 1909; Sylvia, 1914; Sylvia's Marriage, 1915; King Coal, 1917; Jimmie Higgins, 1919; Bill Porter, 1925; and Money Writs! 1927.

SIND, SINDH, OR SCINDE. Prov. of India, in Bombay presidency. It was formerly an independent prov. It comprises mainly an alluvial plain, of which a large portion is occupied by the delta of the Indus, is mountainous on the W., on the Baluchistan border, has the Runn of Cutch on the S., and the Thar desert on the E. Karachi is the capital. Its area is 46,506 sq. m. Pop. 3,279,377. See Bombay.

SINDING, CHRISTIAN (b. 1856). Norwegian composer. Born at Kongsberg, Norway, Jan. 11, 1856, he came to be regarded as Grieg's natural successor as leader of Norwegian music. Among his works are orchestral symphonies, violin concerto in A, the Legend and Romance for violin and orchestra, chamber music, many pianoforte pieces, and, in addition, about 200 songs.

His brother Stephen Sinding (1846-1922) was a distinguished sculptor.

SINGAPORE. British possession, the chief of the Straits Settlements. The island of Singapore is 27 m. by 14 m. and lies off the S. end of the Malay Peninsula, separated from Johore by Johore Strait. Its area is 217 sq. m. The colony includes this island, some adjacent islets, Christmas Island, and the Cocos Islands, as well as the island of Labuan, off Borneo. The port is a free harbour; liners regularly call, and smaller vessels collect the products of the E. Indies. Among notable buildings are the Anglican and R.C. cathedrals, the Raffles



Singapore. A view from the sea, showing Collyer Quay and the shipping quarter

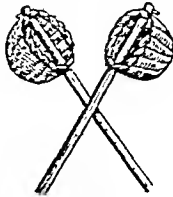
museum and library, and the government buildings. Since 1923 a causeway connects the island with the mainland. Pop. 574,665.

In 1923, as a result of the treaty of Washington, which forbade any extension of naval bases in the Pacific, it was decided to make one at Singapore. A plan was prepared, and in 1925, after it had been given up, was again put forward. In June, 1928, a floating dock was sent to Singapore. See Straits Settlements.

SINGER, ISAAC MERRITT (1811-75). American inventor. Born in Oswego, New York, Oct. 27, 1811, he became a mechanical engineer, and set himself to the improvement of the early forms of the sewing machine. He patented a single-thread and chain-stitch machine, and exploited his invention with much success. Singer died at Torquay, July 23, 1875.

SINGLESTICK.

Weapon consisting of a thin, round ash stick, about 34 ins. in length, with a basketwork hilt for the protection of the hand. The old style of cudgel-play is now obsolete, the singlestick being employed in modern times as a medium for acquiring skill in the use of the light sabre. See Fencing.



Singlesticks with basketwork hilts

SINGLE TAX. Phrase popularised, if not actually introduced, by the American economist, Henry George. It means that all revenue should be raised by a tax on land. The doctrine starts from the assumption that there is no right of private property in land. It belongs to the state, but as its equal division among all citizens is impossible, it should be let out to the highest bidder. The rent or tax which the tenants would pay would, it is urged, be sufficient for the expenses of the state.

Singleton. Mining town of New South Wales. It is on the Hunter river, 60 m. N.W. of Newcastle. Pop. 3,700.

SING SING. State prison of the U.S.A. Situated at Ossining, a village 30 m. N. of New York City, it dates from 1825. It took its name from the Sin Sinek Indians. In 1929 it was decided to build a new prison.

SINHA, SATYENDRA PRASANNA, 1ST BARON (1864-1928). Indian statesman. Educated in Calcutta and called to the bar in London,



1st Baron Sinha, Indian statesman
Lafayette

he was advocate-general of Bengal, 1907-17. In 1915 he was knighted and became the first Indian member of the viceroy's executive council. He represented India at the Peace Conference, 1919. He was created Baron Sinha of Raipur in 1919, being the first Indian to sit in the House of Lords, and in 1919-20 was under-secretary for India.

In 1920-21 he was governor of Bihar and Orissa. He died March 6, 1928.

SINHALESE or **CINGALESE.** Dominant native stock in Ceylon. Numbering some 3,015,970, about two-thirds of them occupy the low country, one-third the Kandyan highlands. The aboriginal Vedda population was dominated by a Dravidian stock and culture, and these were overlaid by an Aryo-Indian immigration which introduced Buddhism. The modern Sinhalese speak an Indo-Aryan language enshrined in a rich literature of high antiquity. The traditional Buddhism is allied with much spirit-worship. See Ceylon.

SINISTER (Lat. left). In heraldry, the left side of the shield, as carried by its bearer. It is therefore the right side to those in front of him. The word is used for anything unlucky and therefore evil, this being due to the fact

that left-handed persons were formerly regarded with suspicion. See Heraldry.

SINKING FUND. Financial term for funds regularly set aside to provide for the repayment by instalments of a definite liability, such as a national debt, municipal and other loans, debentures, etc.

The principle was introduced in the United Kingdom by Pitt, who in 1786 arranged that £1,000,000 a year should be paid over to commissioners for the reduction of the National Debt. The amount allocated in the year 1930-31 was £55,400,000. See National Debt.

SINN FEIN (Irish for ourselves alone). Irish nationalist movement. It originally had two aims. One, reflected in the Gaelic League and the Irish literary renaissance, was the preservation of the dying language of the country and of the old national culture; the other was political, namely, the re-establishment of an Irish constitution. In Nov., 1905, the Sinn Fein political organization was set up, the paper of that name, edited by Arthur Griffith, being its chief organ.

On the outbreak of war in 1914 J. E. Redmond, whose supporters had founded the National Volunteers, further alienated the Sinn Fein party, now bitterly anti-British, by his efforts to obtain army recruits. The hostile attitude of the party eventuated in the rebellion of Easter week, 1916, when a number of Sinn Fein leaders were shot and others imprisoned. In 1917

Eamonn de Valera was elected president of the movement in succession to Arthur Griffith, and the new republican policy was inaugurated. In Dec., 1918, Sinn Fein candidates were elected for 73 out of 105 Irish seats, and these constituted themselves as Dail Eireann. In 1920 the party secured control of all local authorities outside N.E. Ulster. The Irish republican army was organized, and maintained an active guerilla warfare against crown forces, military and police, the resultant era of murders and reprisals, 1920-21, being unparalleled in Irish history.

In 1921 prolonged negotiations took place between the Sinn Fein leaders and the British Government, culminating in the treaty by which the Irish Free State came into being. See Ireland; Irish Free State; Northern Ireland; consult also The Evolution of Sinn Fein, R. M. Henry, 1920. Pron. Shin Fane.

SINON. In Greek mythology, a relative of Odysseus. Distinguished for his cunning, he allowed himself to be taken prisoner by the Trojans at the siege of Troy. He persuaded the Trojans to drag the wooden horse into the city, and in the dead of night he opened the side of the horse and let out the band of armed men concealed within.

SIoux. North American Indian tribe who call themselves Dakotas. Sioux is the termination of the French form of their Ojibwa name (enemies). It is used for the Siouan family, comprising many tribes in the Mississippi and Missouri basins. See American Indians; Dakota; also illus. p. 73. Pron. Soo.

SIoux CITY. City of Iowa, U.S.A. On the Missouri, near its junction with the Big Sioux and Floyd rivers, and served by several rlys., it manufactures bricks and tiles and flour and has packing warehouses and rly. shops. Pop. 71,227.

Sioux Falls is a city of South Dakota. It stands on the Big Sioux river, in the S.E. corner of the state. Served by several rlys., it is a great wheat centre. Pop. 30,127.

SIPPARA. Akkadian city at Abu Habba. On the left bank of the Euphrates, it is 40 m. N. of Babylon. Commonly identified with the

biblical Sepharvaim, the two Sippars dedicated to the sun-god Shamash and the goddess Anunit (Ishtar). Its capture by Assyria resulted in Sepharvite colonists being settled in Samaria (2 Kings 17).

SIRDAR (Hind sar-dar). Title used in the East for military chiefs. It was the official title of the commander-in-chief of the Egyptian army when Egypt was under British rule.

SIREN (Gr. Seiren). In classical mythology, a sea nymph who, by the power of song, lured to their ruin those who listened to her. According to the Odyssey the sirens lived on an island near the strait of Messina. As Odysseus's ship approached the island he had the ears of his sailors filled with wax and himself bound to the mast, and in this way the island and its dangers were passed. When encountered by the Argonauts (q.v.), the Sirens were surpassed in singing by Orpheus; thereupon they threw themselves into the sea and were changed into rocks. In art they are portrayed as birds with women's faces.

SIREN (*Siren lacertina*). Species of amphibian, known as the mud eel. It is found

in swamps of the S. dists. of the U.S.A. In colour black, sometimes spotted with white, it is about two feet long, and resembles an eel with two very small fore-limbs and external gills



Siren. Two-legged amphibian, showing the external gills, that persist throughout its life

SIREN. Instrument used on ships,

lighthouses, lightships, etc., for giving sound signals to warn shipping during foggy weather. The sound-making apparatus consists of a revolving disk or cylinder arranged to move almost in contact with another disk or plate. Both fixed and moving parts are pierced with a number of holes which periodically come opposite one another and allow the steam or compressed air used to pass through in a very rapid and regular series of puffs, and, by setting the air in vibration, create a loud and musical note. The sound is concentrated by a large horn. See Foghorn.

SIREHOWY. Mining town of Monmouthshire. It stands on the river of the same name, N. of Tredegar, on the L.M.S. Rly. The river rises in Brecknockshire, and joins the Ebbw after a course of 18 m. Pop. 6,842.

SIRIUS. Brightest star in the sky, with a magnitude of 1.4. Also known as Alpha Canis Majoris or Dog Star, it is a double star with a much fainter companion, discovered in 1802, and of about half its mass. Sirius is itself about two and a half times the mass of the sun, and the great intensity of its light, which, allowing for its great distance, must be 30 times that of the sun, is thereby the more remarkable.

SIROCCO. Term applied to any warm southerly wind by inhabitants of the N. shores of the Mediterranean. Such winds may be dry or moist, dust-laden or clear. The typical wind is hot and very dry, is probably frequently due to Föhn conditions, and is harmful to vegetation, especially fruit trees in bloom. The term has been extended to similar warm southerly winds in the E. of the U.S.A. See Föhn; Wind.

SISAL HEMP. Rope fibre obtained from the large leaves of *Agave rigida*, of the variety sisalana, a perennial plant of the order Amaryllidaceae. It is a native of S. America. Several other species of agave yield valuable fibres.

SISKIN (*Chrysomitris spinus*). Species of finch. Distributed over Europe and parts of Asia, it nests in a few localities in the

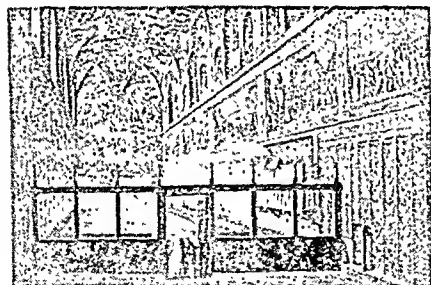
British Isles, but is better known as a winter visitant. The plumage is variegated with brown and grey with a greenish yellow bar across the wings.

The nest is made of grass, roots and moss, and is usually built high up in a pine or fir tree.

SISTERHOOD. Communities of women living together under religious rule, but not enclosed in convents, and devoting themselves to active work for the good of the poor. Sisterhoods were first established by

S. Vincent de Paul in Paris, in 1633, under the name of Daughters of Charity. In the 19th century arose a vast multiplication of active sisterhoods. Dr. Pusey, in 1845, established a community at Regent's Park, London. In 1851 the All Saints Sisters of the Poor were founded, and about the same date the Sisters of S. John the Baptist, at Clewer, were established. The sisters take the vow of poverty, chastity, and obedience. See Deacon.

SISTINE CHAPEL. Private chapel of the popes in the Vatican. It was built by Pope Sixtus IV in 1480. The chief glory is the magnificent series of frescoes by Michelangelo, illustrating the Creation and other O.T. themes, on the vault, and that of the Last Judgement on the altar wall, there are also wall frescoes by Botticelli, Ghirlandaio, Roselli, Pinturicchio, and others. See Isaiah; Michelangelo. Rome; Vatican.



Sistine Chapel, Rome. Papal private chapel in the Vatican, adorned with frescoes by Michelangelo

SISTRUM (Gr. seistrion, rattle). Ancient Egyptian metal rattle. Usually a bronze horse-shoe-shaped frame, it is pierced for three or four loose rods, sometimes bearing jingling rings. The handle was often Hathor-headed. It was held by women worshippers, especially in the later Isis ritual. It is also used in Africa, for instance, among the people of Benin.

SISYPHUS. In Greek legend, a king of Corinth who was an able ruler, but noted for his deceitfulness and rapacity. Sisyphus was condemned after death perpetually to push up a hill an immense stone, which as soon as it reached the top rolled to the bottom.

SITTINGBOURNE. Market town, urban dist., and seaport of Kent. It stands on Milton Creek, an arm of the Swale, 10 m. from Chatham, on the Southern Rly. The chief building is S. Michael's church. There are manufactures of bricks, beer, cement, and paper, and the town is the centre of a district growing fruit and hops. It has some shipping. Near are the remains of Tong Castle. In 1921 a leaden font was discovered in S. Margaret's church, Lower Halstow, near Sittingbourne. Market day, Mon. (alternate). Pop. 9,339.

SITWELL. Family of writers. They are Edith Osbert, and Sacheverell, the three children of Sir George Sitwell, a Yorkshire baronet. Edith has written poems and volumes of criticism, including one on Pope. Osbert has written some fiction, including volumes of short stories, as well as essays on various subjects. Sacheverell is known as a poet and a writer on art.

SIVA or SHIVA (Skt. śiva, propitious). In Hindu religion, one of the chief triad of gods. By his worshippers, the Saivas, who form numerous sects, especially in S. India, he is regarded as the supreme, all-embracing deity, and is called Mahādeva, the great god. He is represented with four hands and three eyes, with a garland of skulls worn round his neck, generally seated and absorbed in thought. As symbols his weapons are the trident, bow, thunderbolt, and axe. His wife is Durgā. Kālī, or Devī. See Hinduism.

SIXTUS. Name of five popes. Sixtus I (or Xystus) was the 7th bishop of Rome from about 115-25. Sixtus III was pope from 432-40. Sixtus IV (1414-84) was pope from 1471-84. Born near Albissola, July 21, 1414, he entered the Franciscan order in early youth, in 1467 was created cardinal, and in 1471 was elected pope. Plunging into Italian politics, and placing a large number of his relatives in high office, he made war against Florence, 1478. He built the Sistine chapel (q.v.) and the Sistine bridge in Rome. Sixtus V (1521-90) was pope from 1585-90.

SKAGERRAK. Strait between Norway and Jutland, connecting the North Sea by the Kattegat and Sound with the Baltic Sea. With a mean breadth of 80 m., its length is about 150 m. Near Jutland are dangerous shoals and sandbanks.

SKAGWAY. Seaport of Alaska. On Chilkoot Inlet, Lynn Canal, it is the terminus of the rly. to the Yukon and the steamer service to Seattle. It is the distributing centre for supplies to the Klondike. Pop. 1,000.

SKATE. British food fish, belonging to the Elasmobranch (plate-gilled) order. The skeleton is cartilaginous and the body greatly flattened, with broad pectoral fins and a whip-like tail. The common skate (*Raja batis*) varies from two to four feet in length, and is greyish in colour on the upper parts, with small black spots. It belongs to the ray family. There are nine British species, all edible. See illus. above.



Sistrum used in Benin

SKATING. Locomotion on ice by the aid of mechanical attachments to the feet. Skates were originally made of metacarpal bones of animals and bound on to the foot. Later, runners were shod with iron, and so came the iron blade fitted into a wooden holder attachable to the sole of the boot by screws and straps. To these succeeded steel skates which can be clamped to the sole of an ordinary walking boot.

When speed or figure skating is contemplated, the Norwegian type, skate and boot combined, should be used. Roller skating (q.v.) is a pastime which consists in skating on wheels in a covered-in rink.

The most noteworthy names among English amateur speed skaters are the Tebbutts, A. E. Tebbitt, and F. W. Dix, and among professionals, the Smarts, the Wards, and S. Greenhall. The world's amateur championship races, held annually under the auspices of the International Skating Union, are competed for over four distances, viz. 500, 1,500, 5,000, and 10,000 metres. Figure skating has been developed into a fine art.

SKEAT, WALTER WILLIAM (1835-1912). British philologist. He was born Nov. 21, 1835, educated at Highgate and Christ's College, Cambridge, and appointed professor of Anglo-Saxon in that university in 1878. Among his numerous works are Etymological Dictionary of the English Language; Early English Proverbs; The Science of Etymology. A Student's Pastime is a collection of 30 years' contributions to Notes and Queries, with an autobiographical introduction. He died Oct. 7th, 1912.

Skegby. Colliery centre of Nottinghamshire. It is 18 m. from Nottingham, on the L.N.E. Rly. Pop. 6,230.

SKEGNESS. Watery place and urban dist. of Lincolnshire. It is on the E. coast, 24 m. from Boston, on the L.N.E. Rly. There are good sands, golf links, and other attractions for the numerous visitors. It has a beam wireless station. An earlier Skegness was an important seaport, destroyed by the sea in the 15th century. Pop. 9,246.

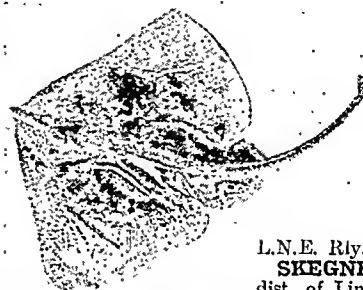
SKELETON (Gr. dried up). In anatomy, the hard framework of a body, formed mainly of bones, but completed in places by cartilage. In man the cartilaginous parts of the skeleton are the disks between the vertebrae of the spinal column or backbone and the costal cartilages which connect the ends of the ribs with the breast-bone. The ends of the long bones and the sockets or surfaces with which they articulate are also covered with cartilage to facilitate movement and provide some degree of elasticity. The human skeleton consists of some 200 bones. See Anatomy.

SKELLIGS. Three small rocks off the S.W. coast of co. Kerry, Irish Free State. They are known as Great and Little Skellig and Lemon Rock, and abound in sea-fowl. On one are the remains of a monastery, formerly resorted to by pilgrims.

SKELMERSDALE. Urban dist. of Lancashire. It is 8 m. from St. Helens, on the L.M.S. Rly. The chief industries are coal mining and brickmaking, and the chief building is S. Paul's church. Pop. 6,687.

SKELTON. District of Yorkshire (N.R.). It is 17 m. from Middlesbrough, and forms part of the urban dist. of Skelton and Brotton, on the L.N.E. Rly. The chief occupation is in the extensive ironstone mines. Pop. urb. dist. 15,788.

SKELTON, JOHN (d. 1529). English poet. Born probably about 1440, he took orders, became tutor to Prince Henry, afterwards Henry VIII, and for a time was rector of Diss in Norfolk. His earlier poems, such as the interlude, Magnificence, were of a scholarly character, but latterly he developed a humorous and satiric vein, attacking the clergy in Colin Clout, and Wolsey in Why Come Ye not to Court? His other poems include The Tunning of Elinor Rummung, full of Rabelaisian humour, The Death of Philip Sparrow, and The Bowge of Court, an allegorical satire. To escape arrest Skelton took sanctuary in Westminster Abbey. He died June 21, 1529.



Skate. Edible fish with flattened body and whip-like tail
W. S. Berridge, F.Z.S.

SKERRIES. Watering place and seaport of co. Dublin, Irish Free State. It is 18 m. from Dublin on the G.N. of I. Rly. The chief industries are fishing and quarrying. Pop. 1,973. The Skerries are four small islands off the coast of co. Dublin. The name is also that of a reef about 3 m. off the S. coast of Devon.

SKERRYVORE. Rock extremity of a dangerous reef of the Inner Hebrides. The reef is about 10 m. S.W. of Tyree Island. It was the cause of numerous wrecks until 1844, in which year a lighthouse was completed, designed by Alan Stevenson. After it R. L. Stevenson named his house at Bournemouth.

SKEWEN. District of Glamorganshire. It stands on Swansea Bay, 2 m. from Neath, on the G.W. Rly. The industries are coal mining, copper smelting, and oil refining. Pop. 5,600.

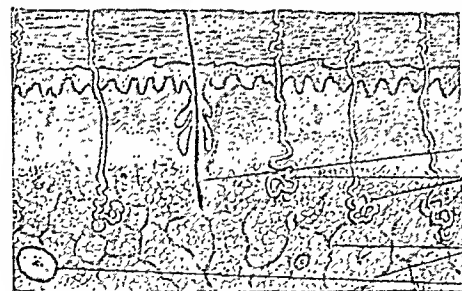
SKIBBEREEN. Urban dist. and seaport of co. Cork, Irish Free State. It stands on the Ilen, 54 m. from Cork, on the G.S. Rlys. In addition to the shipping, there is some fishing and a trade in corn, cattle, etc. Pop. 2,627.

SKIDDAW. Mountain of Cumberland. It is 3 m. from Keswick and rises to 3,054 ft. On the E. is an extensive tract of moorland which is known as Skiddaw Forest.

SKI-ING (Norw. ski, snow-shoe). Art of walking on ski. The ski are a form of snow-shoe, consisting of boards strapped to the feet; some 90 ins. long, 5 ins. broad in the widest part, and 1½ ins. thick just under the foot.

Ski as a means of progression over snow are of ancient origin. They were first adopted solely for sport in 1860 in Norway, since when they have become popular in many parts of the world. In order to enjoy ski-ing at its best the snow should be at least 6 ins. in depth and be well frozen. The pole has a disk of metal about 6 ins. from the foot to prevent it from penetrating the snow too far. In descending steep slopes the ski act as runners, the poles serving as a break.

The sport is now carried on at many Swiss centres. In 1901 the Davos Club was founded, and in 1903 the Ski Club of Great Britain. The Alpine Ski Club, reserved for experts, dates from 1908. The world's record jump of 147 ft. 8 ins. was made at Davos by Harald Smith, a Norwegian, in 1909.



Skin. Sectional diagram of the human skin, showing the epidermis and the corium (dermis) or true skin, indicating the arrangement of the sweat glands and the position of a hair follicle

SKIN. Tissue covering the surface of the body. It consists of two layers, the epidermis or cuticle and the dermis or true skin. The latter contains the blood vessels of the skin. The nails are thickenings of one of the layers of the epidermis. The deeper layers of the skin contain the hair follicles. Sebaceous glands are small sacs in the dermis, the ducts of which secrete a fatty substance called sebum, which acts as a lubricant to the hairs. Sweat glands are abundant over the whole skin, but are most numerous on the palms and soles. The dermis also contains the minute end-organs of nerves, by means of which sensations of touch, pain, heat, and cold are excited. See Dermatitis.

SKINNER. Dealer in skins, the predecessor of the modern furrier. See Fur.

The Skinners' Company is one of the great London city livery companies. In its charge are Tonbridge School, founded in 1553; a middle school for boys at Tunbridge Wells, 1887; commercial school for day scholars, Tonbridge, 1885; and almshouses at Palmer's Green, 1894. The hall, in Dowgate Hill, contains some valuable 16th century plate, and paintings by Frank Brangwyn.

Skinner's Company arms



SKIPPER (Du. schipper, a sailor). Warrant rank in the Royal Naval Reserve. It was instituted in Feb., 1911, concurrently with the establishment of the trawler, or minesweeping, section of the R.N.R., the warrants being granted to masters of fishing trawlers and drifters who volunteered to do annual training in peace and put themselves at the disposal of the admiralty in war. In the Great War more than 2,000 skippers were enrolled.

SKIPPER (Hesperiidae). Family of butterflies, represented in Britain by eight small brown and yellow species. The caterpillars feed on grasses and low herbs, usually spinning a few leaves together as a shelter, and most of them construct a slight kind of cocoon in which to pass the pupal stage. See Butterfly.

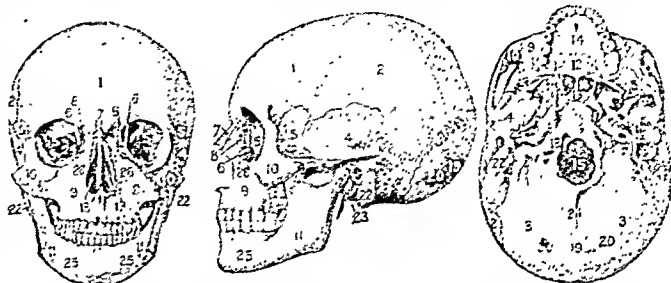
SKIPTON. Market town and urban dist. of Yorkshire (W.R.). It stands in the valley of the Aire, 26 m. from Leeds, on the L.M.S. Rly. It is also served by the Leeds and Liverpool Canal. The parish church, a Perpendicular building restored, has memorials to the Clifford family. The town grew up round a castle, built in Norman times and long the property of the Cliffords. Market days, Mon. and Wed. Pop. 12,400.

SKITTLES. Game of great antiquity and wide distribution. Four large pins or skittles are set up in the form of a diamond at one end of a green or alley; a bowl in the shape of a cheese and about 10 lb. in weight being thrown at them from a distance of 21 ft. The object is to strike the skittles so that all of them shall be knocked over in one or two throws. In another form of the game a ball is bowled at nine pins set up in the same manner, with the object of knocking them down in the fewest attempts. See Nine Pins.

SKODA WORKS. Manufacturing concern situated at Pilsen, Bohemia, in Czechoslovakia. Up to the end of 1918 it was one of the world's greatest arsenals and the largest steel works in Central Europe. It was in Austrian territory, and bore the same relation to the Austro-Hungarian govt. as Krupps (q.v.) to the German. In 1919 the works passed under the control of Czechoslovakia.

SKUA (Stereorarius) Genus of gulls, of which four species occur in Great Britain. They may be recognized by their brownish plumage. The common or great skua (S. catarrhactes) is 25 ins long and has mottled brown plumage. It breeds in the Shetlands, but is rather rare. Richardson's skua is smaller and has dusky plumage, except on the neck and under parts, which are yellowish white. More numerous than the common skua, it breeds in the Orkneys, Shetlands, and Hebrides. Buffon's skua and the pomarine skua are only rare visitors to the shores of Great Britain.

SKULL. Part of the skeleton. It consists of a cavity, the cranium, which contains the brain, and a bony structure for the organs of special sense, forming the face. The bones



1. Frontal bone. 2. Parietal bone. 3. Occipital bone. 4. Temporal bone. 5. Sphenoid bone. 6. Ethmoid bone. 7. Nasal bone. 8. Lacrymal bone. 9. Maxillary bone. 10. Zygomatic bone. 11. Mandible. 12. Palate bone. 13. Nasal septum. 14. Palatine process of maxilla bone. 15. Greater foramen. 16. Left choana (nares). 17. Foramen lacorum. 18. Occipital condyle. 19. Occipital protuberance. 20. Superior nuchal line of occipital bone. 21. External occipital crest. 22. Mastoid notch. 23. Styloid process. 24. Orbital fissure. 25. Mental foramen. 26. Infra-orbital foramen

Skull. Front, side, and view from below, of the human skull

composing the cranium are the occipital, the frontal, the sphenoid, the ethmoid two temporal, and two parietal bones. The external surface is smooth, but shows lines formed of small irregular bony processes or sutures



Skipper. The grizzled skipper, *Hesperia malvae*, a British butterfly

where the component bones are united. Internally, the cranium exhibits depressions corresponding to the large convolutions of the brain, and grooves marking the sites of the arteries and veins. At the base of the skull is the foramen magnum. The form of the skull varies widely in different races, skulls relatively wide being termed brachycephalic, whilst the long, narrow type is termed dolichocephalic. See Anthropology: Bone; Brain; Face; Man; Phrenology.

SKULL CAP (*Scutellaria galericulata*). Perennial herb of the order Labiales, a native of Europe, N. Africa, Asia, and N. America. It has lance-shaped, opposite leaves with toothed edges. The blue, bell-shaped, two-lipped flowers are in pairs at the base of the leaves. A smaller species, the lesser skull cap (S. minor), has pale purple flowers and the lip dotted with crimson.

SKUNK (*Mephitis*). Carnivorous mammal belonging to the weasel tribe found in N. and Central America. Rather smaller than a domestic cat it has a handsome black coat with two white stripes running along the back. The tail is long and bushy, measuring 18 ins. when the body is about 24 ins. long. Skunks are commonly met with in the open country



Skunk of Canada, *M. mephitis*
W. S. Berridge, F.Z.S.

and often near farms, where the hen-roost is a great attraction. They feed mainly on mice, frogs, and birds' eggs, and to a certain extent on insects. Their fur is of considerable value. The animal can emit an offensive odour from the secretion of a pair of glands situated near the tail.

SKYE. Island of the Inner Hebrides part of the county of Inverness. Its area is about 600 sq. m. The coast is deeply indented and the surface mountainous. The highest hills are the Cuillin range. The scenery is magnificent. The chief industries are fishing the rearing of cattle and sheep, and distilling. Portree is the chief place. Skye was the stronghold of the Macleods and Macdonalds. Dunvegan Castle being the headquarters of the former. The inhabitants are mainly crofters. A Highland gathering for Skye is held every year near Portree. Pop. 11,600. See Hebrides; Portree.

SKYE TERRIER. Bred of small dog. Formerly kept in the Isle of Skye for destroying vermin, it is now regarded merely as a pet. It has a long, low body with short legs, and the hair almost touching the ground. Its height is usually 10 ins. and the length of the body should be rather more than 30 ins. Two types are recognized by fanciers, the drooped breed and the prick-eared type. The Skye terrier is alert and intelligent and makes a capital house dog.

SKYLARK (*Alauda arvensis*). Bird of the order Passeridae, a native of Europe (including Britain) and Central and N. Asia. Its general colour is brown, streaked with black on the upper parts, and buffy white beneath. It measures about 7 ins. in total length. The first primary quill of the wing is exceedingly small, and the hind claw is very long and straight: two points which distinguish the skylarks from other larks. The open nest, found in fields and downs, is constructed of dry grass and is placed in a slight depression scratched in the ground. The food consists chiefly of seeds and insects.

SKY SCRAPER. Building of many storeys. These were first raised in New York, and are now found in many American cities and towns. In 1930 the highest of these sky scrapers was the Bank of Manhattan, New York. It is 838 ft. high and has 65 storeys. See New York.

SLADE, FELIX (1790-1868). British art-collector. Born in Lambeth, London, he became a collector of ancient and modern glass, pottery, old MSS., and engravings. He bequeathed a great part of these to the British Museum, and left £35,000 for the endowment of the Slade School of fine arts at Oxford, Cambridge, and London universities. The Oxford professorship, together with that of poetry, was discontinued from 1914. He died March 29, 1868.

The Slade School in London is a branch of University College. It was opened in 1871, with Sir E. Poynter as its first professor, and has professors of painting and sculpture, and lecturers in the history of art, anatomy, ornamental design, and perspective.

SLAG. Substance produced during the smelting of ores. By the formation of slag the impurities in the ore are removed. Some slags, consisting mainly of metallic oxides, are resmelted, and such slags are termed cinder or scoria. Slags are used for various purposes,

as ballast for rlys., macadamising roads, making into bricks, etc. Some slags may be burnt with lime, thus making an efficient hydraulic cement and slag from the basic Bessemer process forms a valuable fertiliser. See Metallurgy: Ore.

SLAITHWAITE. Urban dist. of York shire (W.R.). It stands on the Colne, and is served by the L.M.S. Rly. and the Huddersfield Canal, Huddersfield being four miles away. There are manufactures of woollen and cotton goods, and the place has baths whose waters are efficacious for skin diseases. At Moorside Edge near the town a site has been acquired by the B.B.C. for the erection of a regional transmitter station. Pop. 5,444.

SLANDER (Lat. scandalum, scandal). Malicious defamation of a person in his character business or profession by spoken words as distinct from written words, which is libel (q.v.). It is a less serious offence than libel as being less permanent and far-reaching, and exposes the offender

only to civil proceedings. Action will lie if the words impute a criminal offence, if they allege misconduct in a public office, if they reflect upon another's trade or profession, or if they cause special damage.

SLANEY. River of the Irish Free State. It rises in the S.W. of co. Wicklow and flows 60 m. S.W. and S. through counties Carlow and Wexford to Wexford Harbour. It receives the waters of the Bann, Derry, and other rivers, and has the town of Wexford at its mouth.

SLATE. In geology, fine-grained, hard fissile rocks which have been produced from clay or shale by metamorphism. Most slates are clays which, through heat and pressure, have become consolidated into cleavage planes, along which the slate splits readily. Good slates are hard and durable, compact, and do not split easily from exposure to changes of temperature

or to moisture. Its lightness, the ease with which it is split into thin sheets, and its weathering properties make slate an excellent roofing material.

SLATER, OSCAR German Jew convicted at Edinburgh, May, 1909, of the murder of Miss Gilchrist, an octogenarian living in Glasgow, who kept £3,000 worth of jewels in her bedroom. Sir A. Conan Doyle maintained his innocence, but in June, 1914, an inquiry reported that there was no evidence of a miscarriage of justice. Meanwhile, in 1909, sentence of death had been commuted to penal servitude for life. In 1927 he was released, and in 1928 the court of criminal appeal set aside his conviction.

SLAV. Name denoting a group of peoples, mostly in E. Europe. It is applied primarily to people speaking dialects of the Slavonic sub-family of Indo-European languages. From the standpoint of ethnology there is no homogeneous Slav race.

The Slav populations, political rather than ethnic communities, number: Poles, including Kashubs, 20,000,000; Czechs, Slovaks, and Wends, 10,000,000; S. or Yugoslavs, 20,000,000. There are about 8,000,000 in America. The S. Slavs include the Bulgars. Slavonic languages pertain to the E. or Aryan branch of the Indo-European family. As such they use sibilants where gutturals occur in the languages of the W. branch.

SLAVE. River of Canada. It forms part of the Mackenzie river system and is the connecting link between Lake Athabasca and the Great Slave Lake, receiving the Peace river 20 m. N. of Lake Athabasca. At Grahame Landing the river drops over a series of rapids to Fort Smith, the head of navigation from the Arctic Ocean. Below this the river flows 190 m. over a lowland to reach the Great Slave Lake. Its length is 265 m.

Slave Coast. Name applied to a portion of the coast of W. Africa between the Gold Coast and the river Benin.

SLAVERY (Med. Latin, slavus, a Slavonic captive). Economic institution consisting in the utilisation of forced labour without pay.

The civilization of the ancient world was based on the institution of slavery, and without this economic foundation neither Athenian culture nor the Roman imperial system could have existed. Christianity did not forbid slavery, but commended manumission, a practice which profoundly modified the population of S. Europe. By the 12th century the enslavement of Europeans in Europe had almost disappeared, becoming only a legal penalty for particular offences. After the discovery of the New World, negro slavery was firmly established in all the tropical and semi-tropical colonies. English criminals and political prisoners were sent as slaves to the plantations in the 17th century.

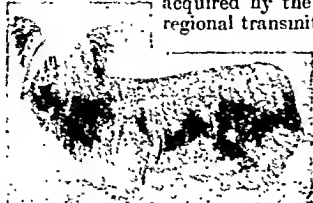
From about 1650 the European conscience was gradually roused to a sense of the injustice and moral evils of slavery, the Quakers being among the first to protest. The Emancipation Act passed in 1833 was a measure that came gradually into operation so as to release all slaves in the British Empire by 1840. In 1839 the British and Foreign Anti-Slavery Society was founded, its objects being the universal extinction of slavery and the slave trade, and the protection of freed slaves in British possessions. Slavery was extinguished in the French colonies in 1848, by Holland in 1863 and in the U.S.A. in 1865, during the Civil War. It is now, nominally at least, extinct in all civilized countries.

SLAVE TRADE. The modern European traffic in negroes was begun by the Portuguese in 1442, but was only developed after the discovery of America. As Spain had no tropical African possessions, the trade was in the hands of the English, French, and Dutch. By the treaty of Utrecht, 1713, Spain concluded an exclusive contract, called the Asiento, with the English traders to supply her colonies with slaves. During the 18th century the trade attained great dimensions. In Britain, after a long struggle, Lord Grenville's Act for the abolition of the slave trade was passed in 1807.

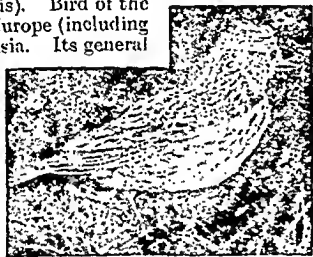
SLEAFORD. Market town and urban dist. of Lincolnshire. It stands on the Lea, 21 m. from Lincoln, on the L.N.E. Rly. The church of S. Denis has a 15th century rood-screen. The chief industry is malting. The town is the capital of the Kesteven district. Market day, Monday. Pop. 6,680.

SLEEPING SICKNESS. Disease due to infection by an organism of the genus Trypanosoma, prevalent along the W. coast of Africa, the Congo, Uganda, Rhodesia, and other parts of Africa. The parasite occurs in antelopes and other animals, and in domestic dogs. From these it is conveyed to man, and from man to man by the bite of certain tsetse flies.

The symptoms begin usually within two or three weeks with an attack of fever and rash on the skin. The lymphatic glands become enlarged. After some weeks or months the patient becomes slovenly, dull and apathetic. Preventive measures include segregating the sick; avoidance of bites by wearing appropriate clothing, and immediate disinfection of a bite with tincture of iodine.



Skye Terrier. Wolvesley Chumma, a champion of the breed



Skylark, British song-bird which nests in the fields and downs W. S. Berridge, F.Z.S.

African sleeping sickness must not be confused with encephalitis lethargica, the so-called sleepy sickness, outbreaks of which have been noted in England since 1918.

SLEIGH or **SLEDGE**. Wheelless vehicle used on ice or snow. Built on runners, sleighs vary very much in size and shape according to their use. In countries which are snowbound during the winter sleighs drawn by man-power, horses, reindeer, or dogs are the only means of transport, and are adapted for heavy draught purposes or built lightly as conveyances. See Reindeer; Tobogganing.

SLESVIG - HOLSTEIN QUESTION. European difficulty that caused the war of 1866 between Austria and Prussia. Both Slesvig and Holstein were ruled by the king of Denmark, but in each there was a numerous German population, and Holstein was a member of the German Confederation.

Frederick VII, who became king in 1847, was without sons, and in the duchies, unlike Denmark, the Salic law was recognized. Frederick claimed that the whole of his domains should pass together on his death, whereupon the Holsteiners revolted and a Prussian army entered the duchies in their support. The Powers interfered, and the Prussians withdrew.

When, in 1863, Frederick died and a kinsman, Christian, became king, he was opposed by Frederick, duke of Augustenburg, who was supported by the people of Holstein. Prussia again interfered, declaring for the right of the duchies to self-government under Christian. A conference was called in London, but it failed to prevent war. With Prussian and Austrian armies against them, the Danes were quickly beaten and the duchies ceded to the two powers, but they were annexed by Prussia after her victory over Austria. See Denmark; Holstein; Schleswig.

SLIEVE BLOOM. Mt. range of Ireland. It forms part of the boundary between King's co. (Offaly) and Queen's co. (Leix) and attains an alt. of 1,733 ft.

SLIGO. Co. of Connaught, Irish Free State. Its area is 707 sq. m. It has a low coastline on the Atlantic, broken by Sligo and other bays. There are mts. in the N.E., and elsewhere are the Ox and Curlew Mts. The rivers include the Moy, Esky, Owenmore, and Owen-

boy, and among the loughs are Arrow, Gara, and Gill. Industries are the grazing of cattle, fishing, and the growing of potatoes and oats. The co. is served by the G.S. Rlys. Sligo is the co. town; other places are Tobercurry, Ballymote, and Collooney. Inishmurray and other islands belong to the co. Pop. 71,388.



Sleigh. A Russian horse-drawn sleigh, as used for draught purposes

Sligo Bay, 134 m. from Dublin by rail, and is served by the G.S. Rlys. There is a good hard-bour. It exports dustries are flour milling, saw milling, and fishing. The chief building is the modern Roman Catholic cathedral. Pop 11,437.

SLING. Primitive projectile weapon. The sling is a short piece of leather, to each end of which cords are attached; a stone is placed in the pocket formed by the leather, and gripping both cords, the slinger whirls it; when he lets one cord free the stone is shot out by the momentum. In nautical usage, a sling is a rope supporting a mast, or the hooked and thimble ropes used in hoisting a ship's boats.

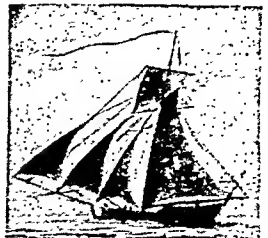
SLOAN, JOHN TONHUNTER. American jockey. He first visited England in 1897 and attracted much attention by the peculiar seat he adopted, perched in a crouched fashion on the horse's withers. At Newmarket on Sept. 30, 1898, he rode five consecutive winners, and again on April 18, 1899, won on four successive mounts. See Jockey.

SLOANE, SIR HANS (1660-1753) British physician, naturalist, and collector. Of Scottish descent, he was born at Killyleagh, co. Down, Ireland, April 16, 1660, studied in Paris and Montpellier, was physician to the governor of Jamaica. 1687-89; secretary of the Royal Society, 1693-1712; president, 1727-41; and president of the Royal College of Physicians, 1719-35. Made a baronet, 1716, he died Jan. 11, 1753.

After purchasing the manor of Chelsea, 1712, he presented the freehold of the Chelsea Physic Garden to the Society of Apothecaries, 1721, and his collection of natural history specimens, books, MSS., pictures, coins, prints, etc., formed the nucleus of the British Museum.

SLOE. Name given to the fruit of the blackthorn, or the tree itself. The fruit is about the size of a small damson, and black or very dark purple in colour, with a white bloom. Very sour to the taste, it is used in the making of sloe gin and a few preserves. See Blackthorn.

SLOOP (Duteh, sloop). Vessel with a single mast, a fixed bowsprit, and a jib stay, i.e. a stay running from the masthead to the bowsprit head. Ships of war of various rigs below the grade of frigate were formerly called sloops. The term is now applied to a number of vessels built during the Great War for service in sweeping mines and for escorting merchant ships, and named after different flowers.



Sloop. Vessel used in the British navy in the 18th century. From Falconer's Universal Marine Dictionary

SLOTH. Family of edentate mammals, found only in S. America. They include two genera, the three-toed (Bradypus) and the two-toed (Choloepus) sloths. The body is bulky and heavy, and the head comparatively small and rounded, while the limbs end in hook-like feet armed with long curved claws by which the animal clings back downwards to the trees. Sloths feed upon leaves, shoots, and fruit. Among the trees they can proceed with considerable speed; but on the ground they crawl slowly and with difficulty.



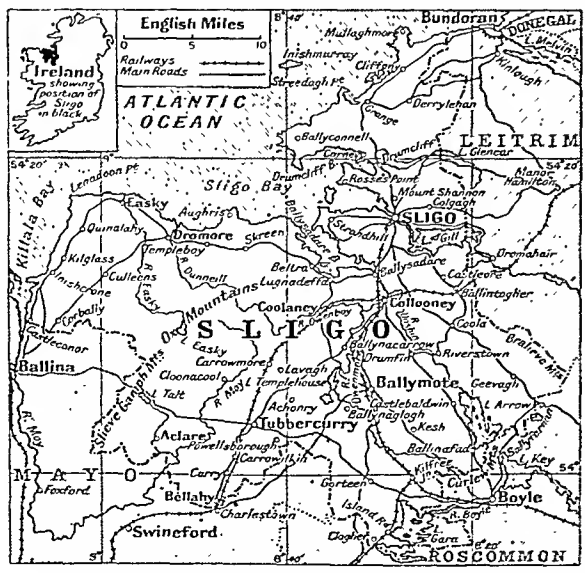
Sloth. Two-toed species, Choloepus, of the S. American mammal. W. S. Berridge, F.Z.S.

SLOUGH. Market town and urban dist. of Buckinghamshire. It is 18 m. from London and 2 m. from Windsor, on the G.W. Rly. The town has engineering works and other industries. During the Great War the Government established a mechanical transport depot here. In 1928 a scheme for extending the area of the urban district, now a huge industrial centre, was put forward. Market day, Tues. Pop. 16,397.

SLOVAK. Slav people in the Czechoslovakia (q.v.) republic. Numbering about 2,500,000, mainly on the N. uplands of the old Hungarian kingdom, they occur also in Moravia. They are mostly hard-working peasants, practising a somewhat backward husbandry, or itinerant artisans. Lutheran or Roman Catholic, they have preserved in isolation many primitive Slavic customs. Their dialects, like Polish and Czech, pertain to the W. group of Slavonic languages. See Czechoslovakia; Slav.

SLOVENE. Slav people in Yugoslavia. They number 1,024,760, mainly in the old Austro-Hungarian lands of Carniola, Gorizia, Styria, S. Carinthia, and the Istrian coastland. Established there since the 7th century, when the Slav immigration into the Balkan peninsula was pressed back by the Avars, they have acted as a barrier to the Germanic movement towards the Adriatic. They are mainly Roman Catholics. Their dialects, like Serbian and Croat, pertain to the S. group of Slavonic languages. Since the Great War they have become politically united with their fellow South Slavs to form Yugoslavia or the kingdom of the Serbs-Croats-Slovenes. See Yugoslavia.

SLUG. Name given to those land molluscs in which the shell is either internal or absent. In other respects they do not differ essentially from snails. All British slugs have small flattened shells concealed within the mantle cavity, but in one group the shell is reduced to a mere chalky granule. The field slug (Agriolimax agrestis) and the keeled slug



Sligo. Map of the seaboard county of north-west Ireland

(*Limax Sowerbyi*), both very abundant, are destructive in gardens. Most of the other slugs feed upon fungi, lichens, and decaying animal and vegetable matter, and are harmless to garden plants. See Mollusc; Snail.

SLUYS. River of the Netherlands. Here was fought a naval engagement between the English and the French, June 24, 1340.

Edward III assembled a fleet comprising about 200 ships, and on June 20, 1340, was joined off Blankenberghe by the northern fleet, of 50 sail. They lay at anchor in the river Sluys, and attacked on the morning of June 24. The battle ended with the almost total destruction of the French fleet. Pron. Slois.

SMALL HOLDING. Portion of land of limited area or rental let to agricultural workers for cultivation. In 1892 the Small Holdings Act was passed; it was designed to help agricultural labourers to acquire a holding by a system of instalment purchase, and fixed the limits of such holdings, which were to be allotted by county councils. The Act was a failure, however, and was superseded by the Small Holdings and Allotments Act of 1907. This was followed by other Acts. See Allotment; Enclosure.

SMALL POX or **VARIOLA.** Acute infectious disease, the micro-organism responsible for which has not yet been identified. The disease is very contagious, and it is probable that the infection is conveyed by small scales shed from the skin during convalescence. The incubation period is from 10 to 14 days, and the disease is particularly fatal to children.

The symptoms begin with a chill, and a rise of temperature to 103° or 104° F. Severe headache, pains in the back, and vomiting occur, and sometimes delirium. Usually on the fourth day papules appear on the forehead, face, and scalp, and extend over the whole body. These suppurate about the ninth day, begin to dry up about the eleventh day, and later scars are formed, producing pitting. Haemorrhagic small pox or black small pox is a form in which haemorrhage occurs into the pustules, and there may be haemorrhage from the mucous membranes. See Vaccination.

SMART, SIR GEORGE THOMAS (1776-1867). British musician. Born in London, May 10, 1776, he became a member of the Chapel Royal choir, played in various orchestras, and in 1811 conducted a successful series of concerts in Dublin, where he was knighted by the lord-lieutenant. An original member of the Philharmonic Society, he conducted many of its concerts, 1813-44. He also taught, Jenny Lind being a pupil. He died Feb. 23, 1867.

SMARTWEED or **WATER PEPPER** (*Polygonum hydropiper*). Annual herb of the order Polygonaceae. A native of the N. temperate hemisphere, it has a creeping, much-branched stem with swollen joints and lance-shaped leaves. The small greenish-rosy flowers are in short terminal sprays. The juices are very acrid, hence its popular names. The plant has been used as a diuretic medicine.

SMEATON, JOHN (1724-92). British engineer. Born at Austhorpe, near Leeds, England, June 8, 1724, he turned his attention to the manufacture of scientific instruments and wrote many engineering papers for the Royal Society, the gold medal of which he received in 1759 for his paper on wind and water mills. He made a special study of canal and harbour construction, and in 1755 was called upon to replace



Slug. The black slug, *Arion ater*, with tentacles partly retracted. Reduced

the second Eddystone lighthouse. a work he completed in 1759. He built a number of bridges, and constructed the Forth and Clyde canal. Smeaton died at Austhorpe, Oct. 28, 1792.

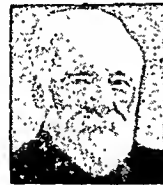
SMELL. Property of many substances which affect certain nerves of animals. The organs of smell consist of the olfactory region in the nose, which is a part of the mucous membrane covering the upper turbinal bone and the adjacent part of the nasal septum, and containing special olfactory nerve cells. The olfactory nerves pass up through minute holes in the cribiform plate of the ethmoid bone, and enter a complicated structure, the olfactory bulb, which is a continuation of the olfactory tract in the brain. See Nose.

SMELT (*Osmerus*). Genus of small marine fishes of the salmon family. Of the three species the common smelt (*O. eperlanus*) is the only one occurring in European waters. It is found of brackish waters, and is often found in the Thames above London. It grows to a length of seven or eight inches, though it is usually less. It is distinguished by its silvery grey hue, with greenish back.

SMETHWICK. County borough of Staffordshire. It is 3½ m. from Birmingham, on the G.W. and L.M.S. Rlys. The industries include engineering works and the making of glass, chemicals, hardware, and scales for weighing. Pop. 76,940.

Smilax. Genus of shrubby plants belonging to the order Liliaceae. See China-root.

SMILES, SAMUEL (1812-1904). British author. Born at Haddington, Dec. 23, 1812, he graduated M.D. at Edinburgh University. Dissatisfied, however, with medical practice, he became editor of *The Leeds Times*. Subsequently he became identified with railway management in Leeds and London. His first considerable literary success was his biography of George Stephenson, 1857. In 1859 appeared the book on which his fame mainly rests, *Self Help*. Other works are *Lives of the Engineers*, 1861; *Industrial Biography*, 1863; *James Nasmyth*, 1883; and *Josiah Wedgwood*, 1894. Smiles died April 16, 1904.



Samuel Smiles, British author. Chief and Fry

SMILLIE, ROBERT (b. 1857). British labour leader. Born in Lanarkshire, Scotland, his early years were spent as a miner in the Lanarkshire collieries. He became president of the Scottish Miners' Federation in 1894, and from 1912-21 was president of the Miners' Federation of Great Britain. In 1919 he was the chief representative of the Federation on the Sankey Coal Industry Commission at the House of Lords, and leader of the miners in the strike of 1920. He became president of the Scottish Miners' Union in 1921, and was Labour M.P. for Morpeth 1923-29. Consult his *My Life for Labour*, 1924.

SMIRKE, SIR ROBERT (1781-1867). British architect. Born in London, Oct. 1, 1781, he studied at the R.A. schools, and was articled to Sir John Soane. He was appointed architect to the board of trade, was elected A.R.A. in 1808, R.A. in 1811, and was treasurer of the Academy 1820-50. His best-known work is the British Museum, completed 1847; he also designed the old General Post Office, demolished 1913, and the College of Physicians in Trafalgar Square. He died April 18, 1867.

SMITH, ADAM (1723-90). British economist. Born at Kirkcaldy, June 5, 1723, he went from the university of Glasgow in 1740 to Balliol College, Oxford. In 1748 Smith began to lecture in Edinburgh, and in 1751 was chosen professor of logic at Glasgow, where, from 1752-63, he was professor of moral philosophy.

In 1776 the result of ten years' labour appeared in *The Wealth of Nations*, the most influential and exhaustive work of its kind. Its influence on the study of political economy was enormous, and it was perhaps equally great on practical politics. Smith became a commissioner of customs, 1778, and died July 17, 1790. See Political Economy.

SMITH, SIR GEORGE ADAM (b. 1856). British scholar. Born at Calcutta, Oct. 19, 1856, son of George Smith (1833-1919), an authority on India and for many years Indian correspondent of *The Times*, he entered the ministry of the Free Church of Scotland and became assistant minister at Brechin in 1880. From 1880-82 he was Hebrew tutor at the Free Church College, Aberdeen, and from 1882-92 minister

Aberdeen. From 1892-1909 Smith was professor of O.T. language, literature, and theology at the Free (later U.F.) Church College, Glasgow, and then became principal of Aberdeen University. He was author of numerous standard books, including *Historical Geography of the Holy Land*, *Life of Henry Drummond*, *The Book of Isaiah*, and *The Twelve Prophets*. He was knighted in 1916.



Sir George A. Smith, British scholar

SMITH, JOHN (1580-1631). English soldier and colonist. Born at Willoughby, Lincolnshire, he saw service in France and Flanders. In 1606 he joined an emigrant party to Virginia, arriving at Chesapeake Bay, April 26, 1607. There he proved an able member of the council. In a fray with the Indians, Smith was captured, but released, according to his own account, at the intercession of Princess Pocahontas (q.v.). In 1608 he became president of Virginia. He explored and mapped Chesapeake Bay, and in 1614 charted the New England coast as far as Cape Cod. He wrote many books and pamphlets relating his own adventures.

SMITH, JOSEPH (1805-44). Founder of Mormonism. Born at Sharon, Vermont, U.S.A., Dec. 23, 1805, he alleged in 1827 that under angelic guidance he had discovered new scriptures, which he professed to translate, and published, 1830, as the *Book of Mormon*. The Church was organized the same year, with Smith as its president, and the remainder of his history is that of the Mormon Church. The doctrine of polygamy was not published to the world, but it was obeyed by Smith and other leading members of the community. So bitter was the hostility aroused among non-Mormons that Smith and his brother were assassinated, June 27, 1844. See Mormons.

SMITH, RODNEY, commonly known as Gipsy Smith (b. 1860). British evangelist. Born at Woodford, Essex, Mar. 31, 1860, he was the son of a gipsy. He began evangelistic work in the Salvation Army, and for many years was chief missionary of the Free Church Federation of Gt. Britain, conducting revival campaigns throughout the empire.

SMITH, SYDNEY (1771-1845). British divine author, and wit. Born at Woodford, Essex, June 3, 1771, he was educated at Winchester and New College, Oxford, where his intellectual gifts made him prominent. In 1794 he was ordained and became curate of Netheravon, Salisbury, but in 1797 he settled in Edinburgh, and with Jeffrey, Brougham, and others founded *The Edinburgh Review*, of which he was the first editor. From 1803-9 he lived in London, and there made his mark as a preacher and lecturer. He was also a prominent figure in Whig circles. After holding other livings, he returned to London in 1831 as canon residentiary of St. Paul's. He died in London, Feb. 22, 1845.

Smith's writings include Peter Plymley's Letters, 1807-8, on Roman Catholic emancipation, many other letters and pamphlets on subjects dear to a Whig reformer, and numerous articles in *The Edinburgh Review*. He is best known, however, as the author of many witty sayings. His *Wit and Wisdom* was published in 1861.



Sydney Smith, British divine and wit

SMITH, WALTER CHALMERS (1824-1908). Scottish poet. Born Dec. 5, 1824, in 1850 he became minister of the Scottish Free Church in Pentonville, London. Later he held ministerial appointments at Milnathort, Kinross-shire, Roxburgh Free Church, Edinburgh, the Free Tron Church, Glasgow, and the Free High Church, Edinburgh. Moderator of the General Assembly, 1893, he retired in 1894, and died Sept. 20, 1908. As a poet Smith began with *The Bishop's Walk*, published in 1861 under the pseudonym of Orwell.

SMITH, WILLIAM HENRY (1825-91). British politician. Born in London June 24, 1825, the son of William H. Smith, who established the business of newspaper distributors now known as W. H. Smith & Son, he joined his father when a youth and enormously developed the business. In 1868 he became a Conservative M.P. He was financial secretary to the treasury, 1874, first lord of the admiralty, 1877, and for short periods, 1885-86, secretary for war and chief secretary for Ireland. In 1886 Smith was made leader of the House of Commons and first lord of the treasury, positions he held until his death, Oct. 6, 1891. His widow was created Viscountess Hambleden, and on her death, in 1913, the title descended to their son, Hon. W. F. D. Smith (1868-1928). See Hambleden, Viscount.



W. H. Smith, British politician

their son, Hon. W. F. D. Smith (1868-1928). See Hambleden, Viscount.

SMITH, WILLIAM ROBERTSON (1846-94). British scholar. Born at Keig, Aberdeenshire, Nov. 8, 1846, he was educated at the university of Aberdeen. After serving as assistant to the professor of natural philosophy in Edinburgh he became, in 1870, professor in the Free Church College, Aberdeen. In consequence of some articles in *The Encyclopaedia Britannica* he was charged with heresy, and in 1881 was deprived of his position. In 1883 Smith was chosen professor of Arabic at Cambridge, and in 1886 university librarian, being also fellow of Trinity, and then of Christ's College. He died March 31, 1894.

Smith was the most prominent Biblical critic of his day. In 1881 he became editor of *The Encyclopaedia Britannica*.

SMITH, SIR WILLIAM SIDNEY (1764-1840). British sailor. Born June 21, 1764, he entered the navy at the age of 13, and served on the N. American station. In 1793 he took

part in Hood's action off Toulon, and commanded a frigate in the North Sea from 1794-96, when he was captured by the French. After two years he escaped, was given a Mediterranean command, and in 1799 undertook the defence of St. Jean d'Acre against Napoleon, holding the place successfully for eleven weeks. He died in Paris, May 26, 1840.

SMITH-DORRIEN, SIR HORACE LOCKWOOD (1858-1930). British soldier. Born May 26, 1858, he entered the Sherwood Foresters in 1876, and in 1879 served in the Zulu War. Between 1882 and 1886, and again in 1898, he was in all the campaigns in Egypt and the Sudan. In the South African War he commanded first a battalion, then a brigade, and finally a division. Adjutant-general in India, 1901-3, he commanded the Quetta division there, 1903-7, and then, returning to England, was commander-in-chief at Aldershot, 1907-12, and from 1912-14 held the southern command. When the Great War broke out he took command of the 2nd Corps, led it in the Mons retreat, and until May, 1915, when he was put at the head of the 2nd Army. Later in 1915 he went to take charge of the operations in East Africa. He was governor of Gibraltar, 1918-23, and he died, the result of a motor accident, August 12, 1930.



Sir Horace Smith-Dorrien, British soldier

SMITHFIELD. London district. It lies S. of Farringdon Street station, between Farringdon Street on the W. and Aldersgate Street on the E. Anciently the scene of jousts, tournaments, and fairs, it became a place of execution and of burnings.



Smithfield, London. South front of the central meat market

The cattle market was removed to Copenhagen Fields in 1855, and on part of its old site the City Corporation erected the central meat market, opened 1868; and the central market for poultry, provisions, fish, vegetables, etc., 1892. The Smithfield Club was founded in 1798. It holds a show of fat stock every December at the Agricultural Hall, Islington.

SMITH'S FALLS. Town of Ontario, Canada. It is on the Rideau river and canal, 39 m. S.S.W. of Ottawa, and is served by the C.P. and C.N. Rlys. Textiles and agricultural implements are manufactured. Pop. 6,790.

SMITHSONIAN INSTITUTION. An American educational institution. It was established by Act of Congress in Washington, 1846, through the bequest of James Macie Smithson, F.R.S. (1765-1829). It has been largely responsible for the success of the



W. R. Smith, British scholar

Weather Bureau, the national museum, the bureau of American ethnology, the national zoological park, the Langley aerodynamical laboratory, and the aerophysical laboratory. Research work at the institution was extended by a later large gift of funds made by T. G. Hodgkins.

SMOKE. Visible vapour or volatile matter, one of the products of combustion. The term is more specifically applied to the visible gaseous product of the combustion of coal, wood, and similar substances. Such smoke consists chiefly of carbon or hydrocarbon particles. Smoke is caused by incomplete combustion, and its production can practically be eliminated by the use of proper furnaces.

Smoke arising from manufactories is subject to regulations under the Public Health Act, 1875. The Coal Smoke Abatement Society exists for the purpose of suggesting means for improvement in smoke abatement in large cities.

SMOLENSK. City of the Union of Soviet Socialist Republics, capital of the prov. of Smolensk. It is situated on the Dnieper, 250 m. W.S.W. of Moscow, and is a rly junction for Riga, Warsaw, and Moscow. A celebrated picture of the Virgin in the cathedral made it a place of pilgrimage. A university was established in 1919. Pop. 78,520.

SMOLLETT, TOBIAS GEORGE (1721-71). British novelist. Born at Dalquhurn, Dumbartonshire, of a good Scottish family, he became a naval surgeon, but turned from that to literature. His first novel, *Roderick Random*, published in 1748, embodies Smollett's own experiences in the navy and elsewhere. It was a decided success, and so also was *Peregrine Pickle*, 1751. Both novels abound in rollicking humour.

Dying the next few years appeared a number of translations and a *History of England*. Smollett ultimately settled at Leghorn, where he wrote *The Expedition of Humphrey Clinker*, which was published in 1771. He died at Leghorn, Sept. 17, 1771.



Tobias Smollett, British novelist

SMUGGLING. Term applied to the offence of defrauding the revenue by evading the customs duties, or by importing or exporting prohibited goods into or from a country. It is also used to denote the illicit distilling of spirituous liquors. Cornwall and Devon were noted smugglers' counties.

Legislation against smuggling in England is frequent from the 14th century. The increased customs imposed by William III led to a marked increase of organized smuggling, especially in brandy, wines, tobacco, and tea. In 1732 a House of Commons committee exposed its enormous spread and the grave corruption of excisemen. Walpole's reduction of wine and tobacco duties, the Smugglers' Act of 1736, making the offence a felony, and later enactments, brought organized smuggling practically to an end. See Coastguard; Customs; Excise.

SMUT (Ustilago). Genus of zygomycetous fungi parasitic upon herbs and grasses. Several of them are pests upon the cultivated cereals,



Jan Christiaan Smuts, S. African politician

Russell

producing the conditions known as "smut," "blackball," "chimney-sweeper," etc. The mycelial threads run between the cells of the deeper tissues and break through to the surface, where they produce their masses of microscopic brown spores, which appear in the mass like soot.

SMUTS, JAN CHRISTIAAN (b. 1870). South African politician and soldier. Born May 24, 1870, at Bovenplaats, Cape Colony, of Boer parentage, he entered Christ's College, Cambridge. In 1896 he settled in Johannesburg and practised at the Transvaal bar. In 1898 Kruger appointed Smuts state attorney

of the South African republic, and he held the office with notable success until the outbreak of the Boer War in 1899. He fought in many actions, and during 1901, in independent command, penetrated to Cape Colony, where he continued a daring guerrilla warfare. In the first Transvaal government, 1907, he was Colonial Secretary, and in the first S. African government, 1910, he held the joint portfolios of the interior, mines, and defence. In 1912 he was transferred to the treasury while still remaining minister of defence

At the outbreak of the Great War Smuts was still Botha's leading colleague. In 1916 he took over the chief command in E. Africa, and he took part in the Peace Conference in Paris in 1919. On the death of Botha, Aug. 27, 1919, Smuts became premier of S. Africa. He held office until 1924, when he was defeated and became leader of the Opposition. After the general election in June, 1929, his party was again in a minority.

Smuts has made a reputation as a philosopher, his philosophy being set forth in his book *Holism and Evolution*, 1926. He was chosen president of the British Association for the centenary meeting in London in 1931.

SMYRNA. City of Turkey, called by the Turks Izmir. It stands on the W. coast of Asia Minor, at the head of the Gulf of Smyrna, and is the capital of the vilayet of the same



Smyrna. Sea front, the diplomatic quarter, rebuilt after destruction by the evacuating Greek army

name, also known as Aidin. It is a great centre of commerce. The fine harbour has ample quays, and Smyrna is the terminus of two rly. systems. Pop. 153,845.

One of the seven churches mentioned in the Book of Revelation, Smyrna has been associated with Christianity from the beginning, and is the seat of archbishops of the Greek, Roman Catholic, and Armenian communions. The Turks obtained possession of it in 1424. By the treaty of Sévres Turkey agreed that Smyrna, with a surrounding strip of territory, should be administered by Greece, but with the retention of Turkish sovereignty, for five years. The Greeks, defeated by the Turks, evacuated the city Sept., 1922.

SMYTH, DAME ETHEL MARY (b. 1858). British composer. Born in London, April 23, 1858, she studied at Leipzig, 1877, where her string quintet attracted favourable attention in 1884. Her *Mass in D* was sung under Sir Joseph Barnby in London in 1893. Her best known operas are *Fantasio*, 1898; *Der Wald*, 1901; *The Wreckers*, 1906, produced in London, 1909; and *The Boatswain's Mate*, 1915. She has also written two symphonies and many other compositions. Ethel Smyth has been a vigorous figure in the feminist movement. She was created D.B.E. in 1922.



Dame Ethel Smyth, British composer
Russell

Snaefell. Highest mountain in the Isle of Man. It is 5 m. S.W. of Ramsey, and is 2,034 ft. high.

SNAIL. Name applied to many gastropod molluscs that possess an external shell. They are of world-wide distribution, the Polar

regions excepted. The British list includes 127 species, of which 81 are land snails and 46 fresh-water. There are also a great number of marine snails, of which the periwinkle is an example.

Snails are most active after rain. In continued dry weather they retire underground or to sheltered spots, and aestivate till the damp weather returns. Most snails hibernate. The great majority are vegetarians, but only three or four species do serious damage to garden plants, others attacking weeds and fungi, and some restricting their attentions to mosses and other low plants. With few exceptions, snails are nocturnal in habit. They glide by wavelike movements of the foot. Most species are hermaphrodite and are reproduced by means of eggs. All land snails are edible, and many of the larger ones are eaten. See *Animal*; *Gastropoda*; *Mollusc*

SNAKE (A.S. *snaca*) OR **SERPENT.** Reptiles of the order Squamata. The upper sides are clothed with small overlapping scales, and the underside with broad plates, except in the Sea-snakes (q.v.), where the body is keeled below and clad with scales. The body is elongated and cylindrical, without any external limbs. The eye is protected by a fixed transparent cover.

The union of the several bones of the skull and jaws is so elastic that dislocation takes place readily to allow the swallowing of prey larger than the snake's head. To assist in such operations the slender, pointed teeth are all directed backward, and those of the jaws are supplemented by others on the palate. In many snakes certain teeth are developed into fangs, and a fold in the enamel provides a channel for the flow of venom from the poison-gland to the victim's wound. The forked tongue can be protruded through a notch without opening the mouth, and is so used constantly to ascertain the nature of near objects. The entire skin is shed at intervals.

In Great Britain the only snake which inflicts a poisonous bite is the adder or viper.

The embryonic stages take place in eggs, which have soft shells and are not incubated; in some species they are retained in the body of the parent and hatch in the oviduct. About a thousand species are known from all parts of the world with the exception of the Polar regions. They are most abundant in the Tropics. They are all carnivorous, and consume their prey whole. See *Anaconda*; *Boa*; *Cobra*; *Copperhead*; *Coral Snake*; *Grass Snake*; *Rattlesnake*; *Reptile*, etc.

SNAKE CHARMING. This is a trick pure and simple, based on an intimate knowledge of the ways of the reptile generally a cobra, whose fangs have usually been removed.

SNAKE ROOT. Popular name for several plants. Black snake root is *Cimicifuga racemosa*, and also the N. American species of *Sanicula*. Button snake root is *Eryngium yuccifolium* and several species of *Liatris*. Sampson's snake root is *Gentiana villosa*; seneca snake root is *Polygala seneca*.

SNAKE'S HEAD (*Fritillaria meleagris*). Bulbous perennial herb of the order Liliaceae, native of Europe and W. Asia. The small bulb consists of only a few swollen scales. The large, drooping flowers are of a dull purple colour spotted with oval patches of a paler tint.

SNAPDRAGON (*Antirrhinum majus*). Perennial herb of the order Scrophulariaceae, native of Europe. The variable leaves are more or less lance-shaped. The tubular flowers are closed by the compression of the

rounded upper lip, and are of various colours, purple, white, yellow, and crimson. Garden snapdragons are mostly cultivated forms of this species. The only British species (*A. orontium*) is found in cornfields

SNARESBROOK (Dan. *Snar* or *Snorre*, the swift). District of Essex, now incorporated with Wanstead. It gives its name to a station on the L.N.E. Rly., 7½ m. from Liverpool Street. It is on the S.W. border of Epping Forest, and was noted for its deer, song birds, and noble trees. About the middle of the 19th century its old country houses began to be surrounded by new villas and shops.



Snail. The Roman or edible snail, *Helix pomatia*

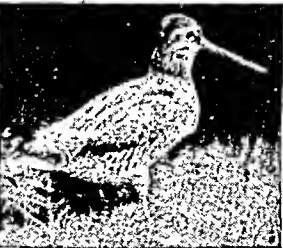
SNEEZEWORT (*Achillea ptarmica*). Perennial herb of the order Compositae. A native of Europe, Asia Minor, and Siberia, it has a long, creeping root-stock and narrow, stalkless leaves with toothed edges. The flower stem branches above, each branch supporting one of the rather simple flower heads, which have white outer ray florets and greenish inner tubular florets. The dried and pulverised root-stock is said to afford a substitute for snuff. See *Yarrow*.



Sneezewort. Flowers of *Achillea ptarmica*

SNEEZING. Reflex action set up by irritation of the nasal mucous membrane. There is first a deep inspiration, then the glottis is momentarily closed and the abdominal muscles, contracting strongly, press the viscera against the diaphragm, thus raising the pressure in the lungs. The glottis then opens and a strong current of air is directed through the nose in order to expel the irritating particle. See *Nose*; *Smell*.

SNIDER, JACOB (d. 1866). Dutch-American inventor. He made a number of inventions, one being for a breech-loading



Snipe. *Gallinago coelestis*, the common British species
W. S. Herridge, F.Z.S.

rifle which, in 1859, he took to England. It was accepted by the British government, but the details of payment had not been settled when Snider died, Oct. 25, 1866.

SNIFE (*Gallinago*). Genus of birds belonging to the plover tribe. Three species are known in Great Britain. The common snipe (*G. coelestis*) is found in most marshy districts, arriving from Scandinavia in Oct. and Nov. and leaving in March. It has mottled black and brown plumage on the upper parts, white bars on the flanks, and white under parts. It is about 10 ins. in length, and has a long beak, with which it probes for worms and insects. The jack snipe (*G. gallinula*) is smaller.



Snake's Head. Flowers of white and speckled varieties

Snipe shooting is carried on in Norfolk and the E. counties, in the W. of Ireland, and in Egypt. Requiring great skill in judging distance and pace, it is regarded as one of the most difficult forms of shooting.

SNOOKER POOL. Game played on a billiard table, a combination of pyramids and ordinary pool. The 15 pyramid balls are set up as for that game, and the pool or different coloured balls are placed according to a definite arrangement. A player first plays on one of the pyramid balls, and should he succeed in potting it, then plays at either of the coloured, or pool, balls he may select. See Billiards; Pyramids.

SNOW. Six-rayed crystals of water vapour formed in the atmosphere directly without the intermediate liquefaction of the vapour. A snow flake comprises many matted or clotted crystals, usually broken or deformed in the conglomeration. Snow is one form of aqueous precipitation from the air, and it is customary to compute a foot of snow as equal to an inch of rain.

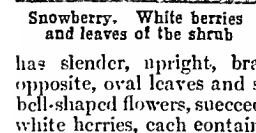
The period during which snow lies increases with an increase of latitude, or of elevation, until the permanently snow-covered area is reached. Above the limit of permanent snow—the snow line—lie the snow fields, from which consolidated snow forms glaciers, wherein the snow crystals have been arranged to make granular ice crystals. See Glacier; Rain.

SNOW BLINDNESS. Painful affection of the eyes associated with some dimness of vision.



Snow. Example of a snow-crystal

It results from the glare of sunlight reflected from a large expanse of snow. The symptoms usually pass off in a few days. See Eye.



SNOWBERRY (*Symphoricarpos racemosus*). Shrub of the order Caprifoliaceae, native of N. America. It has slender, upright, branching stems with opposite, oval leaves and spikes of small pink, bell-shaped flowers, succeeded by large, opaque, white berries, each containing two seeds.

SNOW BUNTING (*Plectrophenax nivalis*). British song-bird, a winter visitor from N. Europe and Siberia. The plumage is black and white in the summer, mixed with reddish brown in the winter. It is usually found near the coasts, and feeds on seeds.

SNOWDEN, PHILIP (b. 1864). British politician. Born at Keighley, Yorks, he entered the civil service in 1886, but, retiring in 1893, devoted himself to political and journalistic work. A prominent member of the Independent Labour party, of which he was chairman, 1903-6 and 1917-19, he was M.P. for Blackburn, 1906-18, and for the Colne Valley division from 1922. Snowden made a reputation by his knowledge of financial matters, and in the Labour ministry of 1924 he was chancellor of the exchequer. He returned to that position in 1929.

Mrs. Snowden became prominent as a worker

for the causes of women's suffrage and temperance reform. She is a governor of the British Broadcasting Corporation.

SNOWDON (Welsh Eryri, eagle top). Mountain of Carnarvonshire, Wales. Situated 10 m. S.E. of Carnarvon, it is the highest mountain S. of the Tweed, with five distinct peaks, the loftiest, Y Wyddfa, attaining 3,560 ft. It gives name to the mountainous dist. of Snowdonia. The Snowdon railway runs from Llanberis. See Llanberis.

SNOWDROP (*Galanthus nivalis*). Bulbous perennial herb of the order Amaryllidaceae. It is a native of Europe and W. Asia. The small oval bulb produces two strap-shaped leaves, and a solitary white flower on a long stalk. The three white sepals are larger than the three notched petals.

SNOWDROP TREE (*Halesia carolina*). Small tree of the order Styracaceae, native of N. America. It has alternate, oval, lance-shaped leaves and snowy-white bell-shaped flowers in sprays.

SNOWY RIVER. River of Australia. It rises near Kosciusko in the Snowy Mts. in New South Wales, flows N.E., S.E., and then, in general, S., with a bend to the left to receive the McLaughlin and Delegete, to enter Victoria, and continues S. to Bass Strait.

SOANE, SIR JOHN (1753-1837). British architect. Born at Whitechurch, near Reading, Sept. 10, 1753, he was appointed architect to the Bank of England in 1788, and rebuilt that structure. Other extant works include the Dulwich College picture gallery, 1812, and restorations of colleges of both Oxford and Cambridge. He became A.R.A. in 1795, R.A. in 1802, professor of architecture in 1806, and was knighted in 1831. He died in his house in Lincoln's Inn Fields, Jan. 20, 1837.

After 1833 he devoted himself to extending the museum installed in his house in Lincoln's Inn Fields, and which he subsequently presented to the nation. The contents include various portraits of the founder, good examples of Hogarth, Reynolds, and other leading artists, rare books and MSS., Sheraton and Chippendale furniture.

SOAP. Detergent or cleansing substance produced by the action of caustic soda or caustic potash on animal or vegetable oils or fats. In the first century the ashes of wood were causticised by boiling with lime, and so formed a solution of caustic potash. This boiled with oils or fats produced a soft soap, i.e. a potash soap, which was then boiled with salt to convert it into a hard soap, i.e. a soda soap. The modern developments of the

industry began after solid caustic soda became an important article of commerce in 1850, and the abolition of the taxes on soap and its raw materials in 1853.

In the cold process for hard soaps, melted coconut oil is stirred with a solution of caustic soda in exactly the right proportions; heat is developed by the reaction, which is allowed to go on for 24 hours. The soaps so made contain all the glycerin produced by the chemical reaction. Certain proportions of other oils may be mixed with the coconut oil. The hot process is applicable to any oils or fats by boiling them with caustic soda for hard soaps or caustic potash for soft soaps, but a little of the more expensive potash is mixed with the soda in making certain toilet soaps, and a little soda is added to stiffen soft soaps in summer time.

SOAP BERRY (*Sapindus saponaria*). Tree of the order Sapindaceae, native of tropical America. With alternate leaves and small greenish-white flowers, it has fleshy fruits containing hard, black, round seeds. These have been used as beads and buttons. The outer coverings, when soaked in water, make a lather, and are used as soap. The root has the same property in a lesser degree.

SOAPSTONE. In geology, the name of hydromagnesian tale. Blue-grey to green in colour, soft and heat-resisting, it is extensively used in electricity, etc. See Tale.

SOAPWORT OR FULLER'S HERB (*Saponaria officinalis*). Perennial herb of the order Caryophyllaceae. It has a creeping white rootstock and straight stems with oblong, lance-shaped leaves. The fragrant lilac or white flowers are in clusters. The leaves, bruised in water, produce a lather which may be used for washing purposes.

SOAR. River of England. It rises on the E. border of Warwickshire and flows 40 m. N.E. and N.W. to the Trent, about 11 m. S.E. of Derby. It passes through Leicestershire, forming part of the boundary with Nottinghamshire. It is navigable to Leicester.

SOBIESKI. Name of a famous Polish family. James Sobieski, a noble of Cracow, was the father of John Sobieski, who became king of Poland. John's grand-daughter, Maria Clementina, became the wife of the Old Pretender. See John, King of Poland.

SOCIALISM. Economic and political movement that aims at reforming society by substituting collective for individual action. The term covers a wide field of political and economic doctrines, and represents on the whole a tendency of thought rather than any defined programme of political or economic activity.

Its origins may be traced in the works of Saint-Simon (1760-1825), who taught a blend of ethics and economics which stimulated contemporary thinkers, and at the same time Fourier was evolving his theoretical community of phalansteries. In England, Robert Owen taught a creed from which later social reformers, cooperators, and trade unionists were to learn much. But with Karl Marx the socialist theory was transformed into the socialist movement. Marx analysed the evolution and workings of capitalism, demonstrated the necessity, almost the inevitability, of socialism, and practically founded all the internationalist side of its doctrine and organization.

In Great Britain Chartism and the Christian socialists such as Kingsley contributed something to the growth of the movement which took definite shape when the Social Democratic Federation was founded in 1881. The ideas of H. M. Hyndman and others connected with it were, however, too revolutionary for general acceptance, and much greater influence was exercised by the gentler but more permeating methods of the Fabian Society, to



Snowdon. The Welsh mountain from Llyn Llydaw



Snowdrop. Leaves and flowers



Snow Bunting. A winter visitor to Britain



Philip Snowden, British politician Russell

which, at one time or other, G. B. Shaw, H. G. Wells, J. Ramsay MacDonald, and Sidney Webb belonged.

Since 1900 the tendency has been for all political parties to introduce legislation which can be fairly called socialistic, so that when the Labour Party took office in 1924 and again in 1929 they merely continued, perhaps slightly accelerated, a tendency already in existence. The socialism of the Labour Party, as far as at least as the official element is concerned, has not a great deal in common with the doctrines of Karl Marx, and refuses to have anything to do with revolutionary methods. Its extremists, however, still press for measures for the speedy redistribution of wealth and the public control of banking and industry.

Consult *The Socialist Movement*, J. Ramsay MacDonald, 1911; *A Constitution for the Socialist Commonwealth of Great Britain*, S. and B. Webb, 1920; *A Survey of Socialism*, F. J. C. Hearnshaw, 1928; *The Intelligent Woman's Guide to Socialism*, G. B. Shaw, 1928.

SOCIETY ISLANDS. French archipelago in the South Seas. It includes Tahiti (q.v.). Its area is about 650 sq. m. Most of the islands are volcanic and fringed by coral reefs. Pop. about 14,000.

SOCIETY OF FRIENDS. Christian body, sometimes called the Quakers, found in England, Ireland, and the United States. It began its existence about the middle of the 17th century, as a revolt of mystical or spiritual Christianity against the ecclesiasticism and bibliolatry of the reformed Churches, both Anglican and Nonconformist. Their leader was George Fox, and of those who were convinced by him a number became preachers. Their aim was not to form a new sect, but to bring the whole Christian Church back from "the dark night of apostasy" into the light of truth. They met with fierce persecution.

In public worship the Friends discard all professional ministry and arranged services, except among the pastoral body in America, and meet in silent fellowship and waiting on God, giving freedom to any man or woman who is believed to be moved by the Spirit to preach or lead the company in vocal prayer. They do not practise the outward sacraments of Baptism and the Lord's Supper. They have a unique form of marriage, in which human priesthood finds no place, the man and woman simply taking one another in the presence of God and the congregation. They refuse to take judicial oaths, believing that anyone who walks in the Light will always and everywhere do his best to speak the truth. They refuse also to undertake military service. In church government every member, man or woman, has an equal voice.

The Society has 19,000 members and 393 meeting houses in Great Britain and 2,200 members and 25 meeting houses in Ireland. Its headquarters are at the Friends House, Euston Road, London, N.W.1, and its historic centre is Jordans (q.v.) in Buckinghamshire.

SOCINUS, FAUSTUS (1539-1604). Italian theologian, whose Italian name was Fansto Sozzini. Born at Siena, Dec. 5, 1539, he studied theology at Basel, and went in 1579 to Poland, where he vigorously promulgated his rationalistic and anti-Trinitarian views. He died March 3, 1604.

The sect called, after him, Socinian, rejects all Christian doctrines that cannot, in its view, be based on human reason, particularly those concerning the Person of Christ. It spread in Poland, where it was suppressed in 1648, and survives in Transylvania, where it numbers about 60,000 adherents.

SOCIOLOGY. Scientific study of human life in organized communities. In 1839 Auguste Comte coined the word to express the idea that the phenomena of social life are included within the unity of nature and are

subject to inevitable natural laws. Man being essentially a social animal, the social sciences cover almost all phases of human activity and interest, e.g. economics, the comparative study of property, law and justice, criminology, and penology. All may, however, be grouped under three heads: (1) anthropology; (2) social psychology; (3) social institutions.

Social psychology seeks to discover in the individual human mind the forces which account for the origin and cohesion of social life. The old idea of Hobbes and his successors, that social life sprang from reasoned choice, has long been abandoned, and is being replaced by conceptions based upon the obvious analogy between the social behaviour of men and certain animals.

SOCRATES (c. 470-399 B.C.). Greek philosopher. Son of Sophroniscus and Phænaretê, he was born about 470 B.C. and is said to have learnt the hereditary craft of a sculptor. He married Xanthippê, by whom he had three sons: according to Xenophon she was a shrew. Our knowledge of Socrates is almost wholly derived from the dialogues of Plato. He was thickset and ugly in countenance, with a snub nose and prominent, piercing eyes; his portrait is preserved in many busts.



Socrates.
Greek philosopher
British Museum

Socrates rapidly became a man of note in Athenian society. About 435 B.C. his friend Chaerephon asked the Delphic oracle whether any man was wiser than he, and received a negative answer. Socrates interpreted this to mean that he alone was conscious of his own ignorance, and that his mission was to convince others of the same truth about themselves; and this mission he pursued until the close of his life, seeking opportunities of discussion, especially with the young, and exposing the inner contradiction of popular ideas, particularly in morals and politics, by the method of question and answer. In 432 B.C. the war with Sparta broke out, in which Socrates served with distinction.

In 399 B.C., after the restoration of democracy, he was prosecuted for corrupting youth and introducing new divinities in place of those recognized by the state. The real ground of the prosecution was doubtless political; Socrates was held responsible for the anti-democratic careers of such men as Alcibiades and Critias, who had been members of his circle. The death penalty was only voted by 280 to 220. A month later he drank the hemlock in prison, having refused the offers of his friends to contrive his escape. His last hours were spent in discussing the immortality of the soul with a group of disciples; their talk is recorded by Plato, one of the younger members of the school, in the *Phaedo*. See *Plato*.

SODA. Popular name for sodium carbonate or washing soda, also known as soda-ash. In such expressions as baking soda, sodium bicarbonate is meant, which is more suitable for use in baking powder on account of the larger yield of carbonic acid gas which it gives on contact with acid. See *Sodium*.

A soda lake is a natural sink in which the drainings of alkali plains have collected. They form important sources of soda. Examples are Mono Lake and Owens Lake, in the U.S.A. See *Alkali*; *Magadi*.

SODA WATER. Aerated water charged with carbonic acid gas. The gas is forced into the water under pressure, and the liquid mechanically bottled and corked.

SODALITE. In mineralogy, name given to a group of calcium aluminium silicates. They include sodalite, hauynite, noselite, and lazurite, and are constituents of certain igneous rocks. They are found in limestones. In Norway, the Urals, and various localities in N. America, sodalite occurs in large sky-blue masses, in Rajputana in a pink variety.

SODDY, FREDERICK (b. 1877). British scientist. Born at Eastbourne, Sept. 2, 1877, he was educated there, at Aberystwith and at Merton College, Oxford. In 1902 he went to Montreal as demonstrator in chemistry at McGill university and there began his association with Sir E. Rutherford, whom he assisted in his researches on the properties of radium. From 1904-14 he was lecturer at Glasgow and from 1914-19 professor at Aberdeen. In 1919, having been a F.R.S. since 1910, Soddy was made professor of chemistry at Oxford, and received the Nobel prize for chemistry in 1921 for his work on isotopes.

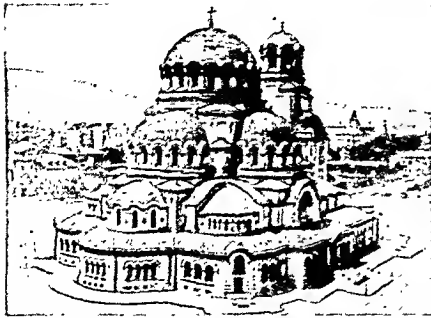
SODIUM. One of the metallic elements. Its chemical symbol is Na, atomic weight 23, atomic number 11. It is not found in the metallic state, but in the form of compounds. When separated the metal has a silver white lustre, and exhibits most of the properties characteristic of metals generally. It differs, however, in being soft, in being lighter than water (sp. gr. .9724), in melting very easily (at 97°C.), and especially in reacting with water to form caustic soda, hydrogen being released and then bursting into flame.

Most sodium compounds are colourless and readily soluble in water. They impart a yellow colour to the blow-pipe flame. Sodium bromide and sodium iodide are used in medicine. Sodium hydroxide or caustic soda is very soluble in water, forming a highly caustic solution, capable of destroying most animal and vegetable material. The solution attacks oils and fats to form soap (q.v.), in the manufacture of which caustic soda is chiefly used. Sodium carbonate, or washing soda, is manufactured by the Leblanc and the ammonia-soda processes, and is one of the chief products of the alkali industry. Sodium bicarbonate is used in medicine, in the manufacture of baking powder, seidlitz powders, etc. In the Leblanc process of soda manufacture anhydrous sodium sulphate, in the form of salt cake, is obtained. This, on dissolving in water and crystallising, yields Glauber's salt.

SODOM. City of Palestine, near the Dead Sea. One of the so-called cities of the plain, it is associated with Gomorrah as a place of unusual wickedness. After Lot had been warned to leave, the cities were destroyed by fire and brimstone (Gen. 19). The exact site is unknown. See *Dead Sea*.

SODOR AND MAN. Name of a diocese of the Church of England, now confined to the Isle of Man. The diocese of Sodor was formed in 1154, and comprised the Isle of Man and numerous islands off the W. coast of Scotland, then belonging to Norway. It was part of the province of Trondhjem. After Norway lost her Scottish possessions in 1266 the name Sodor was retained for the diocese, which in 1334 was limited to Man, the cathedral being on St. Patrick's Isle near Peel. For some purposes the diocese is in the province of York. The bishop does not sit in the House of Lords.

SOFIA. Capital of Bulgaria. Situated on a plain at the foot of the Rhodope Mts., within a basin traversed by the river Isker, it is an important station on the Orient Express route across Europe to the Bosphorus, and is distant by rail 407 m. N.W. of Constantinople, 100 m. S.E. of Nish, and 284 m. S.W. of Bukarest. The chief buildings are the palace, the government buildings, the cathedral of S. Alexander, and the university. Sofia has a considerable general trade. It is the seat of a Greek metropolitan. Pop. 213,002. See *illus. p. 1259*.



Sofia. Alexander Nevski Chrch. It is built on an island site and has eight entrances. See p. 1258

SOFT GRASS (*Holcus*) Small genus of grasses of the natural order Gramineae. *Holcus lanatus*, known in Britain as Yorkshire fog, is a tufted, downy, perennial meadow grass, with leafy stems and flat, soft leaves. *Holcus mollis* has a creeping root-stock, and the plant is more slender. It grows in woods and waste places. The grass is of little economic value.

SOHAM. Market town of Cambridgeshire. It is 5 m. from Ely, on the L.N.E. Rly. S. Andrew's church dates in part from the 12th century and has a Perpendicular tower. Soham is the centre of a fruit-growing district Market-day, Mon. Pop. 4,737

SOHO. District of W. London. It lies within the area bounded by Oxford Street, Charing Cross Road, Shaftesbury Avenue, and Regent Street, and also in the S.W. corner of Tottenham Court Road. It is notable for its foreign colony and foreign restaurants, and is the centre of the film industry in London. S. Anne's, in Wardour Street, is famous for its musical services. Soho is a district of Birmingham.

SOIL. Surface layer of earth which supplies the food (except that derived from air) necessary for the growth of plants.

Soils are made up of (1) mineral matter, i.e. sand, clay, and carbonate of lime; (2) organic matter (humus), resulting from the decay of plant and animal material. Sandy soil contains up to 5 p.c. of clay. It is a sandy loam with an increase of clay (up to 10 p.c.), a loam with a further increase (up to 20 p.c.), and a clay loam when the clay is in still larger proportion (up to 30 p.c.). Beyond 30 p.c. (up to 40 p.c.) gives a clay soil, and with over 40 p.c. we get a strong and heavy clay. Addition of from 5 to 20 p.c. of carbonate of lime produces a marl, while over 20 p.c. is called calcareous soil.

SOISSONS. Town of France. It stands on the Aisne, 65 m. N.E. of Paris. The Romanesque-Gothic cathedral, founded in the 12th century, was seriously damaged in the Great War, as were also the remains of the great castellated abbey of S. Jean des Vignes. In the Great War it changed hands several times, the Germans being finally driven out by the French on Aug. 2, 1918. In July, 1928, a memorial to missing soldiers was unveiled here. Pop. 17,311. See Aisne; Marne.

SOKOL (Czech, falcon). Czech patriotic and gymnastic organization. It was established in 1862 by Miroslav Tyrsh (1832-84) and Jiudrich Fügner (1822-65), and is democratic and fraternal. The special Sokol dress is a loose fawn jacket, often worn hussar-wise over a red shirt, and a round fawn cap bearing a Sokol feather.

SOKOTRA OR **SOCOTRA.** Island of the Indian Ocean. It has been a British protectorate since 1876, and is administered from Aden. It is situated 135 m. E.N.E. of Cape Guardafui, in the Arabian Sea at the entrance to the gulf of Aden. The area is 1,382 sq. m. Pop. 12,000. See Africa, map.

Solan Goose. Alternative name for the gannet (*Sula bassana*). See Gannet.

SOLAR PLEXUS. Network of nerves situated in the abdomen behind the stomach. A blow on the pit of the stomach is the so-called solar plexus blow, which temporarily paralyses the sensitive network of nerves.

SOLAR SYSTEM. Assemblage of bodies controlled by the attraction of the sun. It includes the planets and their satellites, asteroids, comets, and meteor swarms. All the planets move round the sun in the same direction, as do the asteroids and the majority of the satellites. Comets move in either direction round the sun. The origin of the solar system is generally accounted for by the nebular hypothesis. See Astronomy; Nebula; Planet; Sun.

SOLE (*Solea vulgaris*). Flat fish. One of the important food fishes, it is usually about a foot long, and is dark brown on the right or upper side, with greyish white beneath. For firmness of flesh and delicacy of flavour it is regarded as one of the choicest of marine fish. It is often called the Dover sole, to distinguish it from the inferior Limande or lemon sole. It is taken in the trawl, and is found on sandy shores ranging from the Mediterranean to the N. of Denmark.

SOLENOID. Helical coil of insulated wire through which an electric current is passed. If a bar of iron be inserted within the coil, it is magnetised by the current. Important applications of the solenoid are in the construction of magnetic brakes, known as solenoid brakes, and in electro-magnets for lifting loads. See Magnetism.

SOLENT. Western end of the channel separating the Isle of Wight from Hampshire. Extending from W. Cowes to The Needles, it is 17 m. long and varies in breadth from 2 m. to 4 m. It is a favourite yachting centre. See Hurst Castle.

SOLFERINO. Village of Italy. It is 73 m. W. of Milan, on the hill bordering the S. shore of Lake Garda. Pop. 1,657.

The battle of Solferino was fought on June 24, 1859, between the French and Italians on one side and the Austrians on the other. An Austrian army of 140,000 men had taken up its position round Solferino. The attack on the place was brilliantly executed by the French, who gradually overcame the resistance of the Austrians, who finally retreated. The French losses were 12,000; the Austrian, from 20,000 to 25,000.

SOLICITOR (Lat. *sollicitare*, to ask earnestly). Term used in England and Ireland for a member of the lower branch of the legal profession. Professionally a solicitor is an officer of the supreme court.

Solicitors may be advocates in coroners', police, and county courts, and sometimes at quarter sessions. In Ireland a solicitor may appear at assizes. In England the Incorporated Law Society is the registrar of solicitors, prescribes and conducts their examinations, and exercises discipline over them, subject to the right of appeal to the high court.

A solicitor who has once undertaken a lawsuit cannot drop it so long as the client demands that he shall go on and supplies him with funds for the purpose. See Barrister.

SOLICITOR-GENERAL. In England, one of the law officers of the crown. He ranks second to the attorney-general, and the duties of the two are to advise the various departments of the government on legal matters. He is usually a member of parliament, but not of the cabinet, and must be a barrister of standing; his salary is £6,000 a year and fees. There is a Solicitor-general for Scotland.

SOLIDUS. Roman gold coin. It was struck to replace the aureus, and was a

standard in the Eastern Empire till 1453. The solidus was used in Great Britain till the 7th century, and was adopted by the Franks until the time of Pepin. The silver solidus was valued at one-twentieth of a libra and was worth twelve denarii.

SOLIHULL. Town of Warwickshire. It is 6 m. from Birmingham, with a station on the G.W. Rly. The church is an Early English and Perpendicular building restored. Solihull Hall dates from the 14th century, and there is a town hall. Pop. 11,552.

SOLLUM. Gulf and small port in the extreme W. of Egypt. The approach by land is along the coast, via Matruh, to which point a rly. has been constructed from Alexandria. The port is of considerable political importance in connexion with the control of the Senussi of the interior. During the Great War Sollum was occupied by the Senussi, but was reoccupied by the British, who used it as their principal base against the Senussi (q.v.).

SOLO OR **SOLO WHIST.** Popular card game. It is a development of whist (q.v.). The principal divergence from the parent game is that each player plays independently, except in one call. There are four players, and the cards hold the same values as in whist. There are six calls and the call rests with the player calling the highest.

SOLOMON (d. c. 937

B.C.). Third king of Israel. He was a younger son of David, by his wife Bathsheba. Solomon waged few wars, but consolidated his power by alliances, marrying a daughter of Pharaoh, perhaps the last of the Tanite dynasty, a daughter of Hiram, king of Tyre, and other foreign princesses.

His relations with Phoenicia and Egypt enabled him to share in the traffic with Ophir and other distant countries, and he accumulated wealth which made his reign proverbial for splendour. For his great buildings at Jerusalem Solomon employed forced labour.

He was renowned for his wisdom both as a judge and an author of songs and proverbs, as well as of discourses on plants and animals, but although parts of the collection known as Proverbs may be his, the other extant works attributed to him, viz. Canticles, Ecclesiastes, Wisdom, and the Psalms of Solomon, were composed in later ages.

SOLOMON, SOLOMON JOSEPH (1860-1927). British artist. Born in London, Sept. 16, 1860, he studied at Heatberley's and the R.A. schools, and in Munich and Paris. A vigorous painter of historical subjects and portraits, he was elected A.R.A. in 1896, R.A. in 1908, and became president of the Royal Society of British Artists, 1918. He died July 27, 1927.

SOLOMON ISLANDS. British archipelago in the South Seas. The group is about 120 m. E. of the Bismarck Archipelago, and has an area of 14,800 sq. m. The chief islands are Bougainville, Choiseul, New Georgia, and Ysabel. In 1885 the group was divided between Germany and Britain; in 1899 Choiseul, Ysabel, and some islets were transferred by Germany to Britain; and in 1914 Bougainville and the remaining German islands were seized by an Australian force. Since the treaty of Versailles these last have been administered by Australia under mandate from the League of Nations as part of the territory of New Guinea. The rest of the group form the Solomon Islands Protectorate. Pop. about 200,000.

SOLOMON'S SEAL (*Polygonatum multiflorum*). Perennial herb of the order Liliaceae. A native of Europe and N. Asia, it has a thick,



Sole. Marine flat fish, esteemed for the table. See above



Solomon's seal. Spray of leaves and flowers

branched, creeping root-stock and leafy arching stems. The large oblong leaves form two rows, and the greenish-white, tubular, bell-shaped flowers hang from the lower side of the arch. The flowers are succeeded by small blue-black berries.

SOLON (c. 638-c. 558 B.C.). Athenian statesman and law giver. Of noble birth, he attained such eminence as a gnomic poet that he was accounted one of the Seven Sages. As Athens was suffering great distress from an economic and political crisis, Solon was elected archon in 594, with full power to amend the laws. By his disburdening ordinance he cancelled existing debts, forbade enslavement for debt, and limited the rate of interest. Repealing most of Draco's legislation, he gave Athens a new constitution. To obliterate clan divisions and feuds, the citizens were divided into four classes, according to their wealth. Soon after the overthrow of his constitution by Peisistratus, Solon died.

SOLUTION. In chemistry, name given to certain types of mixtures of two or more substances. These substances may be solid, liquid, or gaseous, and the mixture so formed is homogeneous. The commonest forms of solutions are liquid. Liquids mix according to no well-defined law, but the mixing is important, as upon it depend fractional distillation processes. As a general rule, solids dissolve in liquids at a rate depending upon the temperature, but the rule has a number of notable exceptions, e.g. solubility actually decreases with increase of temperature. A solid dissolves out from a saturated solution on cooling, as a rule, and generally in the form of crystals. Solid solutions are of two kinds, the solution of gases in solids and the solution of solids in solids. See Chemistry; Osmosis

SOLWAY FIRTH. Arm of the Irish Sea. It separates the Scottish counties of Kirkcubright and Dumfries from the English county of Cumberland, extends inland for 38 m., and has a breadth varying from 22 m. to $1\frac{1}{2}$ m., where the Esk flows into it. Besides the Esk it receives the waters of the Annan, Dee, and Nith on the Scottish side, and the Derwent, Eden, and Ellen on the English.

SOLYMAN OR **SULEIMAN**, THE MAGNIFICENT (c. 1495-1566). Sultan of Turkey. Son of Selim I, on ascending the throne in 1520 he crushed rebellions in Syria and Egypt, and then began a series of campaigns against the Western powers. At the battle of Mohacs, August 29, 1526, he dealt a crushing blow to the Christian armies of Louis II. He failed in 1532 to take Vienna, but still held Hungary, and in alliance with Francis I of France ravaged the Mediterranean coasts. He was completely under the influence of Roxalana, the beautiful Russian slave whom he had freed and married. Solyman died Sept. 4, 1566.

SOMALI. People of Hamitic stock, forming the main population of the E. horn of Africa. Numbering under 1,000,000—approximately one-third each in British, Italian, and Abyssinian Somaliland—there are outlying sub-tribes in French Somaliland, and scattered offshoots down to the Tana river in Kenya Colony. The purest type are a stalwart, lithe, dark people.

SOMALILAND. District of N.E. Africa. British Somaliland embraces the hinterland of that portion of the Somali coast on the Gulf of Aden between Loya Ada and Bender Ziade, and has been administered by the colonial office since 1905. It lies between French and Italian Somaliland and adjoins Abyssinia on the S. Only the coast strip, where are Berbera, Zeila, and Bulhar, the chief towns, is effectively occupied. Its area is 68,000 sq. m. Pop. 344,700.

The colony of French Somaliland adjoins Eritrea near the strait of Bab-el-Mandeb, has an inland frontier with Abyssinia, a coastline on the gulf of Aden, and adjoins British Somaliland on the E. France obtained Oboek in 1862, further territory in 1884, created Jibuti, the capital and seaport, in 1888, and has since developed rly connexions with Abyssinia from Jibuti, which does a great transit trade for Abyssinia. Its area is 5,790 sq. m. Pop. 85,778.

The colony of Italian Somaliland extends from the horn of Africa as far as the frontier of Kenya Colony, with a coastline on the Indian Ocean; the inland boundary is with British Somaliland, Abyssinia, and Kenya. Since the Great War the former S.W. boundary has been carried beyond the Juba, so that Italy controls the Juba valley and the port of Kismayu. Southern Somalia comprises the former colony of Benadir and Jubaland. N. of it in order are the territories of Obbia, of the Nugal and of the Mijertins, comprising Northern Somalia. The capital is Mogadishu (Mogadiso). Its area is about 190,000 sq. m. and its population 1,200,000. See Africa; Benadir.

SOMERS, JOHN SOMERS, BARON (1651-1716). English statesman. Born at Claines, near Worcester, March 4, 1651, he entered the Middle Temple, 1669. An expert in civil law, he was one of the counsel for the Seven Bishops, his powerful pleading and wide learning practically deciding the case. In the Parliament of 1688 he took an important part in framing the Declaration of Right. William III's most trusted minister, Somers was appointed lord keeper, 1693, and lord chancellor, 1697, when he was made Baron Somers of Evesham. Anne was hostile to him, but under George I he was a member of the privy council. He died April 26, 1716.

SOMERSBY. Village of Lincolnshire, 6 m. from Horncastle. In the church is a memorial to Alfred Tennyson, who was born here, his father having been the rector. See Tennyson, Baron.

SOMERSET. County of England. In the S.W. of the country, its area is 1,621 sq. m. It has a long coastline on the estuary of the Severn and the Bristol Channel. The surface alternates between ranges of hills, valleys, moorland, and marsh. The hills include the Mendips in the N.E., and the Quantocks and Brendons in the W. Dunkery Beacon on Exmoor is 1,707 ft. high. The chief rivers are the Avon and Parret; others are

the Axe, Tone, Brue, Yeo, and Cary. Somerset is on the whole fertile, especially the vale of Taunton. Wheat, barley, and oats are grown, and there are extensive orchards of cider apples. Sheep and cattle are reared, and there are many dairy farms. There is a coalfield in the Mendips, Radstock being its centre. The rlys. are the Southern and the G.W.

Taunton is the county town, others including Bath, Bridgwater, Wells, Yeovil, and Chard. Places of interest include Cheddar, Sedgemoor, and part of Exmoor; Weston-super-Mare and Minehead are watering places; Watchet and Porlock are small seaports; Glastonbury and Athelney are associated with the early history of England. The county is almost wholly in the diocese of Bath and Wells. Pop. 465,710.

SOMERSET, DUKE OF. English title held by the families of Beaufort and Seymour. In 1397 Richard II granted the earldom of Somerset to his kinsman, John Beaufort. John's son, John (d. 1444), was made duke in 1443, as was another son, Edmund, in 1448. He was killed at St. Albans, May 23, 1455.

In 1547 Edward Seymour was made duke of Somerset. He was attendant on Henry VIII and Wolsey, and in 1537 was made earl of Hertford, his sister Jane having married the king. In charge of the forces sent to Scotland in 1544, he took Edinburgh. In 1547, on the accession of Edward VI, he was chosen protector and made duke of Somerset, and for two years governed England. His fall was secured by his rival, Northumberland, and he was tried for treason and executed Jan. 22, 1552. The title then passed into abeyance, being restored in the person of his grandson, William Seymour, in 1660. He was succeeded by his grandson, on whose death without heirs in 1671 it fell to John Seymour, the 2nd duke's youngest son.

SOMERSET, LADY HENRY (1851-1921). British philanthropist. The daughter of the last Earl Somers, she married, in 1873, Lord Henry Somerset, a son of the 8th duke of Beaufort. About 1890 she became an active worker for temperance and kindred causes. She set up at Duxhurst, Surrey, an industrial colony for inebriate women, and a babies' home. She died Mar. 12, 1921.



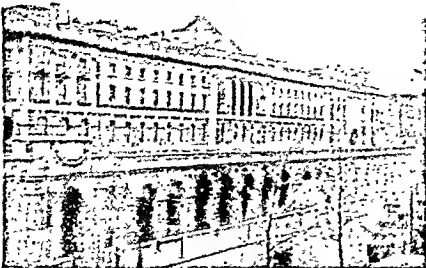
Duke of Somerset, English statesman. After Holbein



Lady Henry Somerset, British philanthropist



Somerset. Map of the English county, famous for its historical associations



Somerset House, London. The river front of the government buildings, from Waterloo Bridge

SOMERSET HOUSE. British government building. Erected on the site of the palace built, 1549–52, by the lord protector Somerset, it stands between the Strand, London, W.C., and the Victoria Embankment, and was built, 1776–86, by Sir William Chambers, the E. wing being added by Sir Robert Smirke, 1829–34, and the W. wing, 1854, by Sir James Pennethorne. Apart from the E. wing, occupied by King's College (q.v.), the structure houses the audit, registrar-general's, inland revenue, wills and probate, and other government offices. Wills proved prior to 1700 may be seen free, those of later date on payment of 1s.

SOMERSET LIGHT INFANTRY (PRINCE ALBERT'S). Regiment of the British army. Formerly the 13th Foot, it was raised in 1685, and consisted of pikemen and musketeers, who served in Holland in 1701–3. In 1704 and 1727 it assisted at the defence of Gibraltar.

The regiment served with Abercromby in Egypt, 1801, in the West Indies, 1809–10, in the Burmese War, 1824–26, and in the Afghan War of 1839–42. Further campaigns include the Crimean War, the Indian Mutiny, the Zulu War, 1878–79, the Burmese War, 1885–87, and the South African War. In the Great War the Somersets were in practically all the battles of 1914–18. The regimental depot is Taunton.

SOMERS TOWN. District of N.W. London. Part of the met. bor. of St. Pancras (q.v.), it was built in the latter part of the 18th century, and was named after the Somers family, who then owned the freehold. Part of the area is covered by the yards of the L.M.S. Rly.

SOMERVILLE, EDITH OENONE. Irish novelist and artist. She studied art in Paris and London, and became widely known as collaborator with her cousin, "Martin Ross," in a succession of humorous novels of Irish country society and foxbunting, some of which she illustrated with the same high spirit shown in the collaborators' writing. Their joint works include *Some Irish Experiences* of an Irish R.M., 1899; *Some Irish Yesterdays*, 1906; *Further Experiences of an Irish R.M.*, 1908; *Dan Russel, the Fox*, 1911; *In Mr. Knox's Country*, 1915.

SOMERVILLE COLLEGE. Women's college at Oxford. It was founded in 1879 as Somerville Hall, in memory of Mary Somerville (1780–1872), a writer on science. In that year a building was opened, with residential accommodation, to the W. of the Woodstock Road, adjoining the Radcliffe Infirmary. The hall was enlarged several times, and in 1894, on the occasion of the opening of a new wing, its name was changed to Somerville College. A library and other buildings, designed by Basil Champneys, were opened in 1904.

SOMME. River and dept. of France. The river rises near St. Quentin, and flows to the

English Channel near St. Valéry. Towns on its banks are Péronne, Corbie, Amiens, and Abbeville. Partly canalised, it is connected with the Oise and Schelde by the Somme Canal. Its length is 150 m.

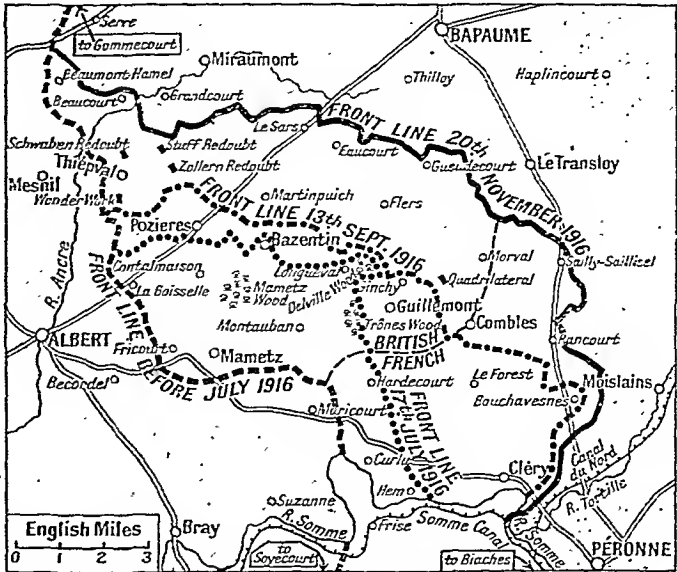
The dept. of Somme is bounded W. by the English Channel, lies adjacent to the depts. of Pas-de-Calais, Nord, Aisne, Oise, and Seine-Inférieure, and is formed of the old prov. of Picardy and part of Artois. Amiens is the capital. Its area is 2,443 sq. m. Pop. 473,916.

BATTLES OF THE SOMME. These were two important offensives in the Great War, July 1–Nov. 20, 1916, and Mar. 21–April 6, 1918. The first, undertaken by the British to relieve the German pressure on Verdun, resolved itself into a series of assaults on fortified villages, each of great strength. At 7.30 a.m. on July 1, 1916, the Allies advanced to the assault, the British enveloping Fricourt, Mametz and Montauban, while the French reached Hardecourt and Curlu. Next day Fricourt fell, and by the 5th the British had secured La Boisselle and reached Contalmaison. The German first line was now in British hands between La Boisselle and Hardecourt, while the French took Bieches. Then came desperate struggles, ending in the capture of Mametz and Trônes woods and Contalmaison.

The next phases of the battle were the assault on the second German line, July 14, the struggle for Delville Wood, and the great German counter-attack on July 18. The wood was completely cleared by the British, with the whole of Longueval, by the end of July, but the attack on Guillemont failed. The fighting throughout the month was of a terrible character, so strongly defended were the German positions, and the British casualties totalled 180,000. During Aug. a combined British and French attack on Guillemont was made, and the French reached the outskirts of Cléry and Péronne.

The closing stages of the battle were the British assault from Beaumont-Hamel to Guillemont on Sept. 3, the great Allied attack on Sept. 15, and that on Sept. 25 on a front from Martinpuich to the Somme. The second attack is notable, as for the first time in the war tanks were employed by the British. In the third attack Thiéval, Gueudecourt, Morval, and Combles were taken, also two of the strongest German works, Stuff and Zollern redoubts. Eaucourt was captured on Oct. 3 and Le Sars stormed on the 7th. German counter-attacks were numerous, but were beaten off with heavy loss. The subsequent Allied operations for the capture of the German positions on the Ancre are described under the article Ancre. The total British loss, including the Ancre battle, was 22,923 officers and 476,553 men.

The second battle of the Somme was the first act of Ludendorff's powerful offensive of the spring of 1918. Owing to the collapse of Russia, the Germans were able to remove all their good troops to France, their forces totalling on the W. front 1½ million men and 16,000 guns. The attack opened on Mar. 21 at



Somme. Map of the Allied advances during the first battle of the Somme, 1916. Much of this area was lost in the second battle

the weakest part of the Allied front, between Cambrai and the Oise, held by Gough's 5th army. On the first day the Germans broke through at St. Quentin, forcing back Gough's army, leading to Allied retirements elsewhere. By Mar. 30 the Germans had driven a great salient into the Allied front, capturing Bapaume, Noyon, Montdidier, Albert, and other important centres, and carrying their line to within a few miles of Amiens. See Albert; Bapaume; Foch; Gough; St. Quentin.

SONATA (Ital. sonare, to sound). Musical composition. Originally applied to an instrumental piece only, the term eventually designated a composition comprising several related movements, played by one or two performers. The sonata was the result of a desire to break away from the dance forms of the suite, and the two continued on separate lines.

SONG THRUSH or **MAVIS** (*Turdus musicus*). British song-bird. It is common in most districts, except the N. of Scotland, and is to be found all the year round, though the majority of the birds migrate in autumn. It is smaller than the mistle thrush (q.v.), which it resembles. It feeds mainly upon worms, snails, and insects. See Thrush.



Song Thrush or Mavis, a common British bird
W. S. Berridge, F.Z.S.

SONNET (Ital. sonetto, a little sound). Form of elegiac verse. Invented in Italy in the 13th century, and perfected by Dante and Petrarch, the regular or Petrarchan sonnet consists of 14 iambic lines of 10 or 11 syllables, the first eight, or octave, generally devoted to the exposition of the theme, having the rhyme-scheme abbaabba, and the last six, or sestet, containing the application of the idea, with two or three rhymes variously arranged, a closing couplet being avoided. The greatest modern English sonnet writers were Wordsworth, E. B. Browning and D. G. Rossetti.

SONNINO, BARON SIDNEY (1847–1922). Italian statesman. Born at Pisa, March 11, 1847, he joined the diplomatic service, and served in Madrid, Paris, and Vienna. He entered parliament in 1877 as a liberal.

conservative, and was under-secretary for finance in the Crispi cabinets, 1887-90 and 1893-96. Afterwards he became minister of the treasury, and saved Italian credit by his drastic reforms. He was premier in 1906 and again in 1909-10. From 1914-19 he was successful as foreign minister, and was one of Italy's representatives at the Peace conference in Paris in 1919. Sonnino died Nov. 24, 1922.

Soo Canal. Popular variant of the Sault Sainte Marie (q.v.) ship canals of N. America.

SOPHIA (1630-1714). Electress of Hanover. The twelfth child of the Elector Palatine and his wife Elizabeth, daughter of James I, she was born at The Hague, Oct. 14, 1630. She married in 1658



Sophia,
Electress of Hanover
After G. Honthorst

Ernest Augustus, a duke of Brunswick, who, in 1692, became elector of Hanover. Neither William III nor Anne, who would succeed him, had any children, and Parliament settled the crown on Sophia and her heirs, being Protestant. She died June 8, 1714, only a few weeks before Anne.

George I (q.v.), who became king of Great Britain on Aug. 1, 1714, was the eldest son of her large family.

Another Sophia was Sophia Dorothea (1666-1726), the wife of George I and the mother of George II. In 1694 she was divorced, and she passed the rest of her days in retirement.

SOPHISTER (Gr. sophos, wise). At Trinity College, Cambridge, junior sophs and senior sophs are undergraduates in their second and third year respectively. At Trinity College, Dublin, the grades are known as junior and senior freshmen and junior and senior sophisters, according to the length of residence in college in each case.

SOPHISTS (Gr. sophistēs, wise man). Class of teachers in Greece, first prominent in the fifth century B.C. They were the representatives of an intellectual movement reflecting the altered social, political, and religious conditions of Greek life. The earliest sophists were Protagoras of Abdera, the first to ask a fee for teaching, and Gorgias of Leontini. Later sophists, as Critias the tyrant, who described religion as the invention of politicians, were advanced freethinkers. Later generations of sophists, by their greed of money and their attacks on family life and all social, religious, and political institutions, drew upon themselves the odium of the public. They were the first to pay attention to style, rhythm, and rhetoric as an art.

SOPHOCLES (495-405 B.C.). Athenian tragic dramatist. Born at Colonus, near Athens, Sophocles received the usual education of an Athenian gentleman. At the age of 15 he was chosen for his grace and beauty to lead the chorus which sang the song of triumph in celebration of the victory over the Persians off Salamis in 480 B.C. He won his first prize for tragedy in 468. For the rest of his long life he was chief favourite on the Athenian stage, winning the first prize 20 times.

Sophocles wrote about 130 plays, but only seven are extant. These were probably produced in the following order: Antigone, Electra, Trachiniae, Oedipus Tyrannus, Ajax, Philoctetes, Oedipus Coloneus, the best known being the first, fourth, and seventh, which deal with the hereditary curse on the house of Oedipus (q.v.). His plays, typical of the Greek spirit in the age of Pericles, are marvels of harmony, proportion, and restraint.



Sophocles,
Athenian dramatist
Lateran Mus., Rome

By introducing a third actor and diminishing the rôle of the chorus, Sophocles was a great reformer of dramatic technique.

SOPWITH, THOMAS OCTAVE MURDOCH (b. 1888). British airman and inventor. In 1910 he won the Baron de Forest £4,000 prize for a flight from England to the Continent, and in the following year he founded the Sopwith Aviation and Engineering Co., Ltd., at Kingston-on-Thames, to design and build aeroplanes and seaplanes. Sopwith was made C.B.E. in 1918. See Aeroplane.

SORATA OR NEVADO DE SORATA. Andean peak in Bolivia, S. America. It is 60 m. N.N.W. of La Paz and has two peaks, Ancohuma, 21,490 ft., and Illampu (q.v.), 21,275 ft.

SORBONNE. French centre of education. It was founded by Robert de Sorbonne in 1252 as a hostel for poor students of the university of Paris belonging to various nations.

Among the benefactors of the Sorbonne was Riobellien. In 1629 he erected new buildings, which remained in use until the vast reconstruction scheme of 1885 onwards.

The only part of the 17th century buildings now standing is the church, where the cardinal was buried. Restored by Napoleon in 1808, the Sorbonne since 1896 has been the university of Paris, and now houses the Faculté des Lettres and other departments. The New Sorbonne is housed in a magnificent range of buildings, with a frontage of 270 yards.



Sorbonne, Paris. Main facade of the college buildings

SORCERY

(Lat. sors, a lot). Originally a simple form of divination by casting lots, the term later came to signify the exercise of supernatural powers by a magician over spiritual agencies. Up to about the middle of the 18th century, sorcery in England was a crime punishable with death. See Divination; Magic; Witchcraft.

SORDELLO (13th century). Italian troubadour. He is supposed to have been born at Goito, near Mantua, and after some rather scandalous behaviour to have taken refuge, about 1230, at the court of Charles of Anjou, and to have died in Provence about forty years later. Several of his love songs and political poems have been preserved. There are several references to him in Dante's Purgatorio; and Robert Browning made Sordello the subject of one of his poems.

SOREL. Town of Quebec, Canada. It stands at the junction of the Richelieu with the St. Lawrence, 51 m. from Montreal. Sorrel is a calling place for steamers on the St. Lawrence. Pop. 8,174.

SORGHUM. Genus of grasses of the order Gramineae. They are natives of the warmer regions, with the flowers in panicles and each glume containing two flowers. The principal species is Indian millet (S. vulgare). There is a variety saccharatum of this species, from whose stems a syrupy sugar is obtained. S. halepense, with broad, white-ribbed leaves, is often cultivated for ornament.

SOROLLA Y BASTIDA, JOAQUIN (1863-1923). Spanish painter. Born at Valencia,

he studied art under F. Pradilla and in Paris. In 1900 he was awarded the Grand Prix of the Paris Salon, and soon came to be recognized as the foremost painter of Spain. A brilliant Impressionist, he produced an immense number of pictures, chiefly landscapes, marine pieces, and portraits. He died in Madrid. Aug. 10, 1923.

SORREL (Rumex).

Large genus of biennial and perennal herbs of the order Polygonaceae, including the Dock (q.v.). The two smallest of the British species are known as sorrels, and are weeds in every meadow and pasture. Their leaves are edible, have a pleasant acid flavour, and are used as a salad ingredient. Rumex acetosa grows 1-2 ft. high; R. acetosella, the sheep's sorrel, ranges from a few inches to about a foot in height.

SORREL TREE OR

SOURWOOD (Oxydendron arboreum). Tree of the order Ericaceae, native of N.E. America. It has oblong lanceolate leaves and clustered sprays of white flowers. The leaves have an acid taste.

SORRENTO. City of Italy. It is a tourist resort picturesquely situated on a promontory between the bays of Naples and Salerno, 16 m. S.S.E. of Naples and 10 m. by tramway W. of Castellammare. It contains ruins of Roman temples and a cathedral. Torquato Tasso, who was a native, is commemorated by a marble statue. Its wine is celebrated. Pop. 7,100.

SOTHEBY'S. London firm of auctioneers.

Founded by Samuel Baker, in York Street, Covent Garden, where its first auction was held Jan. 7, 1744, and carried on by his nephew, John Sotheby, the firm became known later as Sotheby, Wilkinson and Hodge. The rooms in Wellington Street, Strand, were given up May 25, 1917, and new premises opened on the site of the Doré Gallery in Bond Street. Consult Notes on History of Sotheby's, G. Hobson, 1917.

SOTHERN, EDWARD ASKEW (1826-81).

British actor. Born in Liverpool, April 1, 1826, he made no mark as an actor until the production of Tom Taylor's Our American Cousin at Laura Keane's Theatre, New York, May 12, 1858. In this he created the part of Lord Dundreary. On Nov. 11, 1861, he produced the comedy at the Haymarket Theatre, London, where it ran for 496 consecutive nights. Another great London success was his Garrick in T. W. Robertson's David Garrick, 1864. He died Jan. 21, 1881. His third son, George Evelyn Augustus Townley ("Sam"), 1870-1920, was for many years a popular London actor.

SOTHIS. Greek form of the ancient Egyptian name of Sirius, the dog-star. Its rising with the sun on July 20, when the Nile inundation began, gave it importance in the Egyptian calendar.

SOTO, HERNANDO OR FERNANDO DE (c. 1496-1542). Spanish explorer. In 1519 he joined an expedition to Darien, and in 1524 helped to conquer Nicaragua. In 1532 he brought reinforcements to Pizarro in Peru, where he took a prominent part in the conquest. He sailed on an expedition in search of gold in 1539, and for nearly four years explored the country between the Atlantic and the lower Mississippi, crossing that river in 1541, and reaching Arkansas. He died of fever in May or June, 1542.



Sorrel. Leaves, flowers, and stems of Rumex acetosa

Sou. French copper coin. The old sou was the twentieth part of a livre. The present sou is a five centime piece.

SOUCHEZ. Village and river of France. The former is about 4½ m. S.W. of Lens on the Béthune-Arras road, between the ridges of Vimy and Notre Dame de Lorette. The river is known as the Deûle in its lower reaches. The district was the centre of severe fighting May-July, 1915. The village was captured by the French in July, and its sugar refinery, after changing hands several times, was taken by the French early in June. Fierce fighting took place for its cemetery. The village has been adopted by the borough of Kensington, London.

SOUL. Mental principle regarded as a personal entity separate from the body, manifested in individual mental life. It was at first believed that the soul was material and perished with the body. Plato put forward the idea that it was immaterial, immortal, and tripartite, only temporarily connected with the body. Aristotle assumed three different kinds of soul—the nutrient (the vital principle of plants), the sentient (animal), and the thinking (man).

During the Middle Ages the Platonic and Aristotelian theories, modified in order to reconcile them with Christianity, were equally supported, until Aristotelian monism gave way to the dualism of Descartes. He held body and soul to be essentially different beings, whose combination in man was due to divine assistance. Locke assumed the soul to be a sheet of blank paper ready to receive sensations. Spinoza and some more modern thinkers regard the soul, not as an independent entity, but as a modification of the infinite, all-embracing cause of the world. See Metaphysics.

SOULT, NICOLAS JEAN DE DIEU, DUKE OF DALMATIA (1769-1851). French soldier. Born at St. Amans-la-Bastide, March 29, 1769, he



Marshal Soult,
French soldier

joined the army in the ranks in 1785. By 1794 he had become a brigadier-general, and in 1804 was made a marshal. Appointed to the chief command in Spain in 1809, he fought with varying success, until disagreement with Joseph Bonaparte caused him to leave Spain, but he was sent back by Napoleon on receipt of the news of the disastrous battle of Vittoria. In spite of Soult's brilliant generalship, his raw levies were no match for Wellington's veterans, and the defeat of Toulouse laid the way to Paris open to the British. Soult declared again for Napoleon in the Hundred Days' campaign, and went into exile after Waterloo. Under Louis Philippe he was minister for war, 1830-34 and 1840-44. He died Nov. 26, 1851.

SOUND. Term applied both to the cause and to the sensation of hearing. Experiments show that sounds which have the simplest character are musical sounds. A simple, regular to-and-fro motion of the air gives the impression of a single or pure musical note or tone. The frequency of the vibration determines the pitch of the note, i.e. its position in the musical scale. The same musical note will be heard with different degrees of loudness, or intensity, according to the range over which the air particles in the ear move to and fro. This range is called the amplitude of the vibration, and if it is large the sound is loud; if small, the sound is feeble.

In general, any body which vibrates with a frequency lying within certain limits (about 30 to 40,000 per second) will constitute a source of sound, from which the effects are conveyed to the ear. It is necessary that the source

should be in contact with some material medium, for example, the air, as is usual, or water, or even the earth. If the vibrating body is in a vacuum, no acoustic effects proceed from it. In quiescent air sound travels with a velocity of 1,118 ft. per second when the temperature is 60° F. In water, sound travels about 4½ times as fast as in air, the velocity being nearly a mile per second. See Acoustics; Ear; Hearing; Microphone; Telephone.

SOUND, THE. Strait between Denmark and Sweden. It lies between the island of Zealand and Scania, and is 30 m. long, with a breadth of 3 m. at its narrowest between Helsingør (Elsinore), in Denmark, and Helsingborg, in Sweden, and 37 m. at its widest. It leads from the Baltic to the Kattegat.

SOUSA, JOHN PHILIP (b. 1856). American handmaster and composer. Born at Washington, D.C., U.S.A., Nov. 6, 1856, he was leader of the U.S. Marine Corps band, 1880-92, and then became world-famous as the conductor of his own band. He toured in Europe several times, 1900-5, and round the world, 1910-11. He composed many comic operas, but is best known by his stirring military march music, e.g. The Washington Post, Semper Fidelis, and Hands Across the Sea. He came to England in 1930 with a march expressly written for the Royal Welch Fusiliers.



J. P. Sousa,
American musician

SOUTH, ROBERT (1634-1716). English divine. Born in Hackney, he was ordained in 1658, and became public orator to the university of Oxford in 1660. In 1670 he was made canon of Christ Church, holding also the living of Islip. He died July 8, 1716. South won fame as a controversialist, but more by his sermons, long regarded as models of style.

SOUTH AFRICA, UNION OF. Self-governing dominion of the British Empire. It consists of the provs. of the Cape of Good Hope, Natal, the Transvaal, and the Orange Free State. Pretoria is the seat of the government, and Cape Town the seat of the legislature. The area is 471,917 sq. m. Pop. (1921) 6,928,580, of whom 1,519,488 were Europeans. In 1926 the white population numbered 1,676,660.

The Union is administered by a governor-general and an executive council in charge of the departments of state. The legislature consists of a Senate and a House of Assembly. The former contains 40 members, 8 nominated by the governor-general and 8 elected for each province.

In 1909 a national convention agreed upon a form of union. The South Africa Act was passed in 1909, and on May 31, 1910, the Union of South Africa became an accomplished fact.

At the opening of the Great War Boer malecontents under De Wet rebelled, but the rising was quickly suppressed. By July, 1915, South African troops, under General Botha, finally conquered German South-West Africa, which was placed under the administration of the Union government.

General Smuts, who became premier on Botha's death in 1919, was in office until 1924, and it fell to him to deal with the outbreak on the Rand, 1922. Much feeling was roused by the proposal to give the country a new flag, and there was talk of secession from the Empire. After long discussion the proposal for a flag without the Union Jack was withdrawn. General Hertzog succeeded Smuts as prime minister in 1924, and was again returned to power in 1929. See Cape of Good Hope; Natal; Orange Free State; Transvaal.



South Africa arms

SOUTH AFRICAN WAR. Struggle between Great Britain and the Boer republics of the Transvaal and the Orange Free State, Oct., 1899, to May, 1902. Great Britain had, by treaty, the right of controlling the external affairs of the Transvaal, and had an interest in the white population that had been attracted by the discovery of gold. On Oct. 8, 1889, the Boers issued an ultimatum, and this was treated as a declaration of war.

The Boers at once invaded Natal. At Talana Hill and Elandsalaagte the British were victorious, but they met with a disaster at Nicholson's Nek. Before the end of Oct., Sir George White and his small force were shut up in Ladysmith, while other Boer forces invested Mafeking and Kimberley. In Nov. Sir Redvers Buller led the largest British contingent to the relief of Ladysmith. Methuen set out for Kimberley, reaching the Modder on Nov. 27, and delivered a night attack on some strong Boer lines at Magersfontein on Dec. 11-12. This was a total failure, and moreover on the 10th Gatacre had been repulsed at Stormberg.

The hopes of Britain now centred on Buller, who attacked at Colenso on Dec. 15, but the assault failed. These reverses led the Government to send out Lords Roberts and Kitchener, and before they arrived Buller again failed at Spion Kop, Jan. 22, 1900.

Roberts sent Sir John French, who had got away from Ladysmith, to relieve Kimberley, and the town was entered on Feb. 15. The Boer retreat was cut off, and they found refuge in the hed of the Modder. Then took place the battle of Paardeberg, Feb. 27, which ended in the surrender of 4,000 Boer fighting men. On Feb. 28 Buller's army joined hands with the defenders of Ladysmith. Roberts received the surrender of Bloemfontein on March 13. For six weeks the British remained there, preparing for a further advance by clearing the enemy from the neighbourhood.

On May 3 all was made ready for another forward move. On June 5 Roberts entered



South Africa. Map of the four provinces forming the Union

Pretoria. Mafeking had been relieved on May 17, and Buller had cleared the Boers from Natal, thus opening up a converging line of attack on the Transvaal. In Sept. the Transvaal was annexed, and in Dec. Roberts left the completion of the task to Kitchener.

During the African summer the Boer cause revived. Kitchener's plan was to clear the worst areas of their inhabitants and to hunt down the fighting men. He ringed round the foe with a chain of blockhouses, and completed arrangements for operating away from the lines of rly. Overtures for peace came in July, 1901, from the Boers. Encounters continued throughout the year, but in March, 1902, they asked conditionally for peace. The treaty was signed May 31, 1902. The British losses were 5,774 killed and 22,829 wounded, while over 20,000 died of disease. About 4,000 Boers were killed. See Botha; De Wet; Kitchener; Lady Smith; Mafeking, etc.

SOUTHALL. Market town and urban dist. (Southall-Norwood) of Middlesex. It is 12 m. from London, on the G.W. Rly., being also served by the Grand Union Canal. Since about 1880 many industries have been located at Southall. Here bridges carry the road over the canal and the canal over the rly. Market day, Wed. Pop. 30,261.

SOUTH AMERICA. Southern part of the land of the W. Hemisphere. It is a distinct continent or land-mass, surrounded by sea except where the Isthmus of Panama (pierced by a canal) joins it to the Northern continent. The E. coast is washed by the Atlantic, the W. coast by the Pacific; the N. coast, known historically as the Spanish Main, borders the Caribbean Sea. The archipelago of Tierra del Fuego, a S. extension of the continent divided from it by the strait of Magellan, juts into the Antarctic Ocean. The total area is about 7,000,000 sq. m. Brazil, occupying about half the continent, is Portuguese in origin and language: the other republics are Spanish in speech and origin. In the N. strips of Guiana belong to Great Britain, Holland, and France.

S. America has been called the world's great producer of raw materials. The Andes and S. Brazil are rich in minerals. Petroleum deposits occur in many parts. Coal seams are found in central Chile, S. Brazil, and the tropical Andine region. The W. desert produces nitrate. Rubber, timber, dyewoods, etc., come from the interior tropical forests. The cultivated lands in and near the tropics yield coffee, cocoa, sugar, and bananas. The S. plains, as well as those of the Orinoco, yield wheat, maize, and other cereals, wool, meat, and hides.

The population of S. America is compounded of European, African, and indigenous Indian elements. The temperate southern regions may be regarded as European in character. In the tropical Spanish republics at least half the population is pure Indian. In general, European influence and character are predominant, and the S. American countries are developing a civilization of a decidedly Latin type, modified by local influences. See America, map; Argentina; Brazil; Chile, etc.

SOUTHAMPTON. County borough and seaport of Hampshire. It is 79 m. from London, on the Southern Rly., and stands on a peninsula between the mouths of the Itchen and the Test at the head of Southampton Water, an opening of the English Channel extending 10 m. inland from the Solent and Spithead. Steamers go from here to America, the Far East, France, and elsewhere.

The buildings include the old church of S. Michael and the modern ones of All Saints and S. Mary. S. Julian's chapel, part of a 12th century foundation, has been used since the 16th century by French residents. There is an old guildhall. Southampton retains parts of its old fortifications. The most notable is the Bar Gate. The University College was removed

to new buildings at Highfield in 1914. Southampton owes its prosperity to its magnificent harbour. Large new docks were built in the 20th century and it was an important base in the Great War. The bishop of Southampton is suffragan to the bishop of Winchester. Pop. 169,900.

SOUTHAMPTON, EARL OF. English title granted successively to the Fitzwilliam and the Wriothesley families. The first creation was in 1537, in favour of Sir William Fitzwilliam, keeper of the privy seal. On his death in 1542 the title became extinct, but was revived five years later, when Thomas Wriothesley was made earl of Southampton. Henry, the 3rd earl, was a popular figure at court and a generous patron of the poets of the day, notably of Shakespeare. The title became extinct when the 4th earl died in 1667.

SOUTH AUSTRALIA. State of the Commonwealth of Australia. It lies between Victoria and Western Australia, along the S. coast. Adelaide is the capital. The area is 380,070 sq. m. Pop. 579,576.

The coast is harbourless in the W., but indented by Spencer and St. Vincent Gulfs in the E. The N.W. of the state is occupied by the S. portion of the Central Australia plateau. N.E. of the state is the basin of internal drainage of Lake Eyre. Here are intermittent rivers, e.g. Barcoo and Frome. Only small streams reach the sea except the lower Murray.

Wheat is the chief farming product. Fruit-growing is increasing. The irrigation colony of Renmark on the Murray is a celebrated fruit centre. Horses, cattle, and sheep are reared. Dairy farming is on the increase. The minerals include iron, gypsum, and salt. The rly. system centres on Adelaide. See Adelaide; Australia, and map p. 162.

SOUTHBOROUGH. Urban dist. of Kent. It is 2 m. from Tunbridge Wells on the Southern Rly. The place has a chalybeate spring and is a residential area. Pop. 7,100.

SOUTHBOROUGH, FRANCIS JOHN STEPHENS HOPWOOD, 1ST BARON (b. 1860). British civil servant. The son of a barrister, he entered the civil service in 1885 as a law clerk in the Board of Trade. In 1893 he was promoted to be secretary to the Railway Department, and in 1901 he became the Board's permanent secretary, being transferred in 1907 to a like post in the Colonial Office. Vice-chairman of the Development Commission, 1910-12, he was then appointed an additional civil lord of the Admiralty. In 1917-18 he acted as secretary to the Irish Convention, after which he retired from the public service and was made a peer.

SOUTHCOTT, JOANNA (1750-1814). Religious fanatic. Born at Gittisham, Devonshire, she joined the Methodists, and began to write prophecies. In 1802 she settled in London, where a chapel was opened for her

followers, and Joanna put forward the idea that she was about to become the mother of Shiloh, the second Christ (Rev. 12). Great preparations were made for the event, but on Oct. 29, 1814, she died of brain fever. Several collections of Joanna's prophecies are published, and a box containing others was the object of much interest until opened in 1927. Her followers formed a religious sect, which still existed in the 20th century.



Joanna Southcott, Religious fanatic

SOUTHEND-ON-SEA. County borough and watering place of Essex. It stands at the mouth of the Thames estuary, 36 m. from London, on the L.M.S. and L.N.E. Rlys. The borough includes Leigh-on-Sea, Westcliff, and Thorpe Bay. Among features are a long pier, promenades, Kursaal, swimming baths, golf links, and a yachting port. During the summer there is steamboat service to London, Margate, Ramsgate, etc. A new arterial road to London was opened in 1925. The place owes its rapid growth to its proximity to London and its bracing climate. Pop. 120,000.



Southernwood. Left, flower spray; right, fragrant leaves

SOUTHERNWOOD (*Artemisia abrotanum*). Shrubby perennial plant of the order Compositae, native of Europe. The flowers are insignificant, but the plants are popular favourites on account of their fragrant feathery, hair-like foliage. Southernwood is known in various parts of Britain by the names of Old Maa, Boy's Love, Old Woman.

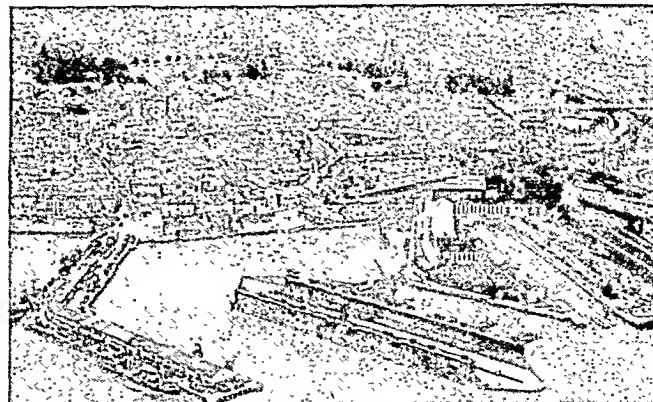
SOUTHEY, ROBERT (1774-1843). English poet, historian, and biographer. He was born at Bristol, Aug. 12, 1774. Influenced by the French Revolution, he developed advanced ideas in politics and religion. In 1803 he moved to Greta Hall, Keswick, to be near Coleridge, having married a sister of the latter's wife. This friendship was not to last, but Southey found at Keswick a new friend in Wordsworth. Years of continuous overwork affected his health, and when he died, March 21, 1843, he had been insane for three years.



Robert Southey, English poet
After P. Vandike, Nat. Port. Gallery

His early republicanism having gradually changed to Toryism, he had been appointed poet laureate in 1813. Southey's output was prodigious, but his only enduring work is his *Life of Nelson*, 1813, written in his lucid and direct prose style.

SOUTHGATE. Urban dist. of Middlesex. It is 1½ m. N.E. of New Southgate station on the L.N.E. Rly., and was so named as being the gate of Enfield Chase. Leigh Hunt was born at South-



Southampton. Aerial view of the port, with the floating dock in the centre foreground and the town quay to the left. Beyond the latter is seen part of Queen's Park

gate, and the once rural lanes between Southgate and Colney Hatch were favourite haunts of Lamb. Pop. 42,800.

SOUTH GEORGIA. British island in the Atlantic Ocean. Situated 800 m. S.E. of the Falkland Islands, of which it is a dependency, it is mountainous, with glaciers descending the gorges. It is a whaling settlement and sealing ground. Its area is 1,000 sq. m. Here Sir Ernest Shackleton (q.v.) was buried.

SOUTH LANCASHIRE REGIMENT. Regiment of the British army. Known also as the Prince of Wales's Volunteers, it was originally the 40th and 82nd Foot. The former was raised in 1717 and the latter in 1793. The regiment served with distinction at Alexandria, 1801, in the Peninsular War, and at Waterloo. After serving in the Crimean War it was present at the relief of Lucknow, took part in the New Zealand War, 1860-65, and in the South African War. During the Great War the 1st battalion was in Mesopotamia in 1916. The 2nd went to France in 1914, and participated in all the chief battles. Other battalions did equally good service. The depot is at Warrington.



South Lancashire Regimental badge

SOUTH ORKNEY. Group of British islands in the Atlantic. It is a dependency of the Falkland Islands, from which it is 790 m. to the S.E. The area is 800 sq. m.

SOUTHPORT. County borough, market town, and watering place of Lancashire. It stands at the mouth of the Ribbles estuary, 18 m. from Liverpool, and is served by the L.M.S. and Cheshire Lines Rlys. There are fine promenades, a pier, marine lake, winter gardens, botanic gardens, and parks. Byng House, a holiday home for ex-service men, was opened in 1921. Market days, Wed. and Sat. Pop. 70,644.

SOUTHSEA. Watering place of Hampshire, a suburb of Portsmouth (q.v.). It lies to the S.E. of the city, overlooking Spithead, and is served by the Southern Rly. It is a yachting centre, and has good bathing, esplanade with naval monuments, two piers, and other attractions. Southsea Castle dates from about 1540. Southsea Common is a fine stretch of ground.

SOUTH SEA BUBBLE. Popular name given to a group of speculative financial schemes in England, resulting in a crisis in 1720. In 1711 the South Sea Co. was started, having secured to it, under government guarantee, actual or anticipated commercial rights in consideration of which it took over £9,000,000 of the national debt. Soon afterwards there arose an epidemic of speculation.

In spite of Walpole's warning the shares ruced up. In the first months of 1720 the price of a £100 share rose to £1,100; then a series of fraudulent companies collapsed. The public took alarm, and in three months the shares had fallen to £150. Vast numbers of persons were ruined, and Walpole was called in to remedy the disaster. £2,000,000 was raised by the forfeiture of the property of directors and other persons who had made profits, the government resumed the national debt, and the company was reconstituted on a sober basis.

SOUTH SHETLAND. Group of islands in the Antarctic. A British possession, the group forms a dependency of the Falkland Islands, and is 580 m. S.S.E. of Cape Horn. The islands are a centre of the sealing industry. They were proclaimed a British possession in 1908. The area is 880 sq. m.

SOUTH STAFFORDSHIRE REGIMENT. British regiment. It is composed of the former 38th Foot and the 80th Foot, raised in 1702 and 1793 respectively. The regiment's distinguished record includes all the leading campaigns of the 18th-19th centuries, battle honours having been gained at Guadeloupe, in the Peninsular War, Crimea, Indian Mutiny, Egypt, and S. Africa. In the Great War it had a large number of service and two territorial, in addition to four regular and special reserve battalions. The 1st and 2nd battalions were in France and Belgium in 1914, and the regiment participated in all the great battles of the war. The regimental depot is at Lichfield.



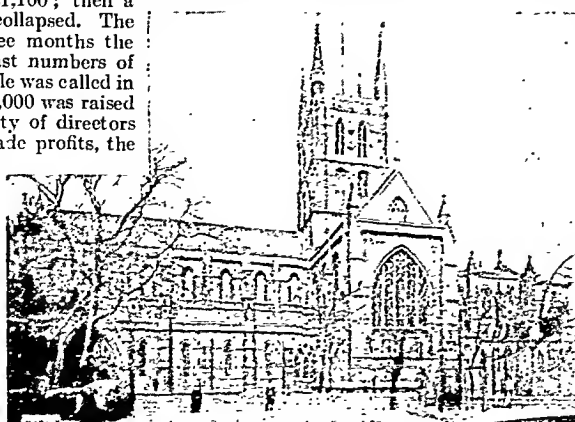
South Staffordshire Regimental badge

SOUTH WALES BORDERERS. Regiment of the British army. Formerly the 24th Foot, it was raised in 1689. It fought at Blenheim, Ramillies, Oudenarde, and Malplaquet. Against the Sikhs the Borderers displayed daring heroism at Chillianwalla (1848), and they served in India during the Mutiny. On the greatest day in the history of the regiment, Jan. 22, 1879, the 1st battalion was annihilated by the Zulus at Isandhlwana, and a single company defended Rorke's Drift (q.v.). In the Great War the 1st battalion made a stand at Gheluvelt in the first battle of Ypres. Its later services included the battles of the Somme, 1916, and of Cambrai, 1918. The 2nd battalion was in Gallipoli, 1915. Other battalions rendered notable services on various fronts. The regimental depot is at Brecon.



South Wales Borderers badge

SOUTHWARK. Met. bor. of London. In the co. of Surrey, it is bounded N. by the Thames, S. by Camberwell, E. by Bermondsey, and W by Lambeth. Among its buildings are S. Saviour's or Southwark cathedral, S. George's church, S. George's R.C. cathedral, Guy's Hospital, S. Olave's and S. Saviour's schools, and the headquarters of the London fire brigade. In Lavington Street and Sumner Street are the large printing works of the Amalgamated Press (q.v.). The market, mainly for fruit and vegetables, dates from the time of Edward VI. Southwark Bridge, opened June 6, 1921, has five arches, and replaced one built 1815-19. The Bethlem (Bedlam) Hospital grounds were presented as a public park by Viscount Rothermere. Since 1551 Southwark has been known as the Borough. In 1905 it was made the seat of a bishop. Pop. 184,404. See Bankside; Globe Theatre; Harvard, John; London. Pron. Suthuk.



Southwark. The cathedral church of S. Saviour's, from the south. It dates from the early 12th century, and was restored in the late 19th

SOUTHWELL. City of Nottinghamshire. It is 16 m. from Nottingham, on the L.M.S. Rly. The cathedral dates mainly from the 12th century. It is a beautiful cruciform building with Norman nave and towers and Early English choir. The chapter house is especially notable. Southwell was made the seat of a bishop in 1884. Pop. 3,085. See illus. below.

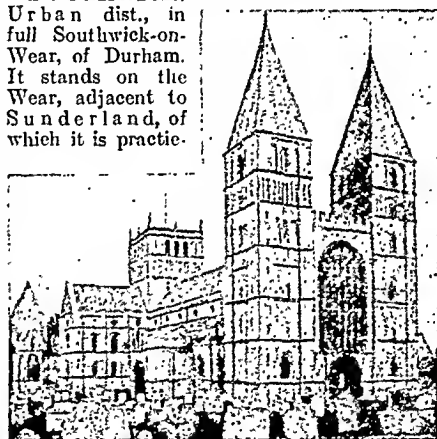
SOUTH-WEST AFRICA. British protectorate in Africa, formerly known as German South-West Africa. The Germans formally annexed it in 1884. It was conquered by the South Africans in 1915, and in 1919 its administration was entrusted to the Union of South Africa as mandatory of the League of Nations. In 1925 a constitution was given to the country. This consists of an executive committee, an advisory council and a legislative assembly.

The protectorate has an area of 311,820 sq. m. It lies between Angola (Portuguese W. Africa) on the N. and the province of the Cape of Good Hope on the S. On the E. is Bechuanaland, while its W. side fronts the Atlantic. Walvis Bay is a small enclave on the coast. Windhoek is the chief town. There are harbours at Swakopmund and Angra Pequena. Pop. (European), 24,115.

THE CONQUEST. In the autumn of 1914 the S. Africans occupied Lüderitz Bay and Walvis Bay. After a period spent in making preparations, a force of about 50,000 men advanced on Windhoek and entered the capital in May, 1915. The Germans retired farther into the interior, but on July 9, 1915, they surrendered.

SOUTHWICK.

Urban dist., in full Southwick-on-Wear, of Durham. It stands on the Wear, adjacent to Sunderland, of which it is practi-



Southwell, Notts. West front of the beautiful minster founded in the 12th century. See above

cally an industrial suburb. Here are traces of a monastery. Pop. 14,641.

Another Southwick is an urban dist. on the Sussex coast, 4 m. from Brighton. It has a station on the Southern Rly. Pop. 4,849.

SOUTHWOLD. Borough and seaport of Suffolk. It stands on the E. coast, at the mouth of the Blythe, 41 m. from Ipswich, with a station on the L.N.E. Rly. It is a popular watering place. The chief building is the church of S. Edmund. There is a harbour and an extensive common. Southwold became a busy seaport in the 13th century or earlier, having a market and a fair. In its bay, called also Sole Bay, the Dutch fleet fought, in 1672, an indecisive battle with the English. Pop. 3,370.

SOVEREIGN. British gold coin, the standard monetary unit. One pound sterling, or twenty shillings in value, it was introduced by Henry VII, and weighed 240 grains. The coin did not become the standard monetary unit until 1817. The sovereign is 22 carats fine and weighs 123.274 grains. Copper is the usual alloy. Half-sovereigns are coined, and two and five sovereign pieces were struck at various times. The introduction of treasury notes in 1914 led to the withdrawal of the sovereign from circulation. See illus. p. 1266.

SOVEREIGNTY. Term used in political philosophy for the possession of supreme power. John Austin defined the sovereign as one who receives obedience from, but does not render obedience to, any determinate human superior. Against this view is that of the historical school that sovereignty is a gradual growth, and cannot be thus defined.

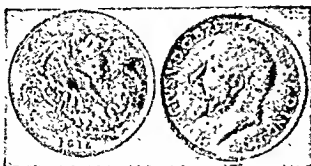
Sovereignty, in Austin's sense, implies an advanced state of society, one wherein the idea of law exists, for in its internal aspect it means the power to make and enforce law. This power was the sovereignty exercised in Rome by the emperors and in modern states by legislative bodies, but it is not absolute sovereignty.

In the ordinary sense sovereignty is freedom from all external control, the countries that possess this being known as sovereign states. See Divine Right; Federalism; King; State.

SOVIET. Russian word, meaning council, which has come to denote a method of republican government. An Englishman, James Elia Smith, early in the 19th century advocated a House of Trades to take the place of the House of Commons, and in 1848 such an assembly was chosen. From that date the idea took root in the minds of Russian revolutionary writers. A soviet was formed during the attempted St. Petersburg revolution of 1905, and the plan of setting up a representative system, which should give votes only to workers, manual and intellectual, was held in readiness. The opportunity to put it into practice came when the reformers forced the tsar to abdicate. At once a workers' and soldiers' council came into being.

Then after some months the Bolsheviks ousted the moderates, and the Soviet scheme was put into operation. To a certain extent the primary units are the councils elected by towns and large villages or groups of villages. The next body is the county council, which consists of the rural councils meeting together.

Both county councils and town councils send members to a regional council. Then there is a provincial council for each province. Finally comes the All-Russia Soviet Congress, made up of members sent from the town councils, one to each 25,000 voters, and from the provincial councils. In Hungary and Bavaria Soviet governments were set up in 1919, but neither endured. See Bolshevism; Russia.



Sovereign. Reverse and obverse of the British gold coin. Actual diameter $\frac{1}{2}$ in. See p. 1265

SOWERBY BRIDGE. Urban dist. of Yorkshire (W.R.). It stands on the Calder, where it is joined by the canal to Rochdale, 3 m. from Halifax, and has a station on the L.M.S. Rly. The town has manufactures of woollen, worsted, and cotton goods. Pop. 16,632.

SOW THISTLE (*Sonchus*). Genus of tender herbs, with milky juice, of the natural order Compositae. Natives of the temperate regions, they have brittle, hollow stems and alternate leaves with toothed lobes. The flower heads are yellow, and the fruits are flat and ribbed, with numerous silky hairs attached. There are four British species.

SOYA BEAN (*Glycine soja*). Annual herb of the order Leguminosae. A native of tropical Asia, it has erect, hairy stems, and the leaves are divided into three leaflets. The fruits are hairy pods containing from two to five small beans. For long it was cultivated chiefly as a principal ingredient in the composition of soy, a piquant sauce used in Japan, but in recent years the beans have been extensively grown as a source of oil for employment in the making of margarine, etc.



Soya Bean. Leaves and buds; inset, pods containing beans

Soya bean cake, a valuable artificial feeding stuff, is prepared by compression of the seeds after extraction of most of the oil.

SOYER, ALEXIS BENOT (1809-58). French cook. Born at Meaux, he became famous as a chef in Paris, but fled to England on the outbreak of the Revolution of 1830. He was head cook at the Reform Club, 1837-50, and the practical interest he showed in the Irish famine of 1847 caused the Government to appoint him to establish food-kitchens in Dublin. He died Aug. 8, 1858. He wrote *The Shilling Cookery Book*, 1854.

SPA. Name given to a health resort at which natural waters or baths can be taken for therapeutic purposes. It is derived from Spa in Belgium, one of the oldest watering places. Many forms of natural waters exist, suitable for the treatment of various complaints, but the particular character of the water is not the sole factor which gives a spa its therapeutic efficiency.

The chief English spas are Bath, Buxton, Harrogate, Leamington, Matlock, Cheltenham, Droitwich, Malvern, etc. In France the chief natural waters are found at Plombières, St. Amand, Mont Doré, Aix-les-Bains, Bourbon l'Archambault, Châtel-Guyon, Vichy, Vals, Royat, Salins-Moutiers, Contrexéville, Martigny-les-Bains, Vittel, and Vernet-les-Bains. In Switzerland there are natural waters at St. Moritz, Baden, and Weissenburg; in Italy at Abano. See Baths.

SPA. Town of Belgium. It is 21 m. by rly. S.E. of Liège, 7 m. from the junction at Pepinster. A famous inland watering place, it has attractive promenades, kursaal, race-course, golf course, etc. Pop. 8,245.

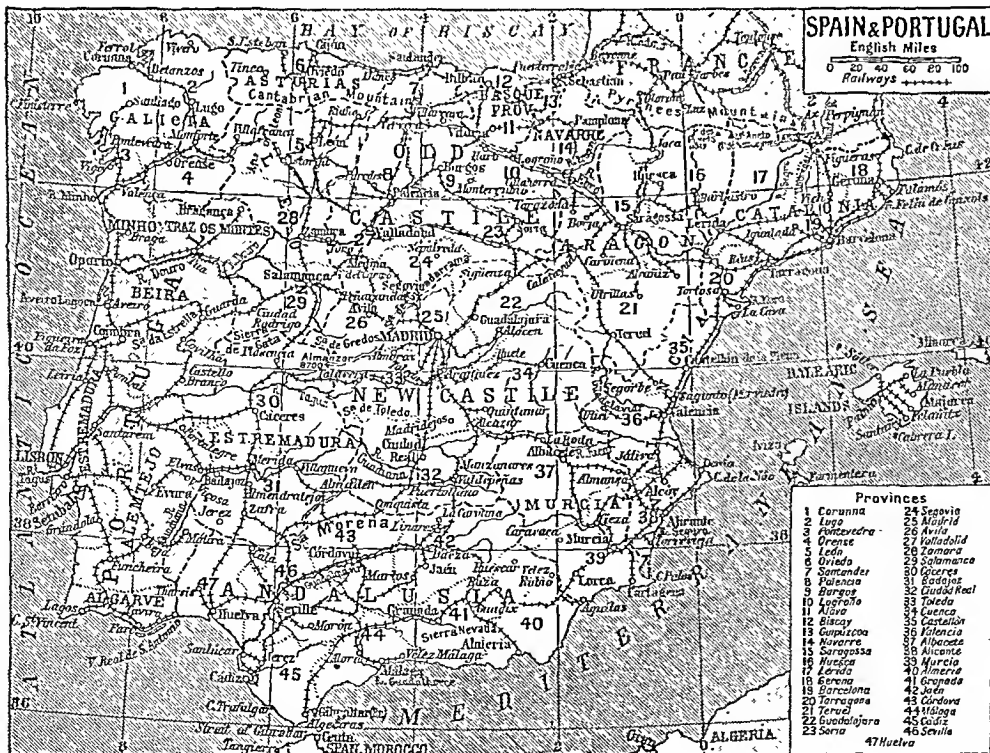
Occupied by the Germans in the Great War from Aug. 4, 1914, it became their headquarters in March, 1918, and the emperor lived in a château 2 m. E. of Spa. Here took place the meetings which immediately preceded his flight into Holland, Nov. 8, 1918. Spa was the meeting place of the armistice commission.

SPACE. One of the fundamental conceptions. Philosophically it has been explained as continuous extension, a phrase which involves the conception itself. Newton stated that absolute space, in its own nature, without relation to anything external, remains always similar and immovable. See Ether; Light; Relativity; Time.

SPAGHETTI (Ital. little ropes). Farinaceous food. It is made of the same paste as macaroni, but, unlike the latter, pressed out into a solid cord-like form thicker than vermicelli. It is cooked with cheese, meat, tomatoes, etc., and is used for puddings and savouries. See Macaroni.

SPAHI (Persian sipahi, soldier, mounted warrior). Name given to men of the Algerian and Tunisian cavalry regiments in the French army. Originating in the Turkish army, the spahis were horsemen furnished by the sultan's feudal lords. On their occupation of Algiers and Tunis the French incorporated the Turkish native regiments in their own army, supplying French officers. The word is identical with sepoy (q.v.), the Anglo-Indian term for Indian soldier.

SPAIN. Kingdom of S.W. Europe, the larger portion of the Iberian peninsula. It is bounded E. and S. by the Mediterranean, W. by Portugal



Spain. Map of the Iberian peninsula, showing the provinces into which Spain is divided



Spain. Peasant types of Alicante (left) and Castile (right)

and the Atlantic, N. by the Bay of Biscay and France, from which it is separated by the Pyrenees. The strait of Gibraltar separates it from Africa. For administrative purposes the Balearic and Canary Islands, as well as the Moroccan ports of Ceuta and Melilla, are regarded as part of the kingdom. Madrid is the capital. The area is 190,050 sq. m. Pop. 22,601,753.

The country consists of a high tableland surrounded and crossed by mt. ranges. The rivers include the Tagus, Ebro, Guadalquivir, and Guadiana. Olives, vines, and fruits are grown. The chief agricultural crops are wheat, barley, oats, and rye. Spain is rich in minerals, including coal, iron, copper, mercury, and lead. Railways total just over 10,000 m. in length, and are all in private hands.

Spain has been since 1875 a constitutional monarchy, with the sovereign as the executive, and the Cortes with the king as the legislative authority. The sovereign is assisted by a council of ministers. The senate consists of 360 members, of three classes: senators in their own right, senators for life, and 180 elected senators. The remainder of the Cortes, the congress, is composed of elected deputies. The national church is that of Rome. Military service is compulsory. Attached to the navy is a flying service.

The great period of Spanish history begins with the reign of Ferdinand and Isabella, under whose firm rule order and prosperity were restored. In 1492 the Moors' last stronghold, Granada, was captured, and in the same year Columbus discovered America. Spaniards crossed the Atlantic to take possession of the new lands, the wealth of which formed an almost inexhaustible treasure house. The decay of Spain dates from the time of Philip II. He became involved in the war with England which led to the Armada, while the Netherlands revolted and the northern states declared themselves independent.

Early in the 19th century Spain lost her American colonies. In 1833 there was a civil war between Ferdinand's daughter Isabella and Don Carlos, the former securing the throne. Meanwhile, constitutional privileges had been obtained, but unrest continued. In 1875 Isabella's son, Alphonso XII, was proclaimed king. In 1886 his posthumous son, Alphonso XIII (q.v.), succeeded. In 1898 Spain and the United States came to blows, the end being the loss of Cuba and the Philippines.

The early years of the 20th century were marked by disorders caused by anarchists and others. In 1916 there were serious riots and martial law was proclaimed, and in 1920 the problem of home rule for Catalonia became acute. In Sept., 1923, a military revolt broke out. Primo de Rivera (q.v.) formed a provisional military government, or directory, the king accepted his dictatorship, and parliament was dissolved. In Dec., 1925,

Aspalathos, it stands on a peninsula on the Adriatic Sea, picturesquely encircled by hills, 74 m. S.E. of Zara. The most important structure is the palace of Diocletian, constructed in 303, when he founded the town. The cathedral, 650, originally the mausoleum of Diocletian, contains some reliefs on the portal representing scenes from the life of Christ. Manufactures include wine and oil. Pop. 30,000.

SPALDING. Market town and urban dist. of Lincolnshire. It stands on the Welland, 14 m. from Boston, with a station on the L.N.E. Ry. and the joint line of the L.N.E. and L.M.S. Ry. The principal building is the parish church of SS. Mary and Nicholas, a 13th century building restored in the 19th century. Other buildings include the corn exchange and the Johnson hospital.

There is a grammar school founded in 1567, but occupying a modern building. An important agricultural centre, Spalding has a trade along the river. Ayscoughfice Hall, dating from 1420, is now a museum. Market day, Tues. Pop. 10,700.

SPANDAU. Town of Prussia. In the prov. of Brandenburg, it stands at the junction of the Havel and the Spree, 8 m. from Berlin, of which it is practically a suburb. There is a trade along the Havel. Before the Great War it was a garrison town, having also an arsenal and many factories for the manufacture of arms and ammunition. The chief building is the citadel, and the Julius tower therein was selected to hold £6,000,000 of gold exacted from France in 1871. Pop. 111,629.

SPANDREL. In architecture, the space between the extrados or outer curve of an arch, a horizontal line from the crown of the arch, and a vertical line from its springing. It is a favourite place for sculptural and other decoration. See Arch.

SPANIEL. Group of dogs, distinguished by a wide short skull, a high forehead, heavy build, and large pendent ears. Most have thick, long, and silky hair. The three main classes are land, water, and toy spaniels. The Clumber spaniel is a large, heavy animal, with a dense coat of white and lemon-coloured hair, and makes a good dog with guns.

The cocker spaniel (q.v.) is only half the size, with a longer head and

the dictatorship came to an end, and a ministry of the usual kind was formed. In 1927 an assembly was called together to take the place of the chamber suppressed in 1923, but its functions were advisory only, and it was dissolved in Feb., 1930.

SPALATO OR **SPLIT.** Town and seaport of Yugoslavia. The ancient

the dictatorship came to an end, and a ministry of the usual kind was formed. In 1927 an assembly was called together to take the place of the chamber suppressed in 1923, but its functions were advisory only, and it was dissolved in Feb., 1930.

SPANISH-AMERICAN WAR. Conflict between the United States of America and Spain, 1898. On Feb. 15, 1898, the U.S. battleship Maine was blown up in Havana Harbor, according to investigators by a mine, and on March 11 the U.S. army mobilised Congress declared the independence of Cuba, and Spain declared war, April 24, 1898.

The naval campaign was localised to the Philippine Islands and Cuba. In the former Dewey destroyed the Spanish fleet in Manila Bay, May 1; while off Cuba another fleet was blockaded in Santiago Bay until July 3, when the Spaniards slipped out, were chased, and totally defeated. In the meantime, military operations had begun in Cuba. Aided by the Cubans, the Americans attacked Santiago, which capitulated July 16. The Americans then landed at Porto Rico, and the end of the war came with an attack on Manila, Aug. 13, the Spanish forces capitulating next day. Peace was concluded in Paris, Dec. 10. Spain relinquished Cuba, and in return for £4,000,000 ceded the Philippines, Porto Rico, and Guam to the U.S.A. See Cuba; Philippine Islands.

SPANISH MAIN. Name formerly given to the Spanish possessions on the coast of the American mainland from the mouth of the Orinoco to Yucatan, and often loosely used as a synonym for the Caribbean Sea.

SPANISH SUCCESSION, WAR OF THE. European war, fought 1702-14, by France, Spain, and Bavaria, against Austria, Prussia, Great Britain, Holland, Denmark, and Portugal. By the partition treaties of 1698 and 1700 Louis XIV had renounced all claims of his family to the throne of Spain. When, however, Charles II of Spain died childless, Nov. 1, 1700, Louis ignored his obligations and claimed the throne for his grandson, Philip of Anjou, while the emperor Leopold claimed it for his son, the archduke Charles.

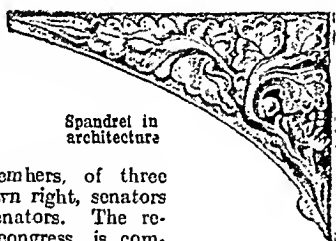
The campaign was carried on in the Netherlands, Germany, Italy, and at sea. The chief successes on the allied side were Marlborough's four great victories of Blenheim, Ramillies, Oudenarde, and Malplaquet, and the capture of Gibraltar in 1704. The French won victories of a temporary nature by capturing some of the fortresses in the Netherlands, and in Spain they took Madrid and won the battle of Almansa. The war dragged on until an armistice between Great Britain and France was signed in June, 1712. Holland, Prussia and Savoy continued the war until the peace

treaty signed at Utrecht (q.v.), April 11, 1713.

The result of this war was that the Bourbon candidate Philip of Anjou retained the throne, on the condition that no one person should ever wear the crowns of both France and Spain; Austria obtained the Spanish Netherlands,

Milan, Naples, and Sardinia, which last was later exchanged for Sicily, originally awarded to Savoy. Great Britain secured Newfoundland, Nova Scotia, Hudson Bay, Gibraltar, and Minorca, and important trading rights.

SPANISH TOWN. Town of Jamaica, in the British West Indies. It is a rly. junction situated on the Cobre river, 15 m. by rly. W.N.W. of Kingston (q.v.). Founded by



Spandrel in architecture



Spaniel. 1. Springer, a breed resembling the smaller cocker. 2. Clumber, a heavy white and lemon-coloured animal

Diego Columbus in 1525, and originally called Santiago de la Vega, it was the capital of the island until 1871. Pop. 8,694.

Sparking Plug. Electrical device for igniting the explosive charge in an internal combustion engine. See Magneto.

SPARROW. Genus of finches, of which the best known is the house sparrow (*Passer domesticus*). This, the familiar small, black-streaked brown finch, has followed man in his advance over the globe so thoroughly that its original country is now uncertain. Though destructive in the garden, it eats innumerable insects and is a useful scavenger. The male is distinguished by his black throat and by his coloration, being more ashy than the female.

The tree sparrow (*P. montanus*) is slightly smaller, and has brown plumage, with a white collar around the throat and two white bars on the tail. It occurs in England and Scotland, but is rare in Wales and Ireland. See Accentor.

SPARROW HAWK (*Accipiter nisus*). British bird of prey, found in most country districts. The plumage is bluish grey on the upper parts and reddish white, barred with dark brown, on the under parts. The tail is barred with grey and black, and the beak is blue. The female has brown upper parts, while the under parts are barred with light and dark grey. It is very destructive in game coverts during the breeding season.

SPARTA. City and kingdom of Greece. It was in Laconia in the south of the country, and was sometimes called Lacedaemon. The city was founded about 1100 B.C.; its authority was extended over the surrounding country and it became the recognized head of the Greek states. It had two kings, but the real power was in the hands of a council and of officials called ephors. The Spartan system was directed to a single supreme end, military efficiency. The Spartans were bred to be soldiers, contemptuous of the amenities of life, and equally contemptuous of pain and of death. The system was attributed to the lawgiver Lycurgus.

With the prestige won by Athens in the Persian wars, the rivalry between Athens and Sparta for the leadership of the Hellenic world began in 431. Ten years of contest left the fight drawn, and the war was temporarily suspended; but Athens dissipated her power in a disastrous expedition to Sicily, and in 412 Sparta renewed hostilities. When Lysander annihilated the Athenian fleet at Aegospotami, in 405, Sparta achieved a decisive victory.

For 25 years Sparta was the dictator of Greece, but in 379 Thebes revolted against her domination, and Spartan ascendancy never recovered from the great Theban victory at Leuctra in 371.

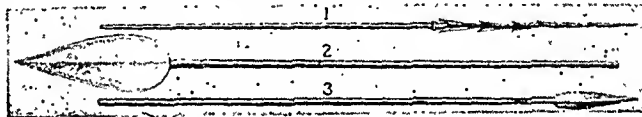
SPARTACUS (d. 71 B.C.). Thracian soldier who commanded the insurgents in the third Servile war of Rome. Originally a shepherd, he was taken prisoner by the Romans and trained in the gladiators' school at Capua, whence in 73 B.C. he escaped with 70 others to the crater of Vesuvius. He gathered an army of runaway gladiators and other slaves, estimated at 100,000 men, and devastated Italy from end to end. In 71 he was defeated and slain.

The name was given to an extreme socialist group in Germany between 1916 and 1919. Karl Liebknecht adopted this pseudonym, and towards the end of the war his followers, called Spartacists, became powerful. Fierce fighting occurred between them and the republican forces, and the Spartacists were finally defeated in Jan., 1919.

SPASM. Involuntary contraction of a muscle or group of muscles. Spasms may be due to hysteria, reflex irritation of a nerve, or various diseases of the nervous system. A mild form of hysterical spasm, most often observed in children, in which a group of muscles are contracted at intervals, causing, for example, lifting of the eyebrow or pulling down of an angle of the jaw, is known as habit-spasm. A severer form is termed a tie.

SPEAKER. Term used for the presiding officer of the British House of Commons. The first person to receive the title was Sir Thomas Hungerford, speaker in 1377. He and his successors were called speakers because it was their duty to voice the wishes of the members of the house to the king. The speaker is elected by the members, and receives a salary of £5,000 a year and a residence. He takes precedence of all commoners in the kingdom, represents the House of Commons on various ceremonial and other occasions, and is usually made a viscount and pensioned on retirement. The lord chancellor is the speaker of the House of Lords.

SPEAR (A.S. *specc*, perhaps cognate with *spar*). Offensive weapon, consisting of a sharply pointed shaft, used in war and the chase. It may be used for thrusting or hurling. Specialised forms are the pike, lance, javelin, dart, arrow, and bayonet. The shaft, of varying length, is usually of wood, and the pointed head of metal. A bone point probably succeeded the charred end of a stick, and in the palaeolithic age flint spearheads already occur. The spear was the chief weapon in the Homeric age. See Assagai; Lance.



spear. 1. Barbed weapon used by Fiji Islanders. 2. Broad-headed Soudanese spear. 3. English hunting spear of the 16th century

SPEARMINT (*Mentha spicata*). Perennial herb of the order Labiate, native of Europe, widely cultivated for culinary purposes.



Spearmint. Leaves and flower whorls

It has creeping underground stems, and erect aerial stems with opposite, oval-lance-shaped, aromatic leaves. The stems end in spikes of whorled purplish flowers.

SPEARWORT (*Ranunculus lingua*). Perennial herb of the order Ranunculaceae, a native of Europe and temperate Asia. It is found chiefly in marshes and ditches. The hollow stem is about 3 ft. high, with large, stalkless, lance-shaped leaves that clasp the stem at their base. The golden-yellow flowers are 1½ ins. across. The lesser spearwort (*R. flammula*) is a similar plant, but smaller in all its parts.

SPECIAL CONSTABLE. In the United Kingdom, a person sworn in to assist the regular police in preserving order in times of special danger or emergency. Throughout the Great War the specials did valuable work. In 1919 a constabulary medal was authorised to be issued in recognition of their services, 1914-18. The special constables were called out during the general strike in 1926. See Constable; Police.

SPECIAL LICENCE. Form of marriage licence granted on certain conditions and in

exceptional circumstances. Special licences are granted only by the archbishop of Canterbury, and enable the holder to be married at any time or place without previous residence in the district. Special licences are issued by the court of faculties, 23, Knightbridge Street, London, E.C., the fees amounting to £25.



Speaker of the British House of Commons in his official chair

from those of another species than those which distinguish the offspring of one individual or pair. The idea of species is relative, its value practical. See Biology; Hybrid.

SPECIFIC GRAVITY. Ratio between the weights of equal volumes of any substance and of some other substance that has been chosen as a standard. For gases the standard chosen is hydrogen or air; for liquids and solids, water. The specific gravity of solids and liquids is determined generally by methods based on the law of Archimedes that a solid, floating or immersed in a liquid, loses weight equal to that of the liquid it displaces. Special balances are employed to enable the solid to be accurately weighed, both in air and water. See Hydrometer.

SPECIFIC HEAT. Quantity of heat necessary to raise the temperature of 1 gram of a substance through 1° C. at any given temperature. It varies at different temperatures. If 100 grams of water at 100° C. are mixed with 100 grams at 0° C. the temperature of the mixture is approximately 50° C. But if 100 grams of copper at 100° C. are placed in 100 grams of water at 0° C. the resulting temperature of the water and copper is about 9.1° C. The heat given out by the copper in cooling through 90.9° C. has heated an equal mass of water through 9.1° C. The amount of heat necessary to raise the temperature of a substance through 1° varies at different temperatures. There is a relation between the specific heat of a substance and its atomic weight (See Atom).

The amount of heat required to raise one gram of water through one degree centigrade is called a calorie, and is the metric unit of heat. In British units the British Thermal Unit or B.T.U. is the heat required to raise 1 lb. of water 1° F. See Calorie; Therm.

SPECTACLES (Lat. *spectaculum*, show). Device for aiding sight, consisting of lenses of glass or rock crystal, mechanically supported before the eyes. The invention of spectacles is probably due to the Chinese. Alessandro de Spina, a Florentine monk, and Rogor Bacon are both credited with their invention in

Europe, and to Benjamin Franklin is given the credit of the bifocal lens.

Eye-glass lenses are made from optical glass and rock crystal or pebbles. The lenses are divided into two main classes, spherical and cylindrical, each subdivided into concave and convex and their combinations. Concave lenses are used for the correction of short sight, convex lenses for long sight, and cylindrical lenses for astigmatism. See Eye; Optics; Refraction; Sight.

SPECTATOR, THE. Periodical essays begun by Joseph Addison, March 1, 1711, in succession to *The Tatler*, issued daily until Dec. 6, 1712, and then revived June 28, 1714, and issued thrice weekly until Dec. 20 of the same year. See Addison, J.; Steele, Sir R.

The existing *Spectator* is a London weekly review. It was founded July 5, 1828, and its features include a summary of the week's news, political and social articles, literary criticism, and correspondence. Its editors have included Robert Stephen Rintoul, 1828-58; Richard Holt Hutton, 1861-97; and J. St. Loe Strachey, 1897-1927.

SPECTROSCOPE (Lat. spectrum, something seen). Instrument by which light is resolved into vibrations of different frequencies, and can thus be examined and its properties defined. It generally includes a slit and a collimator to admit the light in a parallel beam, and a viewing telescope. With a camera replacing the eyepiece the instrument becomes a spectrograph, and when equipped with measuring scales, etc., a spectrometer.

When a ray of light from any source is passed through a prism a spectrum is seen, consisting of coloured bands formed by dispersion of the ray. The visible portion of the spectrum varies from red, through orange, yellow, green, and blue to violet, but the spectrum is continued beyond the red and violet, these invisible portions being termed the infra-red and the ultra-violet respectively.

The actual analysis is effected in refracting spectroscopes by one or more prisms of glass, or other refracting medium, which splits up the beam into a rainbow spectrum. For very refined measurements the resolving power of prisms is insufficient, and a diffraction grating is used.

SPECTROSCOPY. This is the science which deals with the methods of production of the spectra from various sources of light, and also with their study. In 1672 Newton communicated to the Royal Society his famous theory concerning the solar spectrum, and in 1815 Fraunhofer discovered the dark lines in it which bear his name, but spectroscopy as a practical science really began with Kirchhoff's interpretation of the Fraunhofer lines in 1859, that they indicated gases and metallic vapours surrounding the incandescent body of the sun. Many known elements were soon proved to be represented, and incidentally several new ones were discovered on the earth. The brighter stars showed similar spectra. Other lines in the solar spectrum, intensified when the sun is low, are due to the atmosphere and are called telluric lines. See Diffraction; Fraunhofer; Light, etc.

SPEE, MAXIMILIAN, COUNT VON (1861-1914). German sailor. Born at Copenhagen,

he had a distinguished career in the German navy. In 1914 he was in command of the Far Eastern squadron, and on the outbreak of the Great War escaped from China waters. On Nov. 1 he defeated Craddock's squadron at Coronel (q.v.), but on Dec. 8 was beaten at the battle of the Falkland Islands (q.v.), he himself going down with his flagship, the armoured cruiser *Scharnhorst*.

SPEECH. Faculty of uttering articulate sounds with the mouth for the purpose of communication, which distinguishes man from the lower animals. The sound of the voice is produced by a current of air passing through the air passages from the lungs, the cavities of the pharynx, mouth, and nose acting as resonators or sounding boxes. Fine movements of the tongue are essential for speech.

Defects in speech may be due to partial blocking of the air passages, or to paralysis of the nerves supplying the muscles of speech. See Aphasia; Language; Larynx; Pharynx; Phonetics; Stammering; Voice.

SPEED HOUSE. Building in the Forest of Dean. Built about 1680, in it was held the verderers' court for the business connected with the forest. See Dean, Forest of.

SPEEDOMETER. Speed indicator used largely for automobiles, on electric generators, marine engines, etc. In one form it comprises a rotating spindle, driven from a convenient source, and carrying pivoted weights projected outwards by centrifugal force and controlled by springs or gravity. The outward and inward movements of the weights are communicated to a pointer moving over a dial graduated in miles per hour or revolutions per minute.

Speedway. Name given for a track of dirt or cinders on which motor cycles race. In 1930 *The Daily Mail* presented a trophy known as the National Speedway Cup, for competition among the speedways of Gt. Britain.

See Dirt Track Racing.

SPEEDWELL (*Veronica chamaedrys*). Perennial herb of the order Scrophulariaceae, native of Europe and Siberia. The opposite leaves are oval, strongly toothed, and stalkless, and the flowers, bright blue and shortly tubular, divide into four lobes, of which the upper and lower are broader than the side pair.

SPEKE. Village of Lancashire. It is 7 m. from Liverpool, with a station on the L.M.S. Rly. It is notable for its timbered manor house, built about 1600. Pop. 366.

SPEKE, JOHN HANNING (1827-64). British explorer. Born May 4, 1827, he entered the Indian army in 1844. During his service he travelled extensively. In 1854 he accompanied Sir Richard Burton into Somaliland. He and Burton made another journey from Zanzibar in 1857, pushing up to Lake Tanganyika; eventually Speke reached Victoria Nyanza, having left Burton ill at Kaze. In 1862 Speke again made his way to Victoria Nyanza, and established the fact that the Nile is an outlet of the lake. He accidentally shot himself, Sept. 18, 1864. Consult his *Journal of the Discovery of the Source of the Nile*, 1863.



Count von Spee,
German sailor



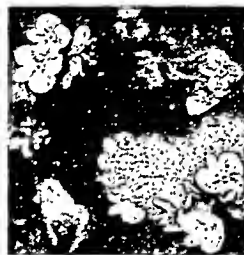
J. H. Speke,
British explorer

Spelter. Trade name for zinc (q.v.). The term is also used for an alloy of copper and zinc.

SPENBOROUGH. Urban dist. of Yorkshire (W.R.). It is in the Spen Valley, 9 m. from Leeds. A centre of the woolen manufacture, it is of modern growth. The chief building is the town hall. Pop. 31,092.

SPENCER, EARL. British title borne since 1765 by the family of Spencer. John Spencer, a grandson of the 3rd earl of Sunderland, was made a baron and a viscount in 1761, and Earl Spencer in 1765. His son, George John, the 2nd earl, was first lord of the admiralty; the 3rd earl was a celebrated politician. The 5th earl was the noted Liberal statesman, and when he died the title passed to his half-brother, Charles Robert (1857-1922), long a Liberal member of Parliament and from 1905-12 lord chamberlain. The earl's estates are mainly in Northamptonshire, around his residence, Althorp (q.v.).

SPENCER, JOHN CHARLES SPENCER, 3rd EARL (1782-1845). British statesman. Born in London, May 30, 1782, he entered Parliament in 1804. In 1827 he became leader of the Whig opposition to Wellington, and in the ministry of Lord Grey Viscount Althorp, as he still was, became at one step chancellor of the exchequer and leader of the House, 1830, and was largely responsible for carrying through the Reform Bill. His father's death in 1834 translated him to the House of Lords and he left political life. He died at Wiseton, Northamptonshire, Oct. 1, 1845.



Speedwell. Blue flowers of the common wayside plant

SPENCER, JOHN POYNTE SPENCER, 5th EARL (1835-1910). British statesman. Elder son of the 4th earl, he was born in London, Oct. 27, 1835. In 1868 Spencer became lord-lieutenant of Ireland, and he retained his office until 1874. From 1880-82 he was lord president; then in 1882 he went again to Ireland. He followed Gladstone on Home Rule, and in 1886 was again lord president. In 1892 he became first lord of the admiralty. Spencer was Gladstone's choice as his successor in 1894, but when Rosebery was preferred he served him loyally; in opposition he was again active, and in 1902 became leader of his party in the Lords. He died Aug. 14, 1910.

SPENCER, HERBERT (1820-1903). British philosopher. Born at Derby, April 27, 1820, he was privately educated. From 1837 to 1846 he was engaged in civil engineering, and was sub-editor of *The Economist*, 1848-53. He opened his career as an author in 1842 with *Letters on the Proper Sphere of Government*, already noteworthy for their uncompromising individualism, and in 1850 published his first important work, *Social Statics*, in which an evolutionary theory of progress is clearly set forth. This was followed in 1855 by *The Principles of Psychology*.

Spencer now perceived the possibility of making evolution the foundation of an interpretation of life, mind, and society, and in March, 1860, he



5th Earl Spencer,
British statesman
Bersford



Herbert Spencer,
British philosopher
Elliott & Fry

issued the prospectus of his System of Synthetic Philosophy. This system is in ten volumes and occupied him for 36 years. His other works include Education, 1861; The Study of Sociology, 1873; and Man versus the State, 1884. Spencer died at Brighton, Dec. 8, 1903.

SPENDER, JOHN ALFRED (b. 1862). British journalist. Born at Bath, he was the eldest son of John Kent Spender, M.D., his mother (d. 1895) being known as a novelist.



J. A. Spender.
British journalist.
Elliott & Fry

He was educated at Bath College and Balliol College, Oxford. Editor of The Eastern Morning News, Hull, 1886-90, he joined the staff of The Pall Mall Gazette, 1892, was assistant editor of The Westminster Gazette, 1893-96, and editor, 1896-1921. Spender's writings include The Comments of Bagshot; The Foundations of British Policy; The Indian Scene; The Life of Sir H. Campbell-Bannerman, 1925; The Changing East, 1926; Life, Journalism and Politics, 1927, Life of Lord Cowdray, 1929, and Sir Robert Hudson, 1930.

Spender's brother, Edward Harold Spender (1864-1926), served on the leading Liberal newspapers and wrote a number of biographies.

SPENNYMOOR. Urban dist. of Durham. It is 6 m. from Durham on the L.N.E. Rly. The industries are connected with coal mines and iron and steel works. Pop. 18,242.

SPENSER, EDMUND (c. 1552-99). English poet. Born in London of humble parents, though he claimed connexion with the Spencers of Althorp, he was educated at Merchant Taylors' School and Pembroke Hall, Cambridge. The Shepherds' Calendar, published in 1579, brought him immediate fame. Already introduced at court by his powerful patrons, the earl of Leicester and Sir Philip Sidney, Spenser went to Ireland in 1580 as secretary to the lord deputy. Spenser was rewarded with an estate of 3,000 acres in county Cork. His ideas on English colonisation of Ireland are to be found in his prose work, A View of the State of Ireland. During these years a close friendship sprang up between Spenser and Raleigh, and it was at Spenser's castle of Kilcolman, about 1589, that the poet showed to his friend the first three books of The Faerie Queene, on which he had long been at work.

Marrying in 1594 a lady, the story of whose wooing Spenser tells in his Amoretti, he had made Ireland his home, when in 1597 an insurrection took place. Kilcolman Castle was burned, and one of Spenser's children, it is said, perished in the flames. He died in London, Jan. 16, 1599.

SPERMACEITI. A waxy substance obtained from the oil contained in the large skull cavity of the sperm whale. Mainly cetyl palmitate, it is hard, translucent, nearly white, and unctuous. Separating at a low temperature from the sperm oil, it is repeatedly washed with hot water and boiling potash lye. Spermaceti is used for making candles and dressing textiles, and in medicine and surgery.

SPERMATOZOON. Male germ cell. In the lowest form of life the spermatozoon

and the female cell, or egg, are very similar, but in the higher forms the spermatozoon becomes a highly specialised active locomotor cell, and the female egg or ovum becomes a larger, more passive cell. The spermatozoon is provided with a head, body, and tail, the tail providing the power for movement. See Biology; Embryology; Fertilisation; Sex.

Sperm Whale. Large cetacean, also known as the cachalot. See Whale.

Sperrin. Mountains in Ireland. They extend mainly between Strabane in co. Tyrone and Draperstown in co. Londonderry.

SPEY. River of Scotland. Rising in the hills between Lochs Lochy and Laggan, it flows E. and N.E. through Inverness-shire and Morayshire, forms part of the boundary between the latter county and Banffshire, and enters the Moray Firth at Kingston. It is 110 m. long, and has valuable salmon fisheries. Speyside is noted for whisky distilling.

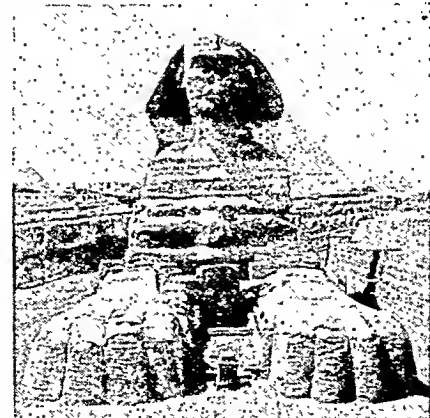


Sphegodon. Nocturnal reptile somewhat similar to a lizard, that lives in New Zealand
W. S. Berridge, F.Z.S.

SPEZIA. City and seaport of Italy. It is situated on the gulf of Spezia, 56 m. by rly. S.E. of Genoa. It has an arsenal, docks, shipyards, in which some of the largest Italian warships have been built, and electrical works. Spezia is a winter resort. Here Shelley was drowned in 1822. Pop. 110,401.

SPHENODON. Lizard-like reptile of New Zealand, known to the Maoris as Tuatara, and now called scientifically Hatteria punctata. It is the only surviving representative of the order Rhynchocephalia (snout-headed) of the reptiles. The mandible is beak-like, and there is a pineal body in the top of the skull. The skin is tubercled, and a crest of small spines runs along the middle line of the back and tail. About 20 ins. long, its colour is usually dark olive with yellow dots. It lives in burrows and feeds at night on insects and worms.

SPHINX (Gr. sphingein, to strangle). Figure of a composite monster. The oldest example, the Great Sphinx of Gizeh, in lower Egypt, is a recumbent image of a man-headed lion, hewn out of a rocky knoll near the pyramid of Khafra. It is 187 ft. long, the head 30 ft. long, the face 14 ft. wide, and the height to the top of the head 66 ft. Portions of the



Sphinx of Gizeh after restoration. Hewn from the living rock, it is nearly 5,000 years old
"The Times" Copyright

beard and uraeus are in the British Museum. In front of the breast Thothmes IV set up a granite slab, mentioning Khafra's name, to commemorate the digging of the image out of the drifted sand. The next oldest, a granite pair 7 ft. long, bear the name of Pepi I, of the VIth dynasty.

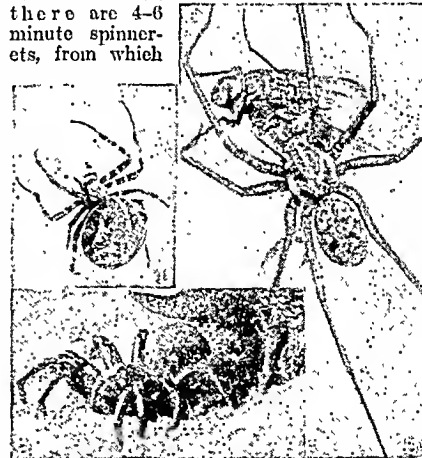
According to Greek mythology the sphinx propounded riddles, strangling those who failed to solve them, but slaying herself when Oedipus offered the solution.

SPICE. Produce of plants that are aromatic to the smell and pungent to the taste. The spices are collected from different parts of plants. The most used are allspice, the berries of the pimento; cinnamon, the bark of a small evergreen tree of Ceylon; clove, the dried calyx and flower buds of a myrtle; ginger, the root of a tropical plant; and nutmeg, the kernel of another, while mace is the covering of nutmeg. Ground spices are used as flavourings.

Spice Islands. Name for the group of spice-yielding islands in the Dutch E. Indies, now usually known as the Molucces (q.v.).

SPIDER. Order (Araneidae) of the class Arachnida (q.v.) of the Arthropods. The spider's body is divided into two parts: (1) The head and breast, fused into one piece (the cephalothorax), and (2) the abdomen. Between these there is typically a narrow waist.

On the top of the head are several pairs of simple short-sighted eyes. From the region corresponding to the thorax there arise four pairs of seven-jointed legs, ending in minute curved claws, by means of which spiders grip the surface on which they creep. At the end of the abdomen there are 4-6 minute spinnerets, from which



Spider. 1. Full-grown garden spider, about natural size. 2. South American trapdoor spider, at the mouth of its burrow, reduced. 3. House spider, devouring a bluebottle fly, slightly magnified

the silken threads emerge. Each spinneret bears many tiny spinning tubes, through which the silk issues, and each tube is connected with an internal gland. The gland is enclosed in a muscular envelope, the contraction of which forces the liquid silk down a duct and out at a spinning tube. The thread is a fusion of many jets of liquid silk, which solidifies instantaneously on exposure to air.

Spiders breathe by means of lung-books and tracheae. The newly hatched young of a spider is practically a miniature of the adult, and there is no metamorphosis. Spiders live on the juices of insects, which they suck. They are characteristically terrestrial, but a few occur in fresh water, notably the water spider (Argyroneta aquatica).

When a spider is in danger of losing its foothold, it pays out a drag-line of silk. This is the origin of the irregular snare, as in the house spider, and of the beautifully regular web.

SPIDER MONKEY (*Ateles*) Genus of American monkeys notable for their attenuated limbs, slender bodies, and long prehensile tails. Marvellously agile, they swing from bough to bough, making use of their tail. There are many species, all found between Mexico and Uruguay, and in Brazil the natives use them for food.

SPIDERWORT (*Tradescantia*). Genus of perennial herbs of the natural order Commelinaceae. Natives of America, they vary considerably in form and habit. Some of the tropical species are in cultivation in hothouses and greenhouses; but the best known is the hardy Virginian spiderwort (*T. virginiana*), which has narrow leaves with purple veins.

Spike Island. Small island of co. Cork, Irish Free State. It lies in Cork Harbour, and on it from 1847-85 was a convict prison.

SPIKENARD (*Nardostachys jatamansi*). Perennial herb of the order Valerianaceae, native of the Himalayas. Sometimes called nard, it has a short, thick, spindle-shaped root-stock, very fragrant, which constituted the spikenard of the ancients. The lance-shaped leaves are tufted, and the small, rosy-purple flowers of the herb are gathered into dense heads.



Spikenard. Left, leaves and flower heads; right, root-stock

SPILSBURY, SIR BERNARD HENRY (b. 1878). British pathologist. He took his medical degree in 1905, and became lecturer in anatomy, forensic medicine, and pathology at various London hospitals, including St. Mary's and St. Bartholomew's. His services were frequently in use by the Home Office in connexion with crime and mystery cases. He wrote extensively on the medical investigation of crimes. He was knighted in 1923.

SPILSBY. Market town of Lincolnshire. It is 17 m. from Boston, on the L.N.E. Rly. The church, a 14th century building, contains monuments of the family of the earl of Ancaster. The town has an old butter cross and a statue of Sir John Franklin, who was born here. There is a trade in agricultural produce. Market day, Mon. Pop. 1,400.

SPINACH (*Spinacia oleracea*). Annual herb of the order Chenopodiaceae. Native of the East, it was introduced to Britain in 1568. As the leaves of the spring sown plants are ready to be picked in from six weeks to two months after sowing, spinach is a good catch crop. It is one of the most easily grown and profitable vegetables. Spinach beet or perpetual spinach is a variety of beetroot grown for its leaves. Pron. spinnidge.



Spinach. Leaves and flowers

SPINAL COLUMN. In vertebrate animals a series of hollow, connected bones enclosing the spinal cord and supporting the trunk. In the human species the spine is composed of 24 separate bones or vertebrae. These are connected with each other by cartilaginous disks, thus permitting of movements between any two vertebrae, and, extended over the column as a whole, allowing a considerable degree of rotation and bending of the body. The spine is not a straight column, but is

curved forwards in the cervical and lumbar regions, and backwards in the dorsal and sacral regions. (See illustration, p. 81.)

The spine serves two functions. It provides a firm pillar, which supports the skull and ribs and enables the body to be maintained in the upright position, and the arches attached to the vertebrae form a continuous canal, in which the spinal cord is lodged and thereby protected from injury.

Curvature of the spine is most frequently due to rickets in childhood, or bad habits when the child is growing rapidly, such as continuous stooping, which may result from sitting at too low a desk at school.

SPINAL CORD. Column of nerve fibres and cells, continuous above with the brain, which extends from the lower border of the large aperture in the base of the skull to the lower border of the first lumbar vertebra, where it terminates in a slender filament. It occupies the canal of the spine and is surrounded by prolongations of the membranes covering the brain, namely the dura mater, arachnoid, and pia mater. A section of the cord shows that it is composed of white matter and grey matter. Thirty-one pairs of nerves are given off from the spinal cord. Disease or injury of the spinal cord most often leads to paralysis. See Brain; Ganglion; Locomotor Ataxia; Nervous System; Paralysis, etc.

SPINDLE TREE (*Euonymus europaeus*). Small tree of the order Celastraceae, native of Europe, W. Siberia, and N. Africa. It grows to a height of about 20 ft. and has smooth grey bark. The fruits are four-lobed crimson capsules, which open to disclose the orange jackets (arillodes) of the few large seeds. The tough wood is of use for making small hard, articles.

SPINEL. In mineralogy, group of minerals containing iron, alumina, magnesia, etc., in varying combinations. The best known are precious spinel or balas ruby, found chiefly in Ceylon, Siam, etc., which forms transparent red crystals; magnetite, a black magnetic spinel; chromite, a dark brown to black variety; pleonaste, another black variety, and rubicelle, yellow or orange in colour.

SPINET (It. spinetta, little thorn). Keyboard instrument of the harpsichord type, but smaller. Like it, the strings were plucked by means of quills. The spinet varied in compass from under four to just five octaves. Early examples were small enough to be placed upon a table when in use, but later and larger specimens stood on legs. It was a favourite household instrument in the 16th-18th centuries. See illus. above.

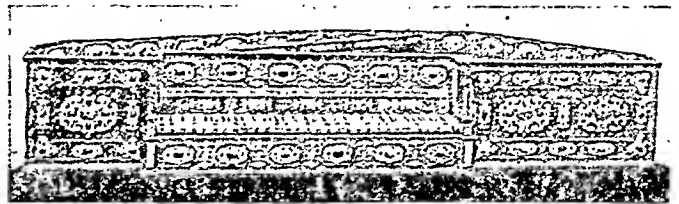
SPINNAKER. Sail set out from the weather side of a vessel and opposite the mainsail. It is used largely in racing yachts. Mostly, the spinnaker is set when the vessel is running before the wind. A spinnaker topsail is a topsail set on a jack yard or short boom. See Ship.

SPINNING. Art of drawing, twisting, and combining animal or vegetable fibres into continuous threads. The simplest method of hand-spinning is by employing the distaff. The spinning wheel, in an

early form, consisted of a stool carrying a large and heavy wheel and a support to carry the spindle, which was belt-driven from the fly-wheel. The spinster maintained the motion of the wheel by strokes of the right hand, and with the left stretched the cord of roving or prepared fibre, first twisting the cord and then winding it on a spindle.

An improved form of wheel was furnished with a treadle to drive the fly-wheel. The spindle was fitted with a flyer to wind the yarn, and carried a bobbin revolving with separate motion. Bobbin and spindle rotated at different speeds. Thus both hands of the spinster were liberated and, the flyer supplying the necessary drag, the twisting of the cord and the winding-on of the yarn continued simultaneously.

The spinning wheel formed the basis of Hargreaves's jenny, which was, in the first instance, an apparatus for enabling one person to spin sixteen or more threads at once. The jenny was turned by hand. Lewis



Spinet. Italian instrument of wood and ivory ornamented with coloured stones, made by Annibale dei Rossi, 1577. See below

Paul, of Birmingham, in 1738, invented the means of superseding human fingers in drawing the sliver, or roving, out finer by passing the material in succession through pairs of rollers. It was in Sir Richard Arkwright's machine, 1769, known as the water-frame, that Paul's invention was first brought into successful employment. See Arkwright, Sir R.; Bobbin; Cotton; Crompton, S.; Distaff; Hargreaves, J.; Loom; Silk; Weaving.

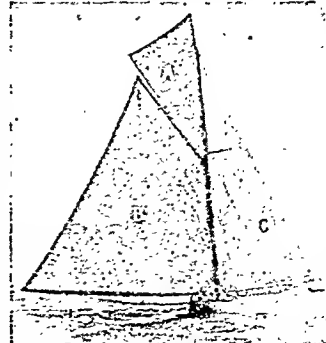
SPINOZA, BARUCH DE (1632-77). Dutch philosopher. Born at Amsterdam, Nov. 24, 1632, of Portuguese-Jewish parentage, he at first studied theology, but his unorthodox views led to his excommunication. He refused a professorship at Heidelberg lest it might interfere with his philosophical studies, and obtained a living by polishing lenses. He died at The Hague, Feb. 21, 1677.



Baruch de Spinoza, Dutch philosopher

Spinoza's philosophy is based upon that of Descartes, but set forth according to a rigorously geometrical method. It is the most perfect form of pantheism. Starting from the definition of substance as that which is in itself and is conceived by itself, he shows that there is only one substance—God the absolutely infinite. According to Spinoza's teaching this infinite substance possesses infinite attributes, of which we only know two, namely thought and extension.

SPION KOP, BATTLE or. Defeat of the British army in the S. African War. Sir Charles Warren crossed the Tugela, and on Jan. 22, 1900, decided to attack Spion Kop, an eminence which formed the centre of the Boer right. On the night of Jan. 23-24 th



Spinnaker. Stern view of a racing cutter, showing her sails. A. Top-sail. B. Mainsail. C. Spinnaker

position was captured, but being very exposed it was abandoned during the next night, the British leaving behind 300 dead.

SPIRAEA. Large genus of perennial herbs and shrubs of the order Rosaceae, natives of the N. temperate and cold regions. British species are dropwort and meadow sweet. The name is used for *Astilbe japonica*.

SPIRES. City of Bavaria, Germany. Also known as Speyer, it is on the left bank of the Rhine, 10 m. S. of Mannheim. The term protestant originated with a protest of the Lutherans at the diet of Spires in 1529. Pop. 25,609. See Protestantism.

SPIRIT. In theology, the life-giving principle. In accordance with a primitive conception, the word in many languages means the breath (e.g. Heb. ruach, Gr. pneuma, Lat. spiritus, anima). God is spirit (John 4, 24), but beliefs differ as to the relation of other spirits to God, some regarding them as from their creation eternally distinct, others holding them to be emanations from the universal Spirit, into which they will be reabsorbed. The N.T. recognizes impure or evil spirits. See Animism; Mind; Psychology; Soul.

SPIRITS. General term for alcoholic liquors above a certain strength. Such liquors include not only those used as drinks, e.g. whisky, brandy, gin, etc., but also those used for lighting, power, and other purposes, e.g. nethylated spirits. The word is also used in chemistry for various solutions, e.g. spirits of hartshorn, a solution of ammonia in water. See Alcohol; Brandy; Distillation; Whisky.

SPIRITUALISM. System of thought or belief in which the possibility is maintained of mutual communication between living persons and discarnate spirits, especially of the dead. What is commonly known as spiritualism originated in 1848 at Hydesville, New York, with rappings alleged to be messages given to two girls named Fox, who afterwards became regular mediums at Rochester, New York. Thence the movement spread very rapidly through the U.S.A., and in 1852 it spread to Britain and the Continent. Spirit-rapping, table-turning, and exhibitions by mediums, accompanied sometimes by "materialisations," had an enormous vogue.

The frequent frauds of paid mediums did much to discredit the movement. With the advance of psychology and psychical research it came to be recognized that many facts uncritically regarded as demonstrating communication from the dead could be referred to other causes. Emotional expectancy creates an atmosphere unfavourable to exact observation, telepathy may account for much, the subconscious mind has been found to possess unsuspected faculties of inference and dramatisation, and dual personality has been the subject of investigation.

In England the London Spiritualist Alliance, the organ of which is *Light*, dates from 1884. Among those who did much to popularise the movement were W. T. Stead (q.v.), and after the Great War, which gave it a powerful impetus, Sir A. Conan Doyle (q.v.). See Psychical Research.

SPIITALFIELDS. Dist. of E. London. In the met. hor. of Stepney (q.v.), it lies between Whitechapel and Mile End New Town, E., and the City and Shoreditch, W. Christ Church is notable for its arched portico. The silk industry was established here by French Huguenot refugees in 1685 and flourished for a century or more. Spitalfields Market for fruit and vegetables dates from the 17th century. In 1928 a new market was opened.

SPIITHEAD. Roadstead off the S. coast of England. It extends for 12 m. N.W. to S.E., between East Cowes and Portsmouth, and communicates from the E. with the Solent and Southampton Water. See Portsmouth.

SPITSBERGEN. Arctic archipelago. Lying some 360 m. N. of Norway, it consists of Mainland or West Spitsbergen; North East Land, Barents, Edge, and Hope Islands on the E.; Prince Charles Foreland on the W., and many smaller islands. Bear Island, 130 m. S.S.E. of Spitsbergen, is generally included in the archipelago. The name of the whole of Norwegian Polar territory, including Spitsbergen, Bear Island, etc., is Svalbard. The total land area is about 25,000 sq. m.

Vegetation is scanty, but bird life is abundant in summer. Land animals include the reindeer, fox, and polar bears. Since its discovery by the Dutch in 1596 Spitsbergen has been the resort of whalers, trappers, and hunters. Since about 1900 the minerals have attracted attention; these include coal, copper, and asbestos. In 1920 Spitsbergen was placed under Norwegian sovereignty.

Spittal. Watery place of Northumberland. It stands at the mouth of the Tweed, opposite Berwick. Pop. 1,900.

SPLEEN. Organ of oblong, flattened form placed in the upper part of the abdomen on the left side. It is about 6 ins. long, 3 ins. broad, and weighs from 6 to 8 ounces. The spleen is the largest of the ductless glands. Its functions are (1) to form white blood corpuscles and, in certain animals, red corpuscles; (2) to disintegrate some of the red blood corpuscles which have discharged their function and are worn out; (3) to take part in nitrogenous metabolism in the formation of uric acid.

SPLEENWORT (*Ceterach officinarum*). Fern of the natural order Polypodiaceae, a native of Europe, W. Asia, and N. and S. Africa.



Spleenwort. Fronds of the sea spleenwort, *Asplenium maritimum*

The fronds are narrow lance-shaped, the two sides cut into semi-elliptic lobes.

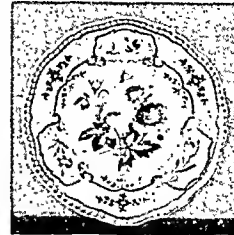
Spleenwort is also used as a popular name for ferns of the extensive genus *Asplenium*. Species found in Britain include the wall rue, maiden-hair spleenwort, black spleenwort, and sea spleenwort (*Asplenium marinum*). See Fern.

SPLINT. Artificial support for limbs when the bones are broken, or weakened or bent by disease. They may be made of wood, leather, zinc, poroplastic material, etc., and are of numerous forms, sizes, and shapes, according to the condition of the limb or the purpose to be achieved. See First Aid.

SPLÜGEN. Alpine pass between Switzerland and Italy. Its height is 6,945 ft. There is a carriage road between Chiavenna and Coire, connecting the valley of the farther or hinter Rhine with that of Lako Como.

SPODE. Variety of chinaware. In 1770 Josiah Spode began to make felspar porcelain at Stoke-upon-Trent. He introduced crushed bone into its composition, which was a soft paste, giving a very transparent body. Spode's

shapes were good, and his pieces rather highly decorated with flowers and gilding. His firm became one of the leading houses in the trade. See Pottery.



Spode. Plate of this delicate decorated porcelain. Herbert Allen Collection, Victoria & Albert Museum

was a member of the first Australian team to come to England in 1878, and during the tour he took from start to finish 764 wickets (including 326 in England) for 608 runs each. In 1884, his greatest season with the ball, he took 218 wickets in first-class cricket for an average of 12.53 per wicket. He died June 4, 1926.

SPOHR, LOUIS OR LUDWIG (1784-1859). German composer. Born at Brunswick.

April 5, 1784, he entered the court orchestra at Brunswick in 1798. He toured extensively in Germany, visited England in 1820, conducting Philharmonic Society concerts with success, and was court conductor at Cassel from 1822-57. He died there on Oct. 22, 1859. His two hundred works include eleven operas, several oratorios, notably *The Last Judgement*, 1826, nine symphonies, some chamber music, and violin music of considerable interest. His violin course, still a standard work, was published in 1831.

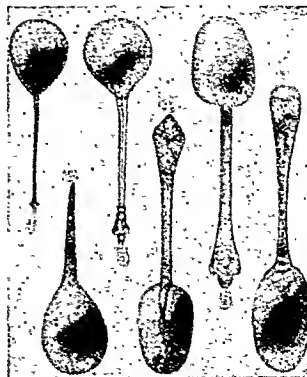
SPOGE. Name for lowly animals comprised in the phylum Porifera. Many occur in colonies, but some are simple individuals. A simple sponge consists of a short tube, attached at the base, and with an opening at the top. The body wall is pierced by pores through which water enters the cavity and is then expelled at the top. There is an intermediate layer or layers of jelly and cells between the inner and outer integuments. There are no internal organs, but part of the body cavity is lined with specialised cells which catch and absorb the minute organisms brought in with the water. Other cells are specialised for reproductive functions, and still others secrete minute flinty or calcareous spicules.

The sponge fishery is carried on by trawling and the use of pronged forks; but the best sponges are obtained by diving.

SPOON (A.S. spon, a chip of wood). Implement consisting of a small bowl with a



Sponge. Bottom, alive. Top, as prepared for commerce. Dr. C. M. Yonge



Spoon. 1. Pewter, 15-16th century. 2. Horn, 16-17th cent. 3 and 5. Latten, 17th cent. 4. Pewter, 17th cent. 6. Pewter, 18th cent. Guildhall Museum, London

handle, used primarily for conveying liquid or soft food to the mouth. The ancient Egyptians made spoons of ivory, flint, etc.; the Greeks and Romans used metal. *See* Apostle.

SPOONBILL (*Platalea leucorodia*). Bird, related to the ibis. It is rare in Great Britain. It is about 32 ins. long, and has white plumage with a tinge of buff on the neck. The long flat beak is black with the exception of the tip, which is yellow. It widens out at the tip somewhat like a spoon. The legs are long, and the general form of the bird is suggestive of a heron. It is always found near water, usually in marshes.



Spoonbill. Flat-beaked marsh bird

SPOONERISM. In speech the involuntary transformation of the initial letters of two adjacent words. It owes its name to the Rev. W. A. Spooner (1844-1930), warden of New College, Oxford, who is regarded as the author of many of them. An example is "A half-warmed fish," when the speaker intended to say "A half-formed wish."

SPORADES. Greek islands in the Aegean Sea. They lie E. of the Cyclades, and include Astropalia and Patmos. Formerly they were Turkish, but during the Turco-Italian war Italy seized 12 of them, and during the Balkan war Greece occupied the remainder. By the treaty of peace (1919) they became Greek.

SPORE. Reproductive cell of plants. Reproduction by spores is one of the most prominent causes of plant growth, and may be asexual or sexual. The spores of many plants, as fungi, are light and easily carried through the air by the wind, while others are so constructed as to cling to passing animals, etc. Most consist of a hard outer and a delicate inner wall. *See* Cell; Fungus; Moss; Seed.

SPOROZOA. Parasitic protozoa. They form important and widespread organisms, and include malaria germs, Texas cattle-fever germs, tsetse disease, etc. Living by absorption of the fluid juices of the tissues of their host, sporozoa develop from spores which break up into small bodies or sporozoites, and before their life cycle is complete they must leave their original host for a second host. Thus the sporozoites of malaria are developed in mosquitoes and are then transferred to man. *See* Malaria; Mosquito; Parasite.

SPRAIN or **STRAIN**. Tearing or stretching of the synovial membrane of a joint or of ligaments, resulting from sudden violence applied to the joint. Inflammatory effusion, swelling, and pain follow. The joint should immediately be supported with a firm, wet bandage, and the limb kept quiet and raised. *See* First Aid; Massage.

SPRAT (*Clupea sprattus*). Small European fish of the herring family, common in British seas. It varies in length from three to five inches when adult, the young being known as whitebait. Sprats occur largely in brackish water about river estuaries; but spawning takes place at sea. The fishery is of importance in the late autumn, seines, drift nets, and stow nets being used for the purpose.

SPRIGG, SIR JOHN GORDON (1830-1913). S. African statesman. The son of a Baptist minister at Ipswich, he settled in 1858 in Cape Colony, where he became a journalist and politician. He entered the house of assembly in 1873, and became prime minister five years later, resigning in 1881. Prime minister again, 1880-90, 1896-98, and 1900-4, he



Sprat. Small variety of herring caught off the British coasts

was defeated at the elections in the latter year and retired from politics. Sprigg was knighted in 1902, and died Feb. 4, 1913.

SPRINGBOK (*Gazella euchores*). Species of gazelle found in S. Africa. It stands about 30 ins. high, and has cinnamon-yellow hair with white under parts and a line of white hair along the back. The horns are lyre-shaped and about 15 ins. long. *See* illus. below.

SPRINGFIELD. City of Massachusetts, U.S.A. It stands on the Connecticut river, 100 m. by rly. W. by S. of Boston, and is served by the Boston and Maine and other rlys. Educational institutions include the American International College and the Y.M.C.A. College. Industries include the manufacture of electric cars, motor vehicles, cotton and woolen goods, electrical appliances, cigars and tobacco, machinery and confectionery. Abraham Lincoln is buried here. Pop. 142,065.

Spring Hill. Town of Nova Scotia, Canada. It is 75 m. due N.N.W. of Halifax, and is in a colliery district. Pop. 5,681.

SPRING-RICE, SIR CECIL ARTHUR (1859-1918). British diplomat. Born Feb. 27, 1859, and educated at Eton and Oxford, he joined the staff of the British embassy at Washington in 1886, and later served at Tokyo, Teheran, Cairo, and St. Petersburg. In 1908, having been knighted, he was appointed minister to Sweden, and in 1913 British ambassador to the United States. During the Great War he handled the delicate situation due to America's neutrality, 1914-17, with much tact, dealt ably with the treatment of neutrals and neutral shipping, and conducted the British side of the negotiations leading up to America's participation in the war. He died at Ottawa, Feb. 14, 1918.

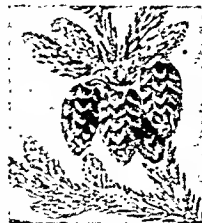
SPRINGTAIL. Sub-order (Collembola) of small wingless insects, which have a forked organ turned forwards under the abdomen. When this is suddenly released it strikes the surface on which the insect is standing and so throws it up into the air. They are common under stones and bark. Some of the species are aquatic, and one, known as the glacier flea, is fairly common on the ice in the Alps.

SPRINTING. Short distance running. The sprint is regarded as one of the most strenuous of athletic events. Although the most popular sprint distance is 100 yards, races of 60 yards, 75 yards, 120 yards, 220 yards, and even 440 yards are also classed as sprint races. The practice of short bursts of speed, from 30 to 40 yards, the maintenance of a long stride, and speed in getting off the mark are important factors in sprinting.

The world's professional record is held by J. Donaldson, who accomplished 93 secs. in 1910. For several years 9½ secs. has stood as the world's amateur record. *See* Running.

SPROCKET. In machinery, a tooth or projection on the circumference of a wheel. A sprocket wheel is one with cogs to engage with the links of a chain, as in the driving-wheel of an ordinary bicycle.

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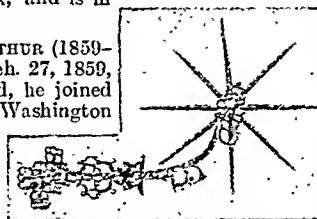


Spruce. Cones and leaves of the black spruce

SPUR (A.S. *spura*). Sharp instrument fitted to the heel of a rider, to press into the side of a horse to urge it on. Modern spurs usually have rowels or little wheels edged with sharp points. At one time gold spurs were a sign of knighthood.

The battle of the spurs was fought near Théroutan, Aug. 16, 1513. It was only a cavalry skirmish between the English and some French knights.

SPURGE (*Euphorbia*). Large genus of trees, shrubs, and herbs of the order Euphorbiaceae, natives of all except extremely cold climates. Most of them have milky acrid juice, and many are succulent like cacti. Few of them have conspicuous flowers but in some species the yellow blossoms are surrounded by large bracts, which are brilliantly coloured red. Some of the European species are mere weeds of cultivated ground. The wood spurge is a shrublike perennial with large persistent leaves. Cypress spurge is another European species.



Spur. Ornamented spur of the sixteenth century

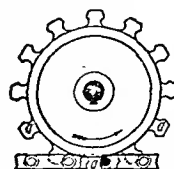
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Spurn Head. A promontory on the E. coast of Yorkshire (E.R.). It extends 2½ miles, into the estuary of the Humber.



Sprocket wheel, with cogs a, a, a

SQUADRON. Military term for a cavalry unit. In the British army the cavalry regiment is divided into four squadrons. The

position was captured, but being very exposed it was abandoned during the next night, the British leaving behind 300 dead.

SPIRAEA. Large genus of perennial herbs and shrubs of the order Rosaceae, natives of the N. temperate and cold regions. British species are dropwort and meadow sweet. The name is used for *Astilbe japonica*.

SPIRES. City of Bavaria, Germany. Also known as Speyer, it is on the left bank of the Rhine, 10 m. S. of Mannheim. The term protestant originated with a protest of the Lutherans at the diet of Spire in 1529. Pop. 25,809. See Protestantism.

SPIRIT. In theology, the life-giving principle. In accordance with a primitive conception, the word in many languages means the breath (e.g. Heb. ruach, Gr. pneuma, Lat. spiritus, anima). God is spirit (John 4, 24), but beliefs differ as to the relation of other spirits to God, some regarding them as from their creation eternally distinct, others holding them to be emanations from the universal Spirit, into which they will be reabsorbed. The N.T. recognizes impure or evil spirits. See Animism; Mind: Psychology; Soul.

SPIRITS. General term for alcoholic liquors above a certain strength. Such liquors include not only those used as drinks, e.g. whisky, brandy, gin, etc., but also those used for lighting, power, and other purposes, e.g. methylated spirits. The word is also used in chemistry for various solutions, e.g. spirits of hartshorn, a solution of ammonia in water. See Alcohol; Brandy; Distillation; Whisky.

SPIRITUALISM. System of thought or belief in which the possibility is maintained of mutual communication between living persons and discarnate spirits, especially of the dead. What is commonly known as spiritualism originated in 1848 at Hydesville, New York, with rappings alleged to be messages given to two girls named Fox, who afterwards became regular mediums at Rochester, New York. Thence the movement spread very rapidly through the U.S.A., and in 1852 it spread to Britain and the Continent. Spirit-rapping, table-turning, and exhibitions by mediums, accompanied sometimes by "materialisations," had an enormous vogue.

The frequent frauds of paid mediums did much to discredit the movement. With the advance of psychology and psychological research it came to be recognized that many facts uncritically regarded as demonstrating communication from the dead could be referred to other causes. Emotional expectancy creates an atmosphere unfavourable to exact observation, telepathy may account for much, the subconscious mind has been found to possess unsuspected faculties of inference and dramatisation, and dual personality has been the subject of investigation.

In England the London Spiritualist Alliance, the organ of which is *Light*, dates from 1884. Among those who did much to popularise the movement were W. T. Stead (q.v.), and after the Great War, which gave it a powerful impetus, Sir A. Conan Doyle (q.v.). See Psychological Research.

SPIITALFIELDS. Dist. of E. London. In the met. bor. of Stepney (q.v.), it lies between Whitechapel and Mile End New Town, E., and the City and Shoreditch, W. Christ Church is notable for its arched portico. The silk industry was established here by French Huguenot refugees in 1685 and flourished for a century or more. Spitalfields Market for fruit and vegetables dates from the 17th century. In 1928 a new market was opened.

SPLITHEAD. Roadstead off the S. coast of England. It extends for 12 m. N.W. to S.E., between East Cowes and Portsmouth, and communicates from the E. with the Solent and Southampton Water. See Portsmouth.

SPITSBERGEN. Arctic archipelago. Lying some 360 m. N. of Norway, it consists of Mainland or West Spitsbergen; North East Land, Barents, Edge, and Hope Islands on the E.; Prince Charles Foreland on the W., and many smaller islands. Bear Island, 130 m. S.S.E. of Spitsbergen, is generally included in the archipelago. The name of the whole of Norwegian Polar territory, including Spitsbergen, Bear Island, etc., is Svalbard. The total land area is about 25,000 sq. m.

Vegetation is scanty, but bird life is abundant in summer. Land animals include the reindeer, fox, and polar bears. Since its discovery by the Dutch in 1596 Spitsbergen has been the resort of whalers, trappers, and hunters. Since about 1900 the minerals have attracted attention; these include coal, copper, and asbestos. In 1920 Spitsbergen was placed under Norwegian sovereignty.

Spittal. Watering place of Northumberland. It stands at the mouth of the Tweed. opposite Berwick. Pop. 1,900.

SPLEEN. Organ of oblong, flattened form placed in the upper part of the abdomen on the left side. It is about 6 ins. long, 3 ins. broad, and weighs from 6 to 8 ounces. The spleen is the largest of the ductless glands. Its functions are (1) to form white blood corpuscles and, in certain animals, red corpuscles; (2) to disintegrate some of the red blood corpuscles which have discharged their function and are worn out; (3) to take part in nitrogenous metabolism in the formation of uric acid.

SPLEENWORT (*Ceterach officinarum*). Fern of the natural order Polypodiaceae, a native of Europe W. Asia, and N. and S. Africa.

The fronds are narrow lance-shaped, the two sides cut into semi-elliptic lobes.

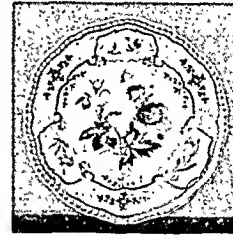
Spleenwort is also used as a popular name for ferns of the extensive genus *Asplenium*. Species found in Britain include the wall rue, maiden-hair spleenwort, black spleenwort, and sea spleenwort (*Asplenium marinum*). See Fern.

SPLINT. Artificial support for limbs when the bones are broken, or weakened or bent by disease. They may be made of wood, leather, zinc, poroplastic material, etc., and are of numerous forms, sizes, and shapes, according to the condition of the limb or the purpose to be achieved. See First Aid.

SPLÜGEN. Alpine pass between Switzerland and Italy. Its height is 6,945 ft. There is a carriage road between Chiavenna and Coire, connecting the valley of the farther or hinter Rhine with that of Lake Como.

SPODE. Variety of chinaware. In 1770 Josiah Spode began to make felspar porcelain at Stoke-upon-Trent. He introduced crushed bone into its composition, which was a soft paste, giving a very transparent body. Spode's

shapes were good, and his pieces rather highly decorated with flowers and gilding. His firm became one of the leading houses in the trade. See Pottery.



Spode. Plate of this delicate decorated porcelain. Herbert Allen Collection, Victoria & Albert Museum

was a member of the first Australian team to come to England in 1878, and during the tour he took from start to finish 764 wickets (including 326 in England) for 608 runs each. In 1884, his greatest season with the ball, he took 218 wickets in first-class cricket for an average of 12.53 per wicket. He died June 4, 1926.

SPOHR, LOUIS OR LUDWIG (1784-1859). German composer. Born at Brunswick.

April 5, 1784, he entered the court orchestra at Brunswick in 1798. He toured extensively in Germany, visited England in 1820, conducting Philharmonic Society concerts with success, and was court conductor at Cassel from 1822-57. He died there on Oct. 22, 1859. His two hundred works include eleven operas, several oratorios, notably *The Last Judgement*, 1826, nine symphonies, some chamber music, and violin music of considerable interest. His violin course, still a standard work, was published in 1831.

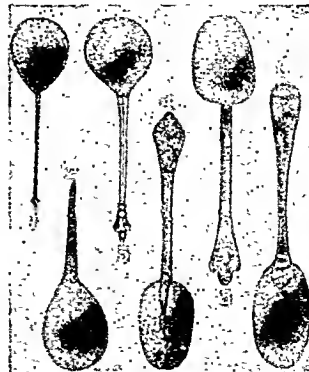
SPONGE. Name for lowly animals comprised in the phylum Porifera. Many occur in colonies, but some are simple individuals. A simple sponge consists of a short tube, attached at the base, and with an opening at the top. The body wall is pierced by pores through which water enters the cavity and is then expelled at the top. There is an intermediate layer or layers of jelly and cells between the inner and outer integuments. There are no internal organs, but part of the body cavity is lined with specialised cells which catch and absorb the minute organisms brought in with the water. Other cells are specialised for reproductive functions, and still others secrete minute flinty or calcareous spicules.

The sponge fishery is carried on by trawling and the use of pronged forks; but the best sponges are obtained by diving.

SPOON (A.S. spon, a chip of wood). Implement consisting of a small bowl with a



Sponge. Bottom, alive. Top, as prepared for commerce. Dr. C. M. Yonge



Spoon. 1. Pewter, 15-16th century. 2. Horn, 16-17th cent. 3 and 5. Latten, tinned, 17th cent. 4. Pewter, 17th cent. 6. Pewter, 18th cent. Guildhall Museum, London

handle, used primarily for conveying liquid or soft food to the mouth. The ancient Egyptians made spoons of ivory, flint, etc.; the Greeks and Romans used metal. See Apostle.

SPOONBILL (*Platalea leucorodia*). Bird, related to the ibis. It is rare in Great Britain. It is about 32 ins. long, and has white plumage with a tinge of buff on the neck. The long flat beak is black with the exception of the tip, which is yellow. It widens out at the tip somewhat like a spoon. The legs are long, and the general form of the bird is suggestive of a heron. It is always found near water, usually in marshes.



Spoonbill. Flat-beaked marsh bird

SPONDERISM. In speech the involuntary transformation of the initial letters of two adjacent words. It owes its name to the Rev. W. A. Spooner (1844-1930), warden of New College, Oxford, who is regarded as the author of many of them. An example is "A half-warmed fish," when the speaker intended to say "A half-formed wish."

SPORADES. Greek islands in the Aegean Sea. They lie E. of the Cyclades, and include Astropalia and Patmos. Formerly they were Turkish, but during the Tureo-Italian war Italy seized 12 of them, and during the Balkan war Greece occupied the remainder. By the treaty of peace (1919) they became Greek.

SPORE. Reproductive cell of plants. Reproduction by spores is one of the most prominent causes of plant growth, and may be asexual or sexual. The spores of many plants, as fungi, are light and easily carried through the air by the wind, while others are so constructed as to cling to passing animals, etc. Most consist of a hard outer and a delicate inner wall. See Cell; Fungus; Moss; Seed.

SPOROZOA. Parasitic protozoa. They form important and widespread organisms, and include malaria germs, Texas cattle-fever germs, tsetse disease, etc. Living by absorption of the fluid juices of the tissues of their host, sporozoa develop from spores which break up into small bodies or sporozoites, and before their life cycle is complete they must leave their original host for a second host. Thus the sporozoites of malaria are developed in mosquitoes and are then transferred to man. See Malaria; Mosquito; Parasite.

SPRAIN OR STRAIN. Tearing or stretching of the synovial membrane of a joint or of ligaments, resulting from sudden violence applied to the joint. Inflammatory effusion, swelling, and pain follow. The joint should immediately be supported with a firm, wet bandage, and the limb kept quiet and raised. See First Aid; Massage.

SPRAT (*Clupea sprattus*). Small European fish of the herring family, common in British seas. It varies in length from three to five inches when adult, the young being known as whitebait. Sprats occur largely in brackish water about river estuaries; but spawning takes place at sea. The fishery is of importance in the late autumn, seines, drift nets, and stow nets being used for the purpose.

SPRIGG, SIR JOHN GORDON (1830-1913). S. African statesman. The son of a Baptist minister at Ipswich, he settled in 1858 in Cape Colony, where he became a journalist and politician. He entered the house of assembly in 1873, and became prime minister five years later, resigning in 1881. Prime minister again, 1886-90, 1896-98, and 1900-4, he



Sprat. Small variety of herring caught off the British coasts

was defeated at the elections in the latter year and retired from politics. Sprigg was knighted in 1902, and died Feb. 4, 1913.

SPRINGBOK (*Gazella euclora*). Species of gazelle found in S. Africa. It stands about 30 ins. high, and has cinnamon-yellow hair with white under parts and a line of white hair along the back. The horns are lyre-shaped and about 15 ins. long. See illus. below.

SPRINGFIELD. City of Massachusetts, U.S.A. It stands on the Connecticut river, 100 m. by rly. W. by S. of Boston, and is served by the Boston and Maine and other rlys. Educational institutions include the American International College and the Y.M.C.A. College. Industries include the manufacture of electric cars, motor vehicles, cotton and woolen goods, electrical appliances, cigars and tobacco, machinery and confectionery. Abraham Lincoln is buried here. Pop. 142,065.



Springbok. Gazelle inhabiting South Africa. See above

Spring Hill. Town of Nova Scotia, Canada. It is 75 m. due N.N.W. of Halifax, and is in a colliery district. Pop. 5,681

SPRING-RICE, SIR CECIL ARTHUR (1859-1918). British diplomat. Born Feb. 27, 1859, and educated at Eton and Oxford, he joined the staff of the British embassy at Washington in 1886, and later served at Tokyo, Teheran, Cairo, and St. Petersburg. In 1908, having been knighted, he was appointed minister to Sweden, and in 1913 British ambassador to the United States. During the Great War he handled the delicate situation due to America's neutrality, 1914-17, with much tact, dealt ably with the treatment of neutrals and neutral shipping, and conducted the British side of the negotiations leading up to America's participation in the war. He died at Ottawa, Feb. 14, 1918.

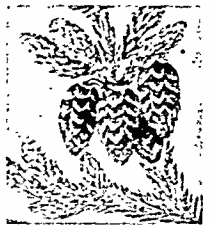
SPRINGTAIL. Sub-order (Collembola) of small wingless insects, which have a forked organ turned forwards under the abdomen. When this is suddenly released it strikes the surface on which the insect is standing and so throws it up into the air. They are common under stones and bark. Some of the species are aquatic, and one, known as the glacier flea, is fairly common on the ice in the Alps.

SPRINTING. Short distance running. The sprint is regarded as one of the most strenuous of athletic events. Although the most popular sprint distance is 100 yards, races of 60 yards, 75 yards, 120 yards, 220 yards, and even 440 yards are also classed as sprint races. The practice of short hursts of speed, from 30 to 40 yards, the maintenance of a long stride, and speed in getting off the mark are important factors in sprinting.

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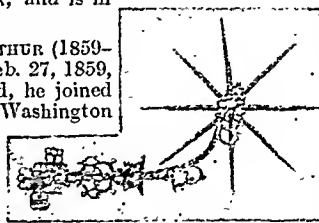


spruce. Cones and leaves of the black spruce

SPUR (A.S. *spura*). Sharp instrument fitted to the heel of a rider. To press into the side of a horse to urge it on. Modern spurs usually have rowels or little wheels edged with sharp points. At one time gold spurs were a sign of knighthood.

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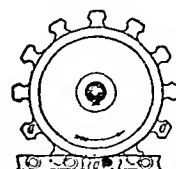
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Spurn Head. A promontory on the E. coast of Yorkshire (E.R.). It extends 2½ miles into the estuary of the Humber.

SQUADRON. Military term for a cavalry unit. In the British army the cavalry regiment is divided into four squadrons. The

squadron is composed of two troops consisting of 120 to 200 men. In the naval sense a squadron is any number of vessels under the command of an officer of flag rank. In the Royal Air Force a squadron is commanded by an officer known as a squadron leader, his rank being equivalent to that of lieutenant-commander in the navy and major in the army.

SQUASH (*Cucurbita maxima*). Annual herb of the order Cucurbitaceae. A trailing plant, like the vegetable marrow, its fruits are fleshy and edible. See Gourd; Pumpkin.

SQUASH RACKETS. Game played in a similar manner to ordinary rackets, but on a considerably smaller court, which confines the game to two persons. The ball is of india-rubber, the size of a fives ball. The walls of the court are either of smooth wood or of cement, and the game is much slower than rackets. Squash is governed by most of the rules appertaining to single rackets. Successful play depends on the accurate placing of the ball. There are courts at Lord's, Queen's Club, the Bath, etc. See Rackets.

SQUID. Name popularly given to the genus *Loligo* of the cuttles, found around the British coasts. The common species

(*L. forbesii*) has a rather long, cylindrical body, a short head surrounded by tentacles, and two triangular "fins" on the hinder portion of the body. Active animals, able to swim rapidly backwards by expelling water from their siphons, they feed upon small molluscs and crustaceans. See Cephalopoda; Cuttle; Flying Squid.

SQUINT. Defect of the eye. In squinting, or strabismus, the visual axis of one of the eyes deviates from its proper position, with the result that the two visual axes cannot be directed simultaneously upon the same point.

SQUIRES, SIR RICHARD ANDERSON (b. 1880). Newfoundland politician. Born Jan. 18, 1880, at Harbour Grace, he went to the university at Halifax and became a lawyer in 1902. In 1909 he was elected to the House of Assembly, and in 1914 was made minister of justice and attorney-general. He returned to office in 1917 as secretary of state, and in 1919 became prime minister, a post he held until 1923. In 1921 he was knighted. In 1928 Squires again became premier, and as such he attended the Imperial Conference held in London in Oct.-Nov., 1930.



Sir R. A. Squires,
Newfoundland
politician

SQUIRREL (Gr. *skia*, shadow; *oura*, tail). Genus of small rodents of the family *Sciuridae*. The common squirrel (*Sciurus vulgaris*) occurs throughout Europe and N. Asia. The British variety is 8 ins. long in body, with a tail of 7 ins. In the winter the coat is brownish red on the head and back, grey at the sides, chestnut on the limbs, dark reddish-brown on the tail, and white on the under parts; and the ear-tufts are long and conspicuous. In summer the grey disappears.



Squirrel. 1. Common red species. 2. American grey squirrel

Squirrels spend most of their time in the trees, and on the ground progress by bounds. They build nests in hollows of trees, in which to rear the young. Large stores of nuts, etc., are laid up for the cold season. The grey squirrel (*S. cinereus*) is a N. American species. See Chipmunk; Flying Squirrel; Prairie Dog; Sable.

SQUIRTING CUCUMBER (*Ecballium elaterium*). Annual herb of the order Cucurbitaceae, native of the Mediterranean region. It has trailing stems, and heart-shaped leaves with toothed margins. The flowers are yellow, and the fruit is a small green prickly gourd. When ripe, the fruit parts from its stalk and violently ejects its seeds, together with the thin pulp surrounding them, through the base.

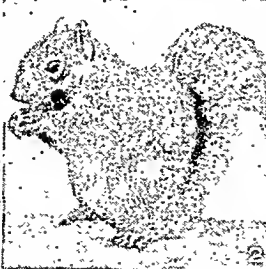
SRINAGAR. Capital of the state of Kashmir, India. It stands on both banks of the Jhelum, over 5,000 ft. above sea level, 175 m. N.N.E. of Lahore, in the vale of Kashmir. The town was formerly the hot weather capital of the Mogul emperors. Pop. 141,735.

STABILIZATION. The basing of a nation's currency on a recognized and real standard of value, usually gold. After the Great War the currencies of most European states fell into chaos, the mark and krone becoming almost worthless.

Stabilization was thus necessary, and in 1924 Germany placed her currency on a gold basis, i.e. gave the mark a definite value in gold. Italy stabilized the lire in 1927, and France the franc in 1928.

STADIUM (Gr. *stadion*). Greek measure of length equivalent to about 582·5 English feet. This was the distance of the short race at Olympia, and the name came to be applied, first to the race, and then to a building in which the racing and other contests took place. The stadium at Olympia was rectangular, but most of the others had one semicircular end. A stadium was erected at Shepherd's Bush, London, for the Olympic Games in 1908. One at Wembley was opened in 1923. See Amphitheatre; Circus; also *illus.* above.

STADTHOLDER (Dutch *stadhouder*, substitute, deputy). Chief magistrate of the United Netherlands. The title was originally given to the representatives of the Spanish crown in the Netherlands. After the revolt of the seven states from Spain, 1579, Friesland elected John of Orange as stadtholder, while the six remaining states chose his brother, William the Silent (q.v.). The authority of the stadtholders was based solely on the powers delegated to them by the states.

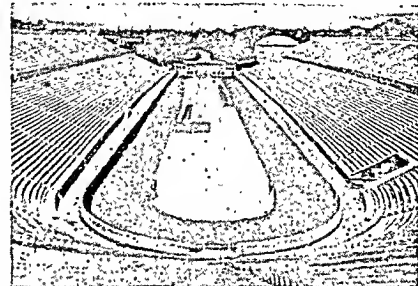


STAËL, ANNE LOUISE GERMAINE, BARONNE DE (1766-1817). French writer. She was born in Paris, April 22, 1766, daughter of the financier Necker, and became the wife of the Swedish minister, the Baron de Staël-Holstein. Driven from France by the Revolution, she retired to her father's estate at Coppet, near Geneva, and though she returned to Paris in 1797, she was presently exiled by Napoleon. M. de Staël died in 1802, and in 1811 his widow married a Swiss officer, Albert de Rocca. She settled in Paris on the fall of the Empire, and she died there, July 14, 1817.

Madame de Staël's principal works are her early *Lettres sur Rousseau*, 1788, and two sentimental novels, *Delphine*, 1802, and *Corinne*, 1807.

STAFF. In the military sense, a group of officers of various ranks serving at the headquarters of a military unit larger than a regiment. They serve under the officer commanding the unit, and are engaged in administrative or executive duties connected with the various branches. The general staff is that for the army, navy, or air force as a whole.

A staff college is an institution where officers are specially trained in the subjects required



Stadium. Reconstruction of the old Athenian stadium erected for the Olympic Games at Athens, 1900

for staff appointments. The staff college for the British army is at Camberley. There is a staff college for the R.A.F. at Andover. The naval staff college is at Greenwich.

STAFFA. Island of the Inner Hebrides, Argyllshire. Lying 6 m. N. of Iona, it is 71 acres in extent. Its coast is remarkable for caverns, the most notable being Fingal's Cave, the entrance to which is columnar basalt.

STAFFORD. Borough and county town of Staffordshire. It stands on the river Sow, 23 m. from Birmingham, on the L.M.S. and L.N.E. Rlys. The principal churches are S. Mary's and S. Chad's. Notable old houses include High House and the Swan Hotel. Stafford Castle occupies the site of an ancient stronghold. Stafford is a rly. centre. Boots are manufactured, and there are engineering works. Pop. 28,635.

STAFFORD, EARL AND MARQUESS OF. English titles borne by the families of Stafford, Howard, and Leveson-Gower. Edmund de

Stafford became a baron in 1299, and his son, Ralph, was in 1351 created earl of Stafford. Humphrey, the 6th earl, was made duke of Buckingham. The titles became extinct when the 3rd duke was executed in 1521. In 1547 the duke's eldest son, Henry, was made Lord Stafford, and in 1640 the barony, and later a viscountcy, was given to Mary Stafford and her husband, Sir William Howard. Denounced by Titus Oates for participation in the Popish Plot, Howard was executed in 1680.

The title of marquess of Stafford dates from 1758, when it was bestowed upon Earl Gower. His son, the 2nd marquess, was made duke of Sutherland (q.v.).

Stafford House. London mansion housing the London Museum (q.v.) and now known as Lancaster House.

STAFFORDSHIRE. County of England. Its area is 1,158 sq. m. The surface is low or undulating save in the N., where the Pennines enter it, and on Cannock Chase. Axe Edge, on



Viscount Stafford,
English nobleman
After Van Dyck



Mme. de Staël
French writer
After P. L. Bowyer

the Derbyshire border, is 1,684 ft. high. The chief river is the Trent. Rudyard Lake is in the county. In the N. are the Potteries; in the centre is Cannock Chase; and in the S. is part of the Black Country. The chief branches of agriculture are rearing of cattle, cultivation of wheat; barley, oats, and dairy farming. The county is served by L.M.S. and L.N.E. Rlys.

Stafford is the county town, others including Stoke-upon-Trent, Wolverhampton, Walsall, Burton-upon-Trent, Lichfield, and Leek. In the co. are part of Dove Dale, Tutbury and Chartley, and Needwood, and the mansion of Beaudesert. Staffordshire is in the diocese of Lichfield. Pop 1,348,877.

STAG. Male of the red deer (*Cervus elaphus*). It is distinguished from the hind, or female, by the presence of antlers on the head, and is of larger size. See Deer.

STAG BEETLE (*Lucanus cervinus*). Popular name for a large lamellicorn beetle. The male has large mandibles, which bear some resemblance to the antlers of a stag. The largest British species of beetle, being sometimes over two inches long in body, it occurs locally in the S. counties of England; and the larvae live in decaying oak trees. See Coleoptera; also illus. p. 223.

STAGE COACH. Public horse-drawn conveyance, plying regularly by stages between two towns. It was a large four-wheeled covered carriage, with seats inside and out, a guard's dicky, and a boot or receptacle for luggage, mails, and parcels, and was drawn by from two to eight horses. A coach between London and Bristol, put on the road by John Palmer, M.P., Aug. 8, 1784, was the first to carry mails. After this there was a steady improvement; lighter vehicles, the so-called flying coaches, were introduced, and a speed of 12 m. an hour was often attained. The advent of the rly. made them obsolete.

STAGGERS. Complaint affecting horses and sheep. It is characterised by trembling, swaying, or falling due to imperfect coordination of the voluntary muscles, and has various origins. See Horse; Sheep.

STAGHOUND. Name given to several breeds of hounds used for hunting the stag. The old English staghound, now thought to be extinct, was a variety of bloodhound, a large heavy animal with short broad head, pendent ears, dewlap, and heavily fringed tail. There were two strains, the northern and southern. The modern staghound is a large foxhound (q.v.) trained for the special work of stag-hunting. The name staghound is also some times given to the Scottish deerhound.

STAGHUNTING. This is a form of the chase common from ancient times in England and other lands. The deer in England which are hunted with hounds are the red deer on Exmoor, in Yorkshire, and in the New Forest; the fallow buck in the New Forest; and the roe deer in Dorset. Carted deer are also hunted in various districts. Stags are hunted from Aug. 12 to Oct 8, hinds from Nov. to Christmas or later. See Deer Stalking.

STAINED GLASS. Glass coloured by the introduction of certain metallic oxides or chlorides, the colours being fused into its surface at a moderate heat. Crown glass, made with only a little alkali, is most suitable. Stained glass has been used for windows of churches since the 6th century A.D., when S. Gregory is recorded to have inserted coloured windows in the church of S. Martin of Tours.

An important school of glass painting is believed to have existed near Chartres, France, in the 12th century, and there was probably a close connexion between this and the English glass centre at Canterbury. Early painted windows were made by the mosaic method, each colour being represented by a separate piece of glass, kept in position by ties of lead.

The late Gothic period, which nearly synchronised with the 15th century, is regarded

as the best period in England for stained glass. White canopy work became more elaborate; white and colour were admirably mixed. Costumes and faces were often left white. New College, Oxford, Gloucester Cathedral, York Minster, Great Malvern Abbey, the church of S. Mary, Shrewsbury, and Fairford church, Gloucestershire, contain some specimens of this period. See Rose Window.

STAINER, SIR JOHN (1840-1901). British composer. Born in London, June 6, 1840, he was a chorister in S. Paul's Cathedral, 1847-56, and in 1859 went to Oxford as university organist. He was organist of S. Paul's Cathedral, 1872-88, and, knighted in 1888, became professor of music at Oxford in 1889. He died March 31, 1901. Among his works are the oratorio Gideon, the cantatas The Daughter of Jairus, 1878, and The Crucifixion, 1887. Stainer was part editor of a Dictionary of Musical Terms, 1876.

STAINES. Urban dist. of Middlesex. On the Thames, where the Colne flows into it, 19 m. from London, it is served by the G.W. and Southern Rlys. The stone bridge across the Thames, by Rennie, was opened in 1832. The trial of Sir Walter Raleigh in 1603 took place in the old market house here. Near is Runnymede (q.v.). Pop. 7,709.

STAINLAND. Urban dist. of Yorkshire (W.R.). It is 3 m. from Halifax, on the L.M.S. Rly. The industries include the manufacture of woollens and worsted goods. Pop. 4,520.

Stainless Steel. Form of steel which is alloyed with chromium, etc., and thus rendered incoerodible. See Steel.

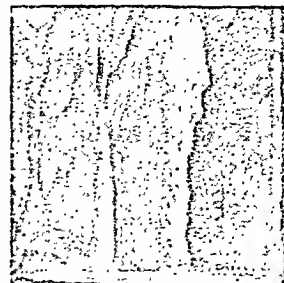
STAIRS OR STAMCASE. Part of a building containing steps, leading from one floor to another, or from the ground to the entrance.

The ornamental staircase dates only from the latter part of the 16th century. Although the corkscrew or spiral type was still retained in places, and certain splendid mansions, such as Hardwicke Hall, were provided with nothing more elaborate than plain flights of steps, the broad wooden staircase, with short flights connecting the landings, became the general rule. These were stoutly constructed with thick wooden balusters and massive handrails, the newels being carried up very high and finished with decorative finials. In the 18th century the whole construction became very much lighter in character. See Baluster; Escalator; Finial.



Staffordshire. Map of this midland county. See p. 1274

STALACTITE. Calcareous mass, usually conical or cylindrical in shape, formed by drippings from the roofs of caves. Water which



Stalactites and stalagmites in Cox's Cavern, Cheddar

has passed through lime-stone contains dissolved carbonate of lime. This water may find its way to the roof of a cave, and thence drip to the floor. Each hanging drop is partly evaporated, and leaves behind a little carbonate of lime; successive drops leave more lime, until an icicle-like pendant, the stalactite, is formed. Stalagmites are calcareous masses upon the floors of caves.

STALBRIDGE. Village of Dorset. It is 6 m. from Sherborne, on the G.W. Rly. There are stone quarries. The market cross dates from the 14th century. Stalbridge gives the title of baron to the Grosvenors. Pop. 1,222.

STALIN, JOSEF VISSARIONOVITCH (b. 1879). Russian politician. In 1896 he joined the social democrats, and in 1902 was arrested and sent to Siberia, but was finally freed in 1917. By then he had come into close contact with Lenin and Trotsky, and during the next few years he was a Bolshevik leader. After the death of Lenin he was one of the three in supreme authority, but in 1927 he had a serious quarrel with Trotsky's following. He managed to oust them from the party, and from then, 1927-28, was practically dictator of Russia, his power being confirmed in 1930. See Russia.



J. V. Stalin, Russian politician

Stalingrad. New name for the town of the Soviet republic of Ukraine known also as Tsaritsyn (q.v.).

STALL. In ecclesiastical architecture an elevated seat in the choir or chancel of a cathedral or church. It is enclosed at the back and sides, high, projecting arms separating it from its neighbour. The word is used in a figurative sense for the office of a canon residentiary in cathedrals and collegiate churches. See illus. p. 1190.

STALYBRIDGE. Borough and market town of Cheshire. It stands on the Tame, 7 m. from Manchester, on the L.M.S. and L.N.E. Rlys. Of modern growth, Stalybridge manufactures cotton and calico goods and paper, and has engineering works and foundries. Market day, Sat. Pop. 25,216.

STAMBOLISKY, ALEXANDER (1879-1923). Bulgarian statesman. He became a journalist, and in 1902 edited the leading organ of the agrarian party in Bulgaria. He became a member of the Sobranje in 1911. In 1913 Stambolisky headed the agrarians, and when, in 1915, Bulgaria was definitely committed to assist Germany in the Great War, he registered an emphatic protest. He suffered three years' imprisonment, and on his release headed the insurgent troops who deposed Ferdinand. In 1919 he became premier. He was shot, June 14, 1923. See Bulgaria.

Stamboul or STAMBUL. Turkish name for the main part of the city formerly known as Constantinople. See Istanbul.

STAMBULOV, STEFAN NIKOLOV (1854-95). Bulgarian statesman. Born at Timovo, Jan. 31, 1854, he entered the Sobranje, and in

1884 became its president. In 1886 he assisted in the restoration of Prince Alexander, and, when Alexander was compelled by Russian hostility to abdicate, Stambulov was a member of the council of regency. In 1887 he helped to secure the election of Ferdinand of Saxe-Coburg, and became prime minister. His violent measures brought about his fall, and on July 15, 1895, he was attacked in the street in Sofia, and died of his injuries three days later.



S. N. Stambulov,
Bulgarian statesman

STAMEN. Male organ of a flower, as the pistil is the female organ. There are usually several stamens, and may be many in each flower, and these are known collectively as the androecium. A stamen consists of a more or less slender stalk (the filament) and the anther, which as a rule has two hollow lobes (thecae). These are filled with grains of pollen, which is the male element; the thecae split to allow the pollen to escape. See Botany; Flower; Pistil; Plant.

STAMFORD. Borough and market town of Lincolnshire and Northamptonshire. It stands on the Welland, 16 m. N.W. of Peterborough, on the L.N.E. and L.M.S. Rlys. Notable churches include those of S. Mary and All Saints, both mainly of the 13th century, S. George and S. John, both of the 14th century, and S. Martin, in which Lord Burghley, Queen Elizabeth's minister, is buried. The most interesting of the almshouses is Browne's Hospital. There are remains of a 7th century Benedictine monastery. An agricultural centre, Stamford has engineering works, breweries, and manufactures of wagons, farm implements, etc. Market days, Mon. and Fri. Pop. 9,882.

The title of earl of Stamford has been held since 1628 by the family of Grey.

STAMFORD BRIDGE. London Athletic Club headquarters. Near the Chelsea and Fulham station of the West London Extension Rly. in the Fulham Road, it was opened in 1878. It is rented during the season by the Chelsea F.C., and accommodates over 80,000 spectators. In 1929 the university sports were held here for the first time.

The village of Stamford Bridge in Yorkshire (E.R.), 9 m. N.E. of York by the L.N.E. Rly., was the scene of the defeat of the Norwegians by the English under Harold, Sept. 25, 1066.

STAMFORD HILL. London district. N. of the met. bor. of Hackney (q.v.), with Stoke Newington W., and the Essex border on the E., it contains Clapton Common, Springfield Park, and the Skinners' Company's school for girls. At Stamford Hill the lord mayor and corporation of the city met James I. on his way to London in 1603.

STAMMERING. Defect of speech in which there is inability to pronounce certain letters or combinations of letters, or a tendency to stumble over syllables, transpose letters, or rapidly repeat letters (stuttering). Stammering may be manifested in early childhood, or may arise later in life as a result of severe nervous shock, in which case it is a symptom of hysteria. In the Great War the symptom was frequently seen in soldiers suffering from shell shock. See Speech.

STAMP. Official mark made by stamping. The commonest kind of stamps are postage stamps, the collection of which, called philately, is a popular hobby. It has a press of some 200 journals and many societies, including the Royal Philatelic Society.

Stamp duties are duties paid by means of long slips. They are necessary for debentures, and other important documents; and in suits, and medicines, playing cards, etc.

STAMP, SIR JOSIAH CHARLES (b. 1880). British economist. Born June 21, 1880, he entered the civil service in 1896. In 1919 he resigned to become secretary of Nobel Industrials, Ltd. Editor of The Journal of the Statistical Society, he was a member of the commission on the income tax and a prolific writer. In 1926 he was appointed president of the executive of the L.M.S. Rly., soon becoming the chairman. Knighted in 1920, Sir Josiah was a member of the Dawes committee on Reparations in 1924, and represented Great Britain on the inquiry of 1929.

STANCHESTER. Site of a Romano-British villa in Somerset, E. of the parish church of Curry Rivell. It has yielded coins of Trajan, Antoninus Pius, and later emperors, Samian potsherds, etc.

STANDARD. Literally, that which stands, and used in one sense for a flag or other ensign of war. The Royal standard or personal flag of the British sovereign measures 15 ft. by 7½ ft., and is emblazoned with the royal arms in their proper colours. It should only be flown when the sovereign is present, or by his viceroys and the governors and lieutenant-governors of colonies and possessions.

The standard borne by the household cavalry and by regiments of dragoon guards is of crimson silk damask, embroidered and fringed with gold, the tassels and cords crimson and gold mixed. See Colours; Flag; Oriflamme.

STANDARD, BATTLE OF THE. Fought near Northallerton, Yorkshire, between the English and the Scots, Aug. 22, 1138. Under David I the Scots invaded England to support the cause of Matilda against Stephen. The English army gathered around the banners of S. Cuthbert of Durham, S. Peter of York, S. John of Boverley, and S. Wilfred of Ripon. These were fastened together on a pole, thus giving to the battle its name. The English were victorious.

STANDARDISATION. In industry, a method for securing uniformity in type and quality, and regulating methods of production with a view to expediting and increasing output for a given expenditure. Standardisation has been applied to every branch of science and manufacture. Time is standardised by observations at Greenwich. Temperatures are expressed in degrees of delicate thermometers; light, heat, and electricity have their units of quantity and intensity. The foot-pound has been adopted as the unit of work; engine-power is stated in terms of the horsepower introduced by James Watt. In engineering standardisation is essential for cheap production.

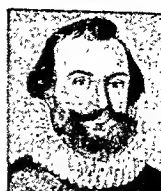
The Standards department is a department of the British board of trade, charged with the duty of seeing that all weights and measures are up to the required standard.

STANDERTON. Town of the Transvaal. It stands on the Vaal river, at an alt. of 5,000 ft., 110 m. S.E. of Pretoria. An agricultural centre, it is the chief town of the E. Transvaal. Here is an experimental farm. Pop. 3,000.

STANDING ORDER. In British parliamentary procedure, a resolution of either House made for the guidance and order of proceedings. They regulate the procedure on bills, the sittings of committees, and other matters, and remain in force until repealed by the House. Many resolutions regarding procedure have become customary, and are thus equivalent in effect to standing orders.

STANDISH. Dist. of Lancashire, forming part of the urban dist. of Standish with Langtree. It is 3 m. from Wigan, on the L.M.S. Rly. The industry is coal mining. Pop. 7,680.

STANDISH, MYLES OR MILES (c. 1584-1656). One of the Pilgrim Fathers. Born at Duxbury, Lancashire, he sailed in 1620 in the Mayflower for Plymouth, Massachusetts, where the first New England colony was founded. Owing to his experience in the Netherlands Standish was appointed commander of the Pilgrims, and successfully conducted several campaigns against the Indians. He died at Duxbury, Massachusetts, Oct. 3, 1656.



Myles Standish,
Pilgrim Father

STANE STREET. Early English name for a Roman road in Sussex and Surrey. Traceable from Chichester for 9 m. straight to Bignor Hill, after some meandering it runs straight again for 18 m. from Hardham to Minnick Wood. Hence it passes through Dorking, Epsom, Clapham, to Newington Causeway.

STANFORD, SIR CHARLES VILLIERS (1852-1924). British composer. Born in Dublin, Sept. 30, 1852, he was organist of Trinity College, Cambridge, from 1873-92, and became professor of composition at the Royal College of Music, 1883, and professor of music at Cambridge in 1887. He was knighted in 1902. Of his operas, Shamus O'Brien, 1896, was the most successful in production. Of his choral works several are sacred compositions. His publications include Studies and Memories, 1908; and (with C. Forsyth) A History of Music, 1916. He died Mar. 29, 1924.

STANHOPE. Urban dist. of Durham. It stands on the Wear, 25 m. from Darlington, on the L.N.E. Rly. The chief industries are connected with the quarries. Pop. 1,923.

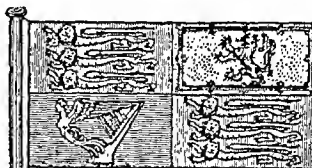
STANHOPE, EARL. British title borne since 1718 by the family of Stanhope, named from Stanhope in Durham. Philip Stanhope, 1st earl of Chesterfield (d. 1656), had a younger son, Alexander, who was the father of James Stanhope (1673-1721), soldier and politician. In 1718 he was made an earl, and from him the present earl is descended. His seat is Chevening Park, Kent, and his eldest son is called Viscount Mabon.

STANHOPE, LADY HESTER LUCY (1776-1839). Niece of Pitt. Born at Chevening, Kent, March 12, 1776, eldest daughter of the 3rd Earl Stanhope, she went, in 1803, to keep house for her uncle, William Pitt, over whom she acquired a remarkable ascendancy. On his death in 1806 she received a pension of £1,200 a year. In 1810, with a small entourage, she left England, and by 1813 had settled at Mt. Lebanon, in Syria, where she lived until her death, June 23, 1839, exercising a sort of dominion over the neighbouring tribes. Her memoirs appeared 1845.

Stanley. Urban dist. of Durham. It stands in a colliery district, 8 miles from Durham. Pop. 25,089.

STANLEY. Urban dist. of Yorkshire (W.R.). It is 3 m. from Wakefield on the L.N.E. Rly. It stands in a colliery district. Pop. 14,689.

STANLEY. Port of Tasmania. On the N. coast, it is 157 m. from Launceston, and has steamer connexion with Melbourne and Sydney. Pop. 3,000.



Standard. The British Royal standard, comprising the arms of England, Scotland, and Ireland



Lady Hester
Stanhope
After W. Wright

STANLEY. Name of a famous English family, of which the earl of Derby (q.v.) is head. In the 14th century Sir John Stanley, descended from a Staffordshire family, married a Lancashire heiress, Isobel Latham. Through her he obtained Knowsley, still the family residence, and much of the land on which Liverpool now stands. His grandson Thomas was made Lord Stanley in 1456, and the latter's son Thomas earl of Derby in 1485. From the elder Thomas is also descended the branch now represented by Lord Sheffield, who holds the barony of Stanley of Alderley.

STANLEY, ARTHUR PENRYN (1815-81). British divine. Born at Alderley, Cheshire, Dec. 13, 1815, he was the son of a clergyman, afterwards bishop of Norwich. Having been elected fellow of University College, Oxford, he was ordained, and for the next few years took a leading part in university life. In 1851 he was made a canon of Canterbury, and in 1856 professor of ecclesiastical history at Oxford. In 1864 Stanley was appointed dean of Westminster. He died July 18, 1881, and was buried in Henry VII's chapel, Westminster.

As an author, Stanley is best known by his *Lectures on the History of the Jewish Church*, 1863-76. He also wrote a *Life of Thomas Arnold*, 1844; *Memorials of Canterbury*, 1855; *Sinai and Palestine*, 1856; and *Memorials of Westminster Abbey*, 1865.

STANLEY, SIR HENRY MORTON (1841-1904). British explorer. Born at Denbigh, June 29, 1841, the son of John Rowlands, a grazier, in 1859 he went to New Orleans, where he was adopted by a cotton broker named Stanley, whose name he assumed. In 1868 he accompanied Napier's expedition to Magdala as representative of *The New York Herald*. In 1869 Gordon Bennett, proprietor of *The New York Herald*, commissioned Stanley to find Livingstone. He started from Zanzibar, and in November, 1871, found Livingstone at Ujiji. Stanley published his adventures in *How I Found Livingstone*, 1872.

In 1873 he accompanied Wolseley's Ashanti expedition, which he described in *Coomassie and Magdala*, 1874, and in the latter year set out on his second journey to Central Africa. He occupied three years in crossing the continent, reaching Boma in Aug., 1877, with only a few survivors. Through the Dark Continent, 1878, recounted his adventures on this journey. He returned to the Congo in 1879, to spend five years. In 1885 he was entrusted with the expedition which relieved Emin Pasha, who had been cut off in equatorial Africa by a Mahdist rising. From 1893-1900 he was M.P. for North Lambeth. He married, in 1890, Dorothy Tennant, who edited his *Autobiography*, 1909, and died May 10, 1904.

STANLEYVILLE. Town of the Belgian Congo. It is situated on the Congo, about 1,000 m. from Leopoldville, and is connected by rly. with Ponthierville, 78 m., where the Congo again becomes navigable.

STANMORE. District of Middlesex. It stands 13½ m. from Euston on the L.M.S. Rly. Near the parish church of S. John the Evangelist are the ruins of a church consecrated by Laud in 1632. Bentley Priory, now occupied by the R.A.F., has historical associations. Pop. 3,864.

STANNARIES (Lat. stannum, tin). Term used for tin mines, especially those of Cornwall and Devon. For hundreds of years the tin mines of that region had their own laws, customs, and organization. Their own representative assembly, or parliament, met for the last time at Truro in 1752. The district had its courts, which dealt with matters affecting the mines, but the jurisdiction of these was transferred to the county court in 1896. They still exist for minor purposes, as does the office of lord warden of the stannaries.

Stanthorpe. Town in Queensland. It is 200 m. by rly. from Brisbane, and is a tin mining centre. Pop. 1,300.

STANTON HARCOURT. Village of Oxfordshire. It is near the Thames, 5 m. W. of Oxford. For 600 years its manor house was the residence of the Harcourt family.

STAPLE. Originally a mart or emporium, and so a town where certain goods were collected and sold; hence the goods thus sold, the principal commodities produced by a country and sold or exchanged for goods from abroad.

In the U.K. during the Middle Ages certain privileged towns were called staple towns. It was only in these markets that the staple goods, wool, fells or sheepskins, leather, lead, and tin, might be sold for export. The wool trade was in the hands of a guild known as the Merchants of the Staple, who exported the raw material and imported finished cloth. Among their members were foreign merchants who used their privileges to such purpose that an outcry was raised by English traders. See *Hanseatic League*; *Steelyard*.

STAPLEFORD. Village of Nottinghamshire. It stands on the Erewash, 6 m. from Nottingham, on the L.M.S. Rly. It has a 9th century churchyard cross. Pop. 8,513.

STAPLE INN. Relic of old London. It is on the S. side of Holborn, W.C., facing Gray's Inn Road. In ancient times a centre associated with wool staplers, it was one of the inns of chancery from the time of Henry V until 1884. It has a picturesque Dutch garden. The hall, dating from 1581, with hammer-beam roof, is let to the Institute of Actuaries. See *Holborn*.

STAR. Heavenly body of a nature similar to the sun, of dimensions far superior to the earth. They are isolated from the earth by vast distances. About 6,000 stars are sufficiently bright to be seen with the naked eye. Powerful telescopes, aided by the photographic plate, reveal objects at least a million times fainter, and the number rises to some hundreds of millions.

The configuration of the stars in the sky has not noticeably altered in historic times, but the positions are not absolutely fixed, and in most cases a small displacement can be detected in the course of, say, half a century. Of the bright northern stars Arcturus has a motion of 2.3 seconds per year. The motion of Arcturus is surpassed by that of a number of faint stars, but in most cases the movements are very much smaller. A great advance in knowledge has been gained by the application of the spectroscope (q.v.) to measure the rate at which a star is approaching or receding from the earth.

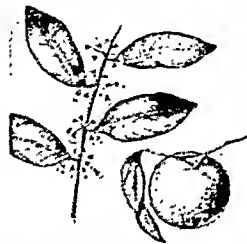
The sun, carrying with it the earth and planets, is moving at a speed of 12 m. a second towards a point not far from the star Vega. The stars stream predominantly in two particular directions, as though two great systems moving in different directions had met one another and were now intermingled. The nearest known star is a Centauri, its distance being 24,000,000,000,000 m., about the average distance which separates one star from its nearest neighbour. Many of the stars which appear single to the naked eye are found with the telescope to be double.

Even when a star is seen as a single point with the telescope, it is often found by the spectroscope to be alternately receding and approaching in a regular cycle, as if revolving round another body of great mass.

Many stars vary periodically in brightness. Some, the Algol variables, are simply double stars in which the fainter component partially hides its companion once in each revolution. The long period variables have a periodicity usually between 200 and 600 days, and more intense fluctuation of light. The Cepheid variables undergo a quick cycle of change, the period being sometimes only a few hours. The change of brightness that takes place is small. See *Astronomy*; *Constellation*; *Planet*; *Telescope*, etc.

STAR. Word employed for anything that is in the shape of a star. Decorations for military and other services are frequently made in this form, and so we have the stars of the orders of knighthood, the Mons star, and many others. See *India: Heraldry: Knighthood*; *Medal*.

STAR APPLE (*Chrysophyllum cainito*). Evergreen tree of the order Sapotaceae, native of the West Indies. Its branches are clothed with rusty down and the juice is milky. It has alternate, oblong leaves, covered with rusty hairs on the under side, and small white flowers. The fruit, like a large apple, is yellowish green tinted with rose. It has soft sweet flesh and can be eaten.



Star Apple. Spray of leaves and flowers; right, fruit

STARCH. One of the most important carbohydrates. Widely distributed in the vegetable kingdom, it is a white glistening powder, consisting of little granules which differ in size and appearance according to the species of plant whence they are derived. When heated with water the granules swell enormously, and at the temperature of boiling water are ruptured, forming a gelatinous paste. Apart from its importance as the largest constituent of farinaceous and of prepared starch foods, starch in a separated form is widely utilised in the industrial arts. The starch of wheat is extracted by kneading dough in a stream of water, or by a fermentation process. Starch is also made from potatoes and rice. See *Dextrin*; *Farina*.

STAR CHAMBER, THE. English law court constituted by statute in 1487. It was used by Henry VII as an instrument for checking the influence of powerful nobles. Its creation was a formal assertion of the privileges of jurisdiction long claimed by the privy council, the officers of state who acted as judges being drawn from that body. Under the Stuarts the Star Chamber became distinguished for its tyrannical procedure and was abolished in 1641. See *Privy Council*.

STARFISH. Popular name for the order Asteroidea of the echinoderms. In it the body is extended into a series of rays or lobes producing the conventional star shape. The mouth is situated in the centre of the underside of the body, and the rays are covered beneath with rows of small suckers by means



Starfish. Five Fingers, *Asterias rubens*, the common starfish

of which the animal crawls slowly along. The alimentary canal consists of a sac in the centre of the body, communicating with the mouth beneath and with a minute anus above. The food consists chiefly of bivalve molluscs.

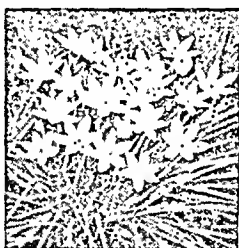
STARK, JAMES (1794-1859). British artist. Born at Norwich, Nov. 19, 1794, he studied under John Crome (q.v.) and at the R.A. schools, and became one of the most prominent painters of the Norwich group, painting woodland, river, and const scenery. He died March 24, 1859.

STARLING (*Sturnus vulgaris*). Name applied to many birds, but particularly to the common starling of Europe, a familiar British bird. It has black plumage with green and purple reflections, the upper feathers being tipped with buff and the under tail coverts edged with white. It is remarkable for the variety of its notes. Mainly insectivorous in diet, it spends much of its time on the ground probing for worms and grubs. Starlings occur in large flocks, which migrate from one district to another when food becomes scarce. See Pastor.



Starling. Insectivorous bird, common in large flocks throughout Britain and Europe.
W. S. Berridge, F.Z.S.

STAR OF BETHLEHEM (*Ornithogalum umbellatum*). Bulbous herb of the order Liliaceae, a native of Europe. The scaly bulb



Star of Bethlehem. Grass-like leaves and clustered flowers

STARS AND STRIPES. Popular name for the flag of the United States of America, also known as "Old Glory." It is now composed of seven horizontal red stripes and six horizontal white stripes (which represent the original 13 states seceding from the British crown), and a blue canton emblazoned with 48 stars, arranged in six rows of eight stars. The flag as adopted in June, 1777, had only 13 stars, but it was later decreed that a star should be added for every state joining the union.

Starwort. Alternative name for plants of the genus *Stellaria*, for example, chickweed. See Chickweed; Stitchwort.

STATE. Modern name for the body politic. The government is its agent, while its constitution is its form of government. The state is sometimes confused with the nation; but while a man's nationality is determined by such things as sentiment, race, language, history, and common traditions, the state is the creature of legal enactment, and depends on organization, territorial considerations, and subjection to one government.

The boundaries of a state may possibly coincide with those of a particular nation;

but this is not necessary. A citizen, for example, of the United Kingdom may be English, Scottish, Irish (Northern), or Welsh. Naturalization, again, substitutes a new state for the old one, but not necessarily a new nationality.

"An independent organized community" is perhaps the briefest definition ever attempted of the modern state; and it may be accepted as adequate, if the full content of each of its three terms is appreciated. Thus community implies a considerable group of individuals permanently banded together, not merely for religious, commercial, or social purposes, but politically in the widest sense of that word. The term organized excludes the idea of a mere mob or casual association, and postulates subjection to a system of government or constitution, with its fixed laws and officials competent to enforce them, and in the habit of enforcing them. Independent points to the non-existence of any foreign influence capable of effective interference within that community's legitimate sphere.

To these three essentials of a modern state a fourth is often added, namely, the possession of a separate territory of its own. While this addition may not be required in strict logic, yet no modern state, whose existence as such is recognized, is entirely without some territory, however small, under its exclusive control. See Sovereign.

STATEN ISLAND. Island of New York, U.S.A. It is situated at the mouth of the Hudson river, and is separated from Manhattan Island by the Narrows. It covers 70 sq. m. and contains New Brighton, Port Richmond, West New Brighton, and other villages, several of them seaside resorts. In June, 1928, two bridges were opened between the island and the mainland. Pop. 116,531. See New York.

STATER. Name of standard gold and silver coins, current in the ancient Greek world. Of gold staters, the oldest were probably the double staters of Cyziens and Phocaea, the value of which was low, owing to debasement of the coinage. The Persian gold stater, called a daric after Darius, weighed two drachmae, and was current at Athens, where, as well as in Macedonia, staters of the same value, about £1 2s., were coined. Silver staters were coined in Asia Minor and Greece.

STATES GENERAL. Body representing the three estates of the French kingdom, the clergy, the nobility, and the commons. It was first called in 1302. The states general had no legislative functions and could only make its influence felt by petitioning against grievances. It was dismissed in 1614 and did not meet again until called by Louis XVI, 1789, when it took the title of the national assembly.

The term states general was also applied to the representatives of the seven provinces of the old republic of the Netherlands (q.v.). The name survives in the parliament of the present kingdom of the Netherlands.

STATICS (Gr. *statikos*, relating to standing).

Branch of mechanics which deals with bodies and forces or systems of bodies and forces in equilibrium. One of the fundamental propositions of statics is that the sum of the moments of all the forces about any axis must vanish. The potential energy of a statical system is a minimum. Statics also treats of the relations of strains and stresses of a body. Many of the problems of statics may be solved by graphical methods. See Equilibrium.

STATIONERS' COMPANY. London city livery company. Dating from 1556, it once had the monopoly of printing in England,

and until 1911 every work published in Great Britain had to be entered or registered for copyright purposes at Stationers' Hall. Until 1771 the company had the sole right to print almanacs. The hall, in Stationers' Hall Court, Ludgate Hill E.C., was rebuilt 1670-74. The company maintains a school for about 600 boys at Haringay.

STATIONERY OFFICE. British government department. It was founded in 1782 to supply the public departments with books and stationery. The head office is Prince's St., Storey's Gate, London, S.W.1. The publications are sold wholesale at Cornwall House, Stamford St., London, S.E.1, and 120, George St., Edinburgh. There are branches and retail shops at Adastral House, Kingsway, W.C.2, 26, York St., Manchester, 120, George St., Edinburgh, Cardiff, and Belfast. The printing works are at Harrow.

STATIONS OF THE CROSS. Popular name of a devotional practice in the R.C. Church. A series of pictorial representations of scenes in the Passion is usually placed on the walls of R.C. places of worship, and during Lent and in Passion Week the faithful proceed from one to another, kneeling and reciting appropriate prayers before each. The stations usually number 14. The devotion dates from 1726, when the indulgences to be gained by a visit to the holy places of Jerusalem were declared obtainable by visits to representations of the Stations of the Cross.

STAVANGER. City and seaport of Norway. It is 105 m. S. of Bergen, on the Stavanger Fiord, an arm of the Bukke Fiord. The cathedral was founded in the 11th century by Bishop Reinald, an Englishman; the existing Gothic structure, one of the finest in Norway, replaces the one burnt down in 1272. Textiles, soap, margarine, and earthenware are the main products. There are foundries and shipyards, and fishing and fish curing are carried on. Founded in the 8th century, the town has been frequently burnt down and rebuilt. Pop. 43,778. See Norway.

STAVE. In music, the lines upon which, with the intervening spaces, notes are placed in order to indicate pitch. The most convenient number is found to be five, and a clef (q.v.) is placed upon it to fix their alphabetical names and their pitch. All staves are really selections from the great staff of eleven lines, which covers the range of the human voice from bass to soprano.

STAVELEY. Market town of Derbyshire. It is 4 m. from Chesterfield, on the L.M.S. and L.N.E. Rlys. Its chief industries are coal mining and iron working. The church contains monuments to the Frecheville family. Market day, Fri. Pop. 12,646.

STAWELL. Township and rly. junction of Victoria, Australia. It stands on the main Melbourne to Adelaide line, 150 m. from the latter city. The district is agricultural and contains gold mines, and also freestone quarries. Pop. 4,740.

STEAD, WILLIAM THOMAS (1849-1912). British journalist. Son of a Congregational minister, he was born at Embleton, Durham, July 5, 1849. He edited *The Northern Echo*, Darlington, 1871-80, was assistant editor of



W. T. Stead, British journalist

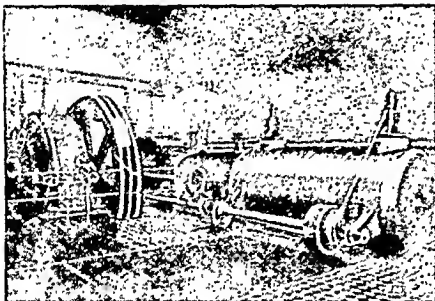
The Pall Mall Gazette, 1880-83, and editor, 1883-89. He founded *The Review of Reviews*, 1890, started a penny Masterpiece Library, 1895, and was the author of a number of political and other works. He was drowned when the Titanic foundered, April 15, 1912. Stead travelled on the Continent and in

the U.S.A. as peace propagandist, advocated a strong British navy, was largely concerned in social work, especially in criminal law amendment, and was interested in spiritualism.

His brother, Francis Herbert Stead (1857-1928), was warden of the Robert Browning Settlement, Walworth, 1894-1922.

STEAM ENGINE. Machine for the conversion of heat energy into useful work by means of the expansive force of steam. Many early attempts were made to use steam as a motive power. Thomas Savery patented an engine in 1698. It consisted of a cylinder into which steam entered and forced out a charge of water, sucked into it by a previous charge of steam that was suddenly condensed by a jet of cold water flowing over the outer surface of the cylinder. Thomas Newcomen and John Cawley introduced a piston, driven down by atmospheric pressure as a vacuum was created in the cylinder by the condensation of the steam. The steam was condensed by a jet of water inside the cylinder. The idea of the piston originated with a French engineer, Papin. Newcomen's engine, like Savery's, was used for pumping water.

Both these steam engines were very wasteful of power, and the next important step came from James Watt, who patented a separate condenser in 1769. The double-acting engine followed. From the time of Watt's improvements the advance of the steam engine was rapid. Richard Trevithick applied it to the



Steam Engine. Uniflow Engine, 1,100 H.P. Valves are opened and closed by cams operated by eccentrics from the layshaft
Courtesy of Robey & Co., Ltd.

first locomotive to run on rails in 1804. Hornblower a few years previously brought out the first compound engine, and the improvements which followed were mainly those based on a wider knowledge of the strength of materials and in the boiler, valves, and the like.

Steam engines may be classified as single-acting or double-acting, condensing or non-condensing, or of the high-speed or low-speed types. When the expansion of the steam is carried out in two or more consecutive cylinders we have as a further classification the single, compound, triple, or quadruple expansion engines.

Essentially a steam engine consists of a piston and cylinder with the necessary gear to transmit the motion of the piston to a shaft. An automatic valve distributes the steam, and a governor controls the speed.

When the motion is transmitted directly to the crank from the piston by a connecting rod, the engine is called direct acting. In the oscillating engine the piston rod itself connects with the crank direct, and the cylinder oscillates with the motion, being mounted on trunnions for the purpose. Single-acting engines are those in which the steam acts on one side of the piston only, double-acting where it acts on one side and then on the other alternately. See Boiler; Governor; Locomotive; Turbine.

STEAM HAMMER. Power-driven hammer. The invention of James Nasmyth about 1842, the tup, or massive striker, of the steam hammer was attached to the lower end of the

piston rod of an inverted cylinder. Steam was admitted below the piston to raise the hammer, and above it to accelerate the fall, by the movements of a lever controlling a steam valve. Nasmyth's partner, Robert Wilson, introduced improvements which made it self-acting.

STEARIC ACID. Fatty acid. It occurs widely diffused throughout the animal kingdom, combined with glycerin, and constitutes the bulk of hard fats, such as suet and tallow. It is also found in many vegetable fats. It forms stearates with the alkalis and alkaline earths. The stearates are the chief constituent of all ordinary soaps. Stearic acid is used for making candles. Stearin is the glyceride of stearic acid, which occurs in many natural fats.

STEATITE. Name given to a variety of talc. White, grey, green, or brown in colour, soft, and easily cut, it has been used from earliest times for ornaments, earrings, etc. It is heat-resisting, and is consequently used for firebricks, etc., while in a powdered form steatite is an ingredient of soaps, paints, lubricants, French chalk, etc. It is found in Cornwall, in co. Donegal, the Shetlands, N. America, etc. See Soapstone; Talc.

STEEL. Steel may be defined as a mixture of carbide of iron (Fe_3C) with pure iron (Fe), which after cooling from fusion is (after re-heating) capable of being forged from ingots into sound merchant sections.

Fluid steels are divided into cutting steels and structural steels. The former are made into milling cutters, turning tools, drills, chisels, etc. The latter are cast into titanic masses for making guns, shafts, armour plates, shells, and rails, as well as bridge and boiler plates. The highest quality of cutting steel is made by the white crucible process from the best Swedish bar irons. In the early 'seventies R. F. Mushet discovered the beneficial influence of tungsten and a little chromium on tool steel, thus laying the foundation of those wonderful alloys called high speed steels. A modern high speed tool will cut hard steel up to 700° C.

Up to the late 'sixties steel rails and steel plates for ships, bridges, and boilers were practically unknown, wrought iron being still supreme for structural purposes. About 1856 Henry Bessemer (q.v.) patented his method, which introduced a revolutionary change in steel melting, inasmuch as its fuel was internal, consisting of the elements silicon, carbon, and manganese. In crucible steel melting the fuel is quite external, consisting of coke or producer gas burning outside the covered pot. The Bessemer is the standard method for making steel rails. For most purposes, however, Bessemer steel has been replaced by Siemens-Martin steel, since Martin's open hearth process was made practicable by the application to it of Siemens' regenerative or recuperative heat system.

Rustless or stainless steels have been developed for the manufacture of entery, surgical instruments, parts of machines, etc. Such steels contain up to 20 p.c. of chromium.

The chief steel producing countries are, in order of importance, the U.S.A., Germany, Great Britain, France, Russia, and Belgium. In 1929 the world's production of steel was, in round figures, 118,000,000 tons; of this the U.S.A. contributed 55,000,000 and Gt. Britain 9,800,000 tons. For the six months ended June 30, 1930, the quantities were: U.S.A. 23,751,700 tons, Gt. Britain 4,361,700 tons. See Furnace; Iron; Metallurgy.

STEEL, FLORA ANNE (1847-1929). British novelist. The daughter of a Scottish legal

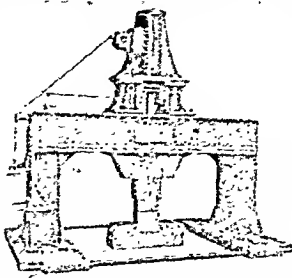
official, she married in 1867 an officer in the Bengal civil service, and lived for many years in India. There she obtained that profound knowledge of the country which is reflected in many of her novels. These include a fine story of the Indian Mutiny, *On the Face of the Waters*, 1896; *The Potter's Thumb*, 1894 and many others. In 1929 appeared an autobiographical volume, *The Garden of Fidelity*. She died April 12, 1929.

STEELE, SIR RICHARD (1672-1729). English writer. Born in Dublin of English and Irish parentage, he was educated at the Charterhouse. The year 1701 saw the production of his first play, a comedy entitled *The Funeral*; or, *Grief à la Mode*, followed later by two others. The moral tone which characterised Steele's plays was a welcome change after the licence of the Restoration dramatists. His fourth and best play, *The Conscious Lovers*, was produced in 1722.

Steele is best known as the founder of *The Tatler*, the first number of which appeared April 12, 1709. From the 18th number he had the co-operation of Addison, his friend at school and university, and the literary partnership continued when *The Tatler* was discontinued, and two months' later, March 1, 1711, *The Spectator* was started. In the meantime Steele had entered politics as a Whig, and was elected M.P. for Stockbridge in 1713, but a violent pamphlet issued by him, entitled *The Crisis*, resulted in his expulsion from the House. In 1715 he re-entered Parliament as member for Boroughbridge, and was knighted. He died at Carmarthen, Sept. 1, 1729. See *Spectator*, *The*.

STEEL-MAITLAND, SIR ARTHUR HERBERT DRUMMOND RAMSAY (b. 1876). British politician. Born July 5, 1876, he was educated at Rugby and Oxford, where he rowed against Cambridge. In 1910 he entered Parliament as M.P. for E. Birmingham, and in 1918 was returned for the Erdington division. He lost his seat in 1929, but was elected a little later for the Tamworth division. In 1915 he was made under-secretary for the colonies, and from 1917-19 was under-secretary for foreign affairs and head of the department of overseas trade. From 1924 to 1929 he was minister of labour. In 1917 he was made a baronet.

STEELYARD. Balance or weighing machine having a lever with two arms of unequal length. In a special sense the Steelyard was the name given to a community of foreign merchants, mostly German.



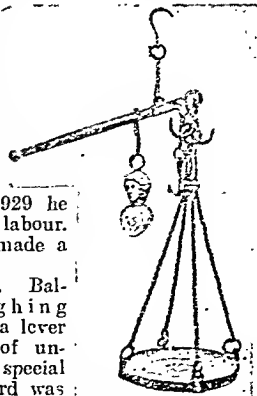
Steam Hammer. Massey hammer, showing cylinder, tup, and anvil



Sir Richard Steele, English writer
Engraving by W. Holl



Sir A. Steel-Maitland, British politician
Russell



Steelyard of Roman make, dating from the 1st century A.D.

who settled in London in the 13th century under the protection of charters. In 1579 the Steelyard lost all rights, and on August 4, 1598, the German merchants were forced to leave their stronghold.

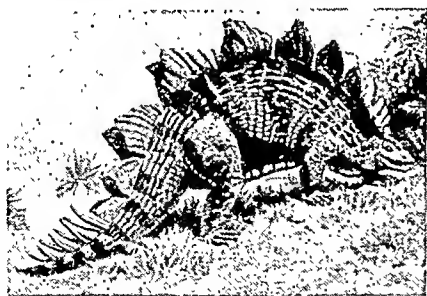
STEEN, JAN (1626-79). Dutch painter. Born at Leiden, he studied at Utrecht, and later under Jan van Goyen at The Hague. He worked alternately at Leiden, The Hague, Delft, and Haarlem, where he was influenced by Adrian Ostado. His genre pictures are prized. He died at Leiden.

STEENBOK (Dutch, stone buck). Small species of S. African antelope, *Nanotragus* or *Raphiceros campestris*. It is distinguished by its upright horns, about 4 ins. long, and the absence of lateral boofs. Less than 2 ft. high and of a tawny colour, it conceals itself well on the veld. Pron. Stainbok.

STEEPLECHASING. Form of horse racing, taking place either across country from point to point, with natural obstacles, such as fences, hedges, and brooks, or on a prepared course with artificial obstacles. The name is due to the fact that in early steeplechases a church tower was often the point aimed at. Races across country are now, however, generally known as point to point (q.v.) races, and steeplechasing proper is confined to race-courses with hurdles, water-jumps, etc.

Steeplechases take place during the winter and early spring on most of the best known race-courses. The Grand National is the chief cross-country event of the year. No steeplechase of less distance than 2 m. is allowed. See Grand National: Horse Racing.

STEFANSSON, VILHJALMAR (b. 1879). Arctic explorer. Born in Canada, of Icelandic parentage, he was commissioned in 1908 by the American Museum of Natural History to make an ethnological survey of the Central Arctic coast of America. In 1913 he was sent north by the Canadian government and, notwithstanding the loss of his vessel, the *Karluk*, pursued his exploration on sledge and discovered Prince Patrik Land. He remained in the Arctic regions until 1918, having mapped large areas of the N. American coast. His works include *The Friendly Arctic*, 1921, and *The Folklore of the Eskimos*, 1930.



Stegosaurus. Prehistoric reptile of England and America, measuring 30 feet in length

STEGOSAURUS. Large fossil dinosaur of the Jurassic period. Ranging up to 30 ft. in length, including the long tail, its fore limbs were short and the head small. It was characterised by a ganglion, controlling the nervous system, which was larger than the brain of the animal. See Dinosaur.

STEIN, CHARLOTTE VON (1742-1827). Friend of Goethe. The wife of the duke of Saxe-Weimar's master of the horse, she became the intimate friend of Goethe, and is known to fame as the recipient of a long series of his letters. The intimacy was broken for a time by his marriage, but had been renewed before Charlotte died, Jan. 6, 1827. Goethe's letters to her were first published in 1848-51.

STEIN, HEINRICH FRIEDRICH KARL, BARON VON (1757-1831). German statesman. Born Oct. 26, 1757, he entered the Prussian service, in which he rose rapidly. He rendered great service to King Frederick William III during the troubled years 1804-6. As minister of the interior his wise statesmanship conferred a large measure of self-government on the German towns, and he would have proceeded to a similar measure for the rural districts, but Napoleon demanded his dismissal. Stein escaped to Bohemia and in 1812 to St. Petersburg. At the Congress of Vienna he worked hard to secure the consolidation of Germany. He died June 29, 1831.



Sir Aurel Stein, British archaeologist
Elliott & Fry

STEIN, SIR MARK AUREL (b. 1862). British archaeologist. Born at Budapest, Nov. 26, 1862, he studied in Germany and England. As head of Lahore Oriental College, 1888-99, he made researches in Kashmir. Entering the Indian educational service, he conducted three expeditions, principally to Chinese Turkistan, in 1900-1, 1906-8, and 1913-16, resulting in priceless additions to the British Museum and the Delhi Central Indian Museum. In 1926-28 he was engaged in excavating in Baluchistan. He became a naturalized British subject, and in 1912 was knighted.

STELA or **STELE** (Gr. stēlē, upright post). Upright slab bearing sculptural designs or inscriptions. The word is applied also to a prepared rock-surface similarly inscribed.

The most numerous examples and the oldest pertain to ancient Egypt, but stelae are found in Greece, Asia, S. America, etc. They are either funerary, mostly in tomb-chambers, or votive, usually dedicated by kings or eminent personages in temples and public places.

STELLA (Lat. star). Name by which Sir Philip Sidney addressed Lady Penelope Devereux, afterwards Lady Rich, in his love sonnets, *Astrophel* and *Stella*. It was also given by Jonathan Swift to Esther Johnson. See Rich.

STELLENBOSCH. Town of Cape Province, S. Africa. It is 31 m. by rly. from Cape Town. An important educational centre, it is the seat of the university of Stellenbosch, formed from Victoria College in 1918. There are several 17th and 18th century houses in the Dutch style. Around are vineyards and fruit farms. Pop. (European) 3,697.

STELVIO PASS. Alpine pass in Italy. It is on the great highway from Milan to Innsbruck, and carries a carriage road, the summit of which is 9,055 ft. above sea level.

STEM. In botany, the axis of a plant, that which bears the flower, leaves, and root. It may be erect, climbing, creeping, or pendulous, or may extend underground, in which case it differs from the roots in its capacity for bearing leaves. In trees, shrubs, and certain other plants the stem persists all the year round; in herbaceous plants it dies down in the autumn, in which case the plant has an underground stem, e.g. a rhizome, bulb, corn, or tuber. See Botany: Plant.

The word is also used for anything that resembles a stalk or stem. In shipbuilding, it is the upright bar of iron or piece of timber at the fore end of a vessel, to which are attached the forward ends of the strakes. See Ship.

STENCILLING (Old Fr. estinceller, to powder with stars). Printing, on paper or other prepared surface, of a pattern by means of a thin sheet of metal, cardboard, etc., pierced with spaces. When the ink or colour is brushed over the whole surface, it falls into the spaces intended to receive it, and is excluded by the sheet from the intervening spaces. Stencilling was the earliest method of printing coloured wall-papers, and is used in various forms of surface decoration.

STENDHAL. Pen name of Marie Henri Beyle, French novelist (1783-1842). Born at Grenoble, Jan. 23, 1783, he obtained a post in the ministry of war. He saw some military service, and from 1830-41 was a consul in Italy. Stendhal, who wrote three novels, *Armance*, 1827; *Le Rouge et le Noir*, 1831; and *La Chartreuse de Parme*, 1839, notable for its account of the battle of Waterloo, may be regarded as the creator of that modern novel of psychological analysis which Bourget and D'Annunzio did much to popularise. He died in Paris, Mar. 23, 1842.



"Stendhal," French novelist
After H. Dujardin

STENNESS, STONES OF. Megalithic stone circles near Macshewe, Orkney. A 30-ft. moat encloses about 2½ acres, within which stands the Ring of Brogar, a circle of unhewn sandstone monoliths, 366 ft. across. Outside a smaller circle stood the perforated Stone of Odin, mentioned by Sir W. Scott in *The Pirate*.

STENTOR. In Greek mythology, the herald of the Greeks in the Trojan War. He was famous for the loudness of his voice, which was said to be equal to that of thirty men. The English word stentorian is derived from him.

STEPHEN. Christian saint and martyr. After the death of Christ he became a member of the Christian society in Jerusalem. One of the seven chosen to look after the poor (Acts 6), he was a man "full of faith and the Holy Ghost," and took a prominent part in controversy. His words made his enemies angry, and he was brought before the council. His speech (Acts 7) did not save him, and he was stoned to death. His day is Dec. 26.

STEPHEN (c. 1097-1154). King of England. A younger son of Stephen, count of Blois, and Adela, a daughter of William the Conqueror, he lived in boyhood at the court of his uncle Henry I. Although he had sworn to help Henry's daughter, Matilda, to obtain the throne on her father's death, when that event occurred he put himself forward and was



Stelvio Pass. Windings in one of the highest carriage roads in Europe

crowned, his brother Henry, bishop of Winchester, being one of his chief supporters. His reign was a period of general anarchy, due in part to his subservience to the barons. Rebellions broke out and in 1139 Matilda appeared

to claim the throne. In 1141 Stephen was captured, but before the end of the year he was free again and the civil war continued for about twelve years. The treaty of Wallingford provided that Matilda's son Henry should succeed Stephen, who died Oct. 24, 1154. Stephen's elder son, Eustace, died in 1153; the younger, William, called the Clito, fought against Henry II.

STEPHEN (977-1038). King of Hungary and saint. The son of Geza, duke of Hungary, he changed his name from Vajk to Stephen at his conversion and baptism in 997. In 998 he took the title of king, and in 1001 received from Pope Sylvester II the iron crown. His reign was spent in wars against the heathen, and in 1030 he repelled an invasion by the emperor Conrad. He was canonised in 1083.

STEPHEN, SIR JAMES (1789-1859). British historian. Born at Lambeth, Jan. 3, 1789, he was educated at Trinity Hall, Cambridge. In 1825 he became counsel to the colonial office and board of trade. He became under-secretary to the colonial office, 1836-47, when he was knighted. His historical knowledge gained him the appointment of regius professor of modern history at Cambridge in 1849. Stephen died at Coblenz, Sept. 14, 1859.

His son, Sir James Fitzjames Stephen (1829-94), was a judge of the high court, 1879-91, when he received a baronetcy. He wrote largely for *The Saturday Review* and *The Pall Mall Gazette*, while his works on legal subjects include *Digest of the Law of Evidence*, 1876, and *History of the Criminal Law of England*, 1883. He died at Ipswich, March 11, 1894.

STEPHEN, SIR LESLIE (1832-1904). British author. Born in London, a son of Sir James Stephen, Nov. 28, 1832, he was educated at Eton and Cambridge. He was a tutor at Cambridge until 1864 and a clergyman from 1862 to 1875, when, having become an agnostic, he relinquished his orders. He wrote for *The Saturday Review* and other papers, and in 1880 undertook the editorship of *The Dictionary of National Biography*. He was knighted in 1902, and died Feb. 22, 1904.

Stephen wrote *Hours in a Library*, 1874-77; and *An Agnostic's Apology*, 1893; also lives of Swift, Pope, Johnson, George Eliot, and Hobbes in the *English Men of Letters* series. A keen mountaineer, he wrote *The Playground of Europe*, which appeared in 1871.

STEPHENSON, GEORGE (1781-1848). British engineer. Born at Newcastle, June 9, 1781, he was the son of Robert Stephenson, a colliery fireman. In 1808 he contracted with two others to work the engines of Killingworth pit, and he dismantled his engine once a week until he was thorough master of its construction. In 1815 he invented a safety lamp for the use of miners. He built his first locomotive in 1814, and in 1815 he made a number of improvements in its construction. The failure of steam locomotives to work on any real gradient on the roads turned Stephenson's attention to the construction of railroads, and in 1819 he superintended the laying down of a short line at Hetton Collieries and in 1823 the line between Stockton and Darlington. In 1826 Stephenson began the construction of the Liverpool and Manchester Rly., and in 1829 he built the Rocket. He died Aug. 12, 1848. See *Locomotive*; *Railway*.

STEPHENSON, ROBERT (1803-59). British engineer. Son of George Stephenson, he was born Oct. 16, 1803. He helped his father to

survey the Stockton and Darlington Rly., 1821, and then entered Edinburgh University. On his return from a mining appointment in Canada in 1827 he assisted his father in building the Rocket and constructing the first railway into London, the Birmingham-London line, 1833-38. The Menai Bridge, the Victoria bridge at Montreal, and many others were built by him. He was M.P. for Whitchy from 1847 till his death. He died Oct. 12, 1859.



Robert Stephenson,
British engineer

STEPNEY. Met. bor. of London. It has Bethnal Green on the N., the city and Shoreditch W., Poplar E., and the Thames S. It contains the Tower, Mint, St. Katharine's and London docks, Shadwell Basin, and includes Spitalfields, Whitechapel, Mile End, St. George's in the East, Shadwell, Wapping, and Limehouse. The church of St. Dunstan was rebuilt by Wren. Charitable institutions include Barnardo's Homes and the London Hospital. Since 1895 Stepney has given its name to a suffragan bishopric. Pop. 249,738.

STEPNIAK, SERGIUS (1852-95). Russian writer. He was born of noble descent, his proper name being Sergius Michaelovitch Kravchinsky. He early associated himself with the fight for freedom, and when he was little over twenty was arrested owing to his association with a known group of Nihilists, and was later placed under police surveillance. Before he was thirty he got away from Russia, and lived first in Switzerland and later in England, where he became known as a writer and lecturer. He was killed at a railway crossing at Chiswick, Dec. 23, 1895.



Sergius Stepnjak,
Russian writer

STEPPE. Name given to the vast grassy plain in the S. and S.E. of the European territory of the Union of Socialist Soviet Republics and in the S.W. of its Asiatic territory. Owing to the scanty rainfall or, in some cases, to the porous character of the soil, trees are not found except along the banks of rivers, or where there are permanent supplies of moisture. See *Pampas*; *Siberia*.

STEREOSCOPE. Optical instrument which presents to each eye separately a flat image, either a drawing or a photograph, of an object, as seen by the respective eyes, and so produces the effect of relief. The instrument was invented by Wheatstone in 1838, and the separate pictures were reflected by mirrors. The use of two prism eyepieces was due to Brewster, 1849, and, as modified by making the prisms in the form of sections of convex lenses, has been generally adopted.

STEREOTYPING. Method of reproducing for printing a surface of movable type or relief printing blocks. Two operations are involved, the moulding of the matrix from the type, and the casting of the stereotype from the mould. It is executed by making in plaster of Paris or papier-maché by extreme pressure heavy impressions of the surface of a forme containing type or illustrations, or both, and a mould or matrix is thus secured into which molten metal is poured, producing a new metal surface with characters in relief identical with the original. See *Autoplate*.

STERILISATION (Lat. sterilis, barren). Term used in bacteriology and chemistry for destroying microbes or bacteria.

The sterilisation of food forms an important part of its preparation for human consumption.

Water may be sterilised by boiling or distillation, and milk by boiling or exposing to superheated steam. Boiling or exposing milk to great heat alters its character and its food value, and sterilisation is better carried out by pasteurization. Milk can also be sterilised by the addition of antiseptic substances, e.g. boric acid.

The idea of preventing persons from reproducing their kind by sterilising them is carried out in California and some other states of the U.S.A. In 1928 a law for the sterilisation of the feeble-minded was passed in Alberta.

STERLING, ANTOINETTE (1850-1904). American singer. She was born at Sterlingville, New York, Jan. 23, 1850, and studied singing in New York and under Marchesi, Viardot-Garcia, and Manuel Garcia, returning to New York in 1871 and soon becoming known as a leading contralto concert singer. She made her first London appearance in 1873, and thereafter remained in England, though touring the U.S.A., 1875, and Australia, 1893. Her dramatic sense made her a powerful ballad singer. Married to John Mackinlay, 1875, she died at Hampstead, Jan. 9, 1904.

STERLING, JOHN (1806-44). Scottish author. Born July 20, 1806, at Kames Castle, Bute, the son of Captain Edward Sterling (1773-1847), who became a leader writer on *The Times*, he was educated at Glasgow University and Trinity College, Cambridge. In 1828 he became for a time part proprietor of *The Athenaeum*. In search of health he went to St. Vincent as manager of a sugar plantation, but after fifteen months he returned to England, took orders, and for a short time was a curate. He died Sept. 18, 1844. He is chiefly remembered by the biography written by his friend Thomas Carlyle.

STERN, DANIEL (1805-76). Pseudonym of Marie Catherine Sophie de Flavigny. Born at Frankfurt, Dec. 31, 1805, she married in 1827 the Comte d'Agout, but deserted him for Liszt, the composer, to whom she bore three daughters. The eldest child married Emile Ollivier, and the youngest married Hans von Bülow and subsequently Wagner. Stern's best work is *Moral Sketches*, published in 1849. She died March 5, 1876.

STERNE, LAURENCE (1713-68). British novelist. He was born Nov. 24, 1713, at Clonmel, and on his father's death in a duel was sent by relatives to Jesus College, Cambridge. He was ordained in 1736, and soon received the living of Sutton, Yorkshire. He married and lived there quietly until 1759, when he published the first two volumes of *Tristram Shandy*. This made him known, and, having produced its two concluding volumes, he went to London to enjoy the fame it brought him. He was presented to another living at Coxwold, but he spent much of his time in travel. His foreign wanderings are reflected in the latter part of *Tristram Shandy* and in *The Sentimental Journey* through France and Italy, published just before his sudden death, Mar. 18, 1768.

STERNHOLD, THOMAS (c. 1500-49). English versifier of the Psalms. A small landed proprietor in Hampshire, he is believed to have been groom of the robes to Henry VIII. He was the author, with John Hopkins (d. 1570), of metrical versions of the Psalms, which enjoyed great popularity. The first edition contained 19 psalms, and the second,



Laurence Sterne,
British novelist
After Sir Joshua Reynolds

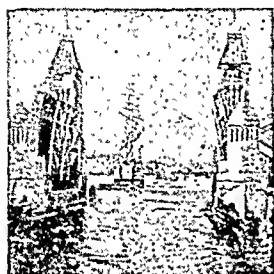


George Stephenson,
British engineer
After Briggs

1549, had 37 by Sternhold and seven by Hopkins. The complete volume, 1562, had no rival until the New Version of Tate and Brady, 1696. He died Aug. 23, 1549.

STETHOSCOPE (Gr. stēthos, chest; skopein, to look into). Medical instrument invented by R. T. H. Laennec. It enables the physician to hear sounds originating in the heart or lungs, or other parts of the body. Laennec's instrument consisted of a hollow wooden tube expanded at each end. The modern form of stethoscope consists of a chest piece, from which lead two rubber tubes terminating in bone or metal ear pieces which the physician places in his ears, the chest piece being applied to the body over the organ which is to be auscultated.

STETTIN. Town and seaport of Prussia. It stands on the Oder, 17 m. above its entrance into the Stettiner Haff, 30 m. from the



Stettin. Baum bridge, which admits ocean steamers to the Oder wharves

Baltic and 83 from Berlin, of which it is the port. The palace, built in the 16th century, formerly the residence of the dukes of Pomerania, is now the law courts. The clock in its tower, which contains the museum of antiquities, has a dial representing a moving face. Stettin has ship-building yards and engineering works and is a rly. junction. As a port Stettin developed during the 19th century, and has now extensive modern docks and wharves. It has a free harbour at Lastadie. Pop. 254,466.

STEVENAGE. Market town and urban dist. of Hertfordshire. It is 28 m. from London, on the L.N.E. Rly. The church of S. Nicholas is mainly Early English. Market day, Sat. Pop. 5,038.

STEVENS, ALFRED (1818-75). British sculptor. Born at Blandford, Dorset, Jan. 28, 1818, he studied painting in Italy, but while there turned to sculpture, and about 1841 entered Thorwaldsen's studio. He returned to England in 1843, and in 1856-57 received the commission for his greatest work, the Wellington monument in S. Paul's Cathedral, but this monument was left unfinished at his death in London, May 1, 1875. Stevens was the perfect modern interpreter of Renaissance art ideals. See Tweed, John.

STEVENS, ALFRED (1828-1906). Belgian painter. Born in Brussels, May 11, 1828, he studied under Navez there, and Roqueplan in Paris. In 1849 he painted his first notable picture, and he later frequently exhibited in the Paris Salons. He painted the elegant bourgeois life of his time, chiefly interior scenes, with furniture, costumes, etc., faithfully rendered. He died Aug. 24, 1906.

STEVENSON, ROBERT (1772-1850). Scottish civil engineer. Born in Glasgow, June 8, 1772, he was a son of Alan Stevenson, a merchant. He learnt lighthouse engineering from his stepfather, Thomas Smith. In 1797 he was appointed engineer to the Scottish lighthouse board, a position which had been filled by his stepfather. Robert Stevenson erected a number of important lighthouses, the most famous of which was the Bell Rock. Stevenson made many improvements in the methods of lighting lighthouses and lightships, and was honoured by many British scientific societies and institutions. He died July 12, 1850. His work was carried on by his sons, Thomas Stevenson and David Stevenson.

STEVENSON, ROBERT LOUIS (1850-1894). Scottish novelist. Born Nov. 13, 1850, his full name was Robert Lewis Balfour Stevenson, his father being Thomas Stevenson.

After education at private schools he entered the university of Edinburgh and in 1875 became an advocate. About this time he published his first volumes, *Familiar Studies of Men and Books* and *Virginibus Puerisque*.

In 1876 he wrote *An Inland Voyage and Travels with a Donkey in the Cevennes*. He also contributed to *The Academy* and *Vanity Fair*. To the weekly review, *London*, edited by Henley, Stevenson contributed *The New Arabian Nights*, a brilliant fantasy. In 1879, owing partly to family differences, Stevenson travelled to California and fell very ill. Nevertheless, he wrote *The Pavilion on the Links*, drafted *Prince Otto*, and began *The Amateur Emigrant*. In 1880 he married an American, Mrs. Osbourne, and with her and her son, Samuel Lloyd Osbourne, lived at Juan Silverado, above Calistoga. In 1881 Stevenson wrote *Thrawn Janet* and *The Merry Men*, and during this year and the next, 1882, wrote *Treasure Island*, which made his reputation with the great public. In 1883 he wrote *The Treasure of Franchard* and *The Black Arrow*. To the years 1884-86 belong *A Child's Garden of Verses*, the plays *Beau Austin*, *Admiral Guinea*, and *Robert Macaire*, written in collaboration with W. E. Henley, the second series (in collaboration with his wife) of *The New Arabian Nights*, and various short stories and beginnings. Then, in Dr. Jekyll and Mr. Hyde, he achieved his second popular success. In the same year, 1886, he published *Kidnapped*.

On his father's death, in May, 1887, he quitted England and went to America. There he wrote *Ticonderoga*, contributed to *Scribner's Magazine* the essays afterwards published under the title of *Pulvis et Umbra*, wrote, with S. Lloyd Osbourne, *The Wrong Box*, a farce, and began *The Master of Ballantrae*. At Christmas, 1889, the Stevensons reached Samoa, where, at Apia, Louis bought an estate, which he named *Vailima*. At Vailima he wrote the *Footnote to History*, *Catrina*, and, in collaboration with S. Lloyd Osbourne, *The Ebb Tide*. In 1893, during illness, he dictated *St. Ives*. In the winter of 1894 he was at work upon *Weir of Hermiston*, which he never finished. On Dec. 4, while talking with his wife, he suddenly lost consciousness and died. He was buried upon the summit of Mount Vaea.

STEVENSTON. Coal and iron working centre of Ayrshire. It stands near the Firth of Clyde, 28 m. from Glasgow, on the L.M.S. Rly. Here the firm of Nobel established a factory for explosives. Pop. 10,730.

STEWART (A.S. stigo, sty; weard, keeper). One who manages an estate. It is also used for attendants on ships and for officials at race meetings. In some churches, e.g. among the Methodists, certain officials are known as stewards. In England the lord high steward is one of the great officers of state, and there is also a lord steward in the royal household. See Bailiff; Jockey Club; Royal Household; Shop Steward.

STEWART, STUART, OR STEUART. Name of a Scottish family and clan of Breton origin. An ancestor, Walter, was great steward of Scotland in the time of David I. Robert (1316-90), son of the 6th steward, became



Robert Louis Stevenson
Scottish novelist

king of Scotland in 1371, and from him descended the royal line in male succession to James V (d. 1542). Through James's daughter, Mary, the succession to the crown continued in James VI, who came to the English throne in 1603. The last male representative of the house was Henry, cardinal of York, who died in 1807. See Charles Edward; Jacobites; James, the old Pretender; Royal Family, etc.

STEWART, BALFOUR (1828-87). Scottish physicist and meteorologist. Born in Edinburgh, Nov. 1, 1828, in 1856 he became an observer at the Kew Observatory, and in 1868 was awarded the Rumford medal of the Royal Society for his work on radiant heat. He became director of the Kew Observatory in 1859, and in 1870 professor of natural philosophy at Owens College, Manchester. He wrote many text-books and, with Professor Tait, published anonymously *The Unseen Universe*, 1875. He died Dec. 19, 1887.

STEWART, DUGALD (1753-1828). Scottish philosopher. Born Nov. 22, 1753, he was professor of mathematics at Edinburgh University in 1775, and proceeded to the chair of moral philosophy in 1785.

He died in Edinburgh, June 11, 1828. His philosophy upheld "common sense" as the fundamental law of human belief. The existence of the Ego is suggested by the understanding; the existence of the objects of the external world is shown by the repeated perception of the same thing and the fixed and coherent order of nature.

STEWARTON. Burgh of Ayrshire. It stands on Annick Water, 19 m. from Glasgow, on the L.M.S. Rly. There are manufactories of textiles and dyeworks, and important cattle and horse fairs are held. Pop. 2,858.

STEWARTRY. In Scotland, former name of a district administered by a steward. The term is now applied only to the stewardry of Kirkeudbrightshire (q.v.).

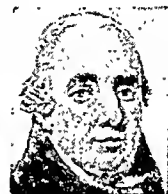
STEYN, MARTINUS THEUNIS (1857-1916). South African statesman. Born in the Orange Free State, Oct. 2, 1857, he was educated in Holland and England. Called to the bar at the Inner Temple in 1882, he practised law at Bloemfontein, becoming state attorney in 1889 and five years later a judge. President of the Free State in 1896, in 1899 he followed the Transvaal in declaring war, but after the war became a supporter of the British government. He died Nov. 23, 1916.

STEYNING. Town of Sussex. It is 4 m. from Shoreham on the S.R. The chief buildings are S. Andrew's Church, with some notable Norman work, and the grammar school, founded in 1614. It was a Roman settlement and a seaport until the sea receded in the 14th century. Pop. 1,875.

STICK INSECT (Phasmodae). Family of orthopterous (straight-winged) insects.



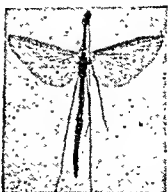
Cardinal Stewart,
Jacobite prince
After Carrier



Dugald Stewart,
Scottish philosopher



M. T. Steyn, South
African statesman



Stick Insect from
Borneo, flying

In them the body closely resembles a twig. About 600 species are known, of which four or five are found in Europe.

STICKLEBACK (Gastrosteus). Group of small fishes, which have sharp spines on the back. Three species occur in Great Britain, and are known as the three-spined, ten-spined, and fifteen-spined, the first two fresh-water species, the third marine, the first being most common. In the breeding season the male becomes resplendent with blue and red, and builds a nest in which the female lays her eggs.



Stickleback. Three-spined species on guard over the nest which it has built among the weeds

STIFF NECK, WRY NECK, OR TORTICOLLIS. Affection of the neck muscles which leads the patient to rotate the whole body instead of turning the head to look at an object. The so-called rheumatic variety is due to inflammatory changes in the fibrous tissue surrounding the muscles. Chronic torticollis may be present at birth, or due to cicatricial changes in the sterno-mastoid muscle. Spasmodic torticollis is a form in which the head is continually jerked or twisted to one side.

STIGAND (d. 1072). English prelate. A priest at Assundun, he became chaplain to Canute, and was a leading supporter of his widow, Emma. In 1043 he was made bishop of Elmham, in 1047 bishop of Winchester, and in 1052 archbishop of Canterbury. In 1070 the papal legates brought charges against him, he was put in prison, and there remained until his death, probably on Feb. 22, 1072.

STIGMA. In flowering plants, the summit of the ovary or of the style, which, if present, is a prolongation of the ovary. It is specially adapted to retain the pollen grains, which are brought to it by insects, the wind, or in self-fertilised species by the action of the stamens.

STIGMATA (Gr. punctures, marks). Name for the five wounds of Jesus Christ, in the hands, feet, and side. Between three and four hundred cases are on record of the appearance of the stigmata on those who have subjected themselves to prolonged meditation on the passion of Christ. One of the earliest cases is that of S. Francis of Assisi, and one of the latest is that of Father Pio of Foggia, 1919-20. It is probably due to auto-suggestion.

STILBITE. In mineralogy, one of the zeolite group. A hydrated silicate of calcium and aluminium, white to red in colour with a pearly lustre, it occurs in basaltic rocks, granites, and gneisses, and is found in Scotland, the Faroe Islands, Iceland, etc.

STILETTO. Dagger with a slender and narrow blade. It was much used in Italian vendettas, as it could be easily concealed. The name was given later to a pointed instrument used to make eyelet holes in garments.

STILICHO, FLAVIUS (c. 359-408). Roman soldier and statesman. A Vandal by birth, he became a notable commander and diplomatist under Theodosius I, on whose death in 395 he virtually ruled the Western empire. Guardian of Honorius, he defeated Alaric, king of the Visigoths, at Pollentia in 403 and overthrew the invading army of Radagaisus at Faesulae (Fiesole) in 405. He was murdered, Aug. 23, 408. Stilicho was the patron of the poet Claudian. Pron. Stilly-ko.

STILL. Apparatus used for distilling spirits. It consists of a vessel in which the liquid to be distilled is placed. The vapour is then conducted by means of a head or neck to the condenser, or worm, where it is cooled by water or other means until it again forms a liquid. A simple form of still is the pot still, and a more modern one the patent still. See Distillation.

STILLINGFLEET. EDWARD (1635-99). English divine. Born at Cranborne, Dorset, April 17, 1635, and educated at S. John's College, Cambridge, he became dean of S. Paul's in 1678, and in 1689 bishop of Worcester. He died March 26, 1699. His great learning was employed in opposing Nonconformist and Roman Catholic claims, and he was one of the most noted preachers of his time.

STILT (HIMANTOPUS). Wading bird of the sandpiper group, so called on account of its very long legs. There are several species, of which the black-winged stilt (*H. candidus*) occurs as a migratory bird in Europe and is occasionally found in Great Britain.

STILTON. Village of Huntingdonshire. It is 7 m. from Peterborough, on the Roman Ermine Street. Stilton cheese was called Stilton because it was brought here by the makers, in order that the stage coaches might carry it to London. Pop. 500.

STILUS (Gr. *stylos*). Writing implement used in classic times. Made of iron or other hard material, the stilus was pointed sharply at one end for inscribing on wax tablets.

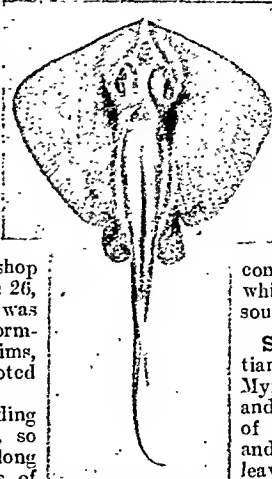
STIMSON, HENRY LEWIS (b. 1867). American politician. Born Sept. 21, 1867, in New York, he was educated at Harvard and became a lawyer. A member of the republican party, he was their candidate for the governorship of New York state in 1910 and in 1911-13 was secretary for war. He was with the American forces in France in 1917-18 and in 1927 was sent to deal with the trouble in Nicaragua. In 1928-29 he was governor-general of the Philippine Islands and in 1929 he was appointed secretary of state.

Stinchar. River of Scotland. It rises in the S.E. part of Ayrshire and flows 30 m. to the Firth of Clyde at Ballantrae.

STING. In insects, an adaptation of the egg-conduit (ovipositor) to serve as a weapon, the piercing organ being connected with glands from which acid or alkaline poison flows into the puncture. These organs reach their highest development in bees, wasps, ants, and gall-wasps. In scorpions the sting consists of a hardened and hooked point to the last segment of the narrowed hind body, within which are the poison glands. The sting of the nettle consists of a hollow hair, through which poison flows.

The so-called stinging of mosquitoes and fleas is effected by the modified mouth parts. The weaver and sting ray make punctures by a cleverly manipulated spine, and the consequent irritation results from the introduction of slime from the skin of the fish.

STING RAY. Popular name for a family of fishes (Trygonidae), in which a serrated spine is present on the whip-like tail. About 25 species are known, mainly restricted to the warmer seas, but one is found around the S. shores of England.

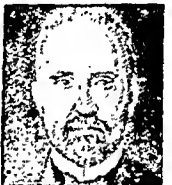


Sting Ray. The Fire Flare, showing the serrated spine on its tail

STINKHORN (*Phallus impudicus*). Fungus of the order Gastromycetae. The mycelium runs through leaf-mould, and bears at intervals knobs which become the size and shape of a fowl's egg. The top splits, and from it arises a white, spongy column with a conical cap divided into open cells, which are filled with an olive-green slime, containing the spores. This slime, which attracts flies, is the principal source of the odour.

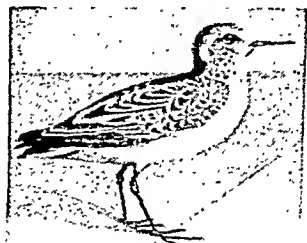
STINKWOOD (*Foetidia mauritiana*). Evergreen tree of the order Myrtaceae. A native of Mauritius and Madagascar, it attains a height of 30 ft., and has a tough, bitter, and astringent bark. The alternate leaves are oval and the solitary flowers are without petals; they are succeeded by four-sided nuts. The wood has an unpleasant smell.

STINNES, HUGO (1870-1924). German financier. Born Feb. 12, 1870, he inherited a large fortune in 1897. During the Great War he was the chief contractor for war material. After the downfall of the empire he bought up newspapers, organized shipping companies, took over engineering and mining works, and controlled the greater part of Germany's coal, iron, and steel supply. He died April 10, 1924.



Hugo Stinnes, German financier

STINT. Genus of shore birds (*Tringa*). Belonging to the plover tribe, three species occur in Great Britain. The little stint (*T. minuta*), no larger than a sparrow, has mottled brown and black plumage with white under parts. It is found about the E. coasts and nests in the N. parts of Norway.



Stint. *Tringa minuta*, a shore bird of the British coast

STIPENDIARY. Literally, one who receives a stipend. It is applied usually to paid magistrates. Stipendiaries are appointed by the crown, and must be barristers of at least five years' standing. See Magistrate.

STIPPLE (Dutch *stippel*, little point). Term in engraving, etching, and drawing, to denote the process of dotting or making small, short marks with a brush, pencil, or other medium, to produce detail or a local effect of light and shade.

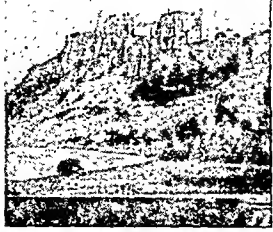
STIRLING. Burgh and co. town of Stirlingshire, Scotland. It stands on the Forth, 29 m. from Glasgow, and is served by the L.N.E. and L.M.S. Rlys. The castle, now public property, was a residence of the Scottish kings. In its precincts are the parliament house, chapel royal, and palace. Other features include the Greyfriars church, trades hall, Cowane's hospital (now the guildhall), the "auld brig," and the statue of Bruce. There are manufactories of leather, tartans, and tweeds



Sting. Enlarged needle of a bee's sting, a barbed point; b, piston; c, base

Stirling owes its importance as the key to the Highlands. Pop. 21,345.

At Stirling Bridge, Sept 11, 1297, the Scots under Sir William Wallace defeated an English army under the earl of Surrey.



Stirling Castle, formerly a residence of the Scottish kings

STIRLING, MARY ANNE (1815-95). British actress. Born in London, daughter of an army captain named Kehl, she made her debut in

1827 under the name of Fanny Clifton. After touring with her husband, Edward Stirling, she appeared at the Adelphi and Drury Lane. In 1852 she made her greatest hit as Peg Woffington in *Masks and Faces*. Later she was unexcelled as Mrs. Malaprop, and the Nurse in *Romeo and Juliet*. From 1870 she taught reciting and elocution at the R.A.M. In 1894 she married Sir C. H. Gregory, but died Dec. 31 of the following year.

STIRLINGSHIRE. Midland county of Scotland. With an area of 451 sq. m., it is served by the L.M.S. and L.N.E. Rlys. and the Forth and Clyde Canal. In the N.W. are the outliers of the Grampians (Ben Lomond 3,192 ft.).

In the centre are the Campsie Fells and Gargunnoch, Fintry, and Kilsyth Hills. The rivers are the Forth, Kelvin, and Endrick. In the shire are parts of Loehs Lomond and Katrine, and all Loeh Arklet. Agriculture is the staple industry, but there are coal and ironstone mines. Stirling, near which is Bannockburn (q.v.), is the co. town. With Clackmannan it returns two M.P.'s. Pop. (1921) 162,000.

STIRRUP (A.S. stiráp, stigráp, from stigan, to climb; ráp, rope). Loop of metal with a horizontal portion for receiving the foot of a rider and attached by a strap to the saddle. It is used to assist a horseman in mounting, and as a support while riding.

STITCHWORT (*Stellaria holostea*). Perennial herb of the order Caryophyllaceae, native of Europe and W. Asia. It has four-angled, brittle, jointed stems, which give off rigid, grass-like leaves in pairs from the joints. The beautiful white flowers are about three-quarters of an inch across. The name is also given to the chickweed. See Chickweed.



Stitchwort, a familiar British wild flower

long in body, with a tail of 4½ ins. In summer the fur is reddish brown above and white below, with white edges to ears and a black tip to tail. The winter coat is pure white or yellowish white, with the exception of the black tip to the tail.

The animal makes its home in hollow trees and holes in banks, and is fairly common in England and Scotland, but does not occur in Ireland. It preys on rats, mice, voles, hares, and rabbits. The winter fur is in great demand. See Ermine.

STOBS. Military camp in Roxburghshire, Scotland. It is 4 m. S. of Hawick on the L.N.E.R. and is used as a training ground. German prisoners were interned here.



Stoat or ermine, whose coat in winter becomes yellowish white W. S. Berridge, F.Z.S.

STOCK. Horses, cattle, etc., kept on a farm. The raising of stock divides itself into two distinct branches applicable to differing conditions. The original or normal method is that in which the more or less unimproved, hardy and slow maturity breeds exist on the food that nature provides. These are seen on unimproved uplands and in pioneer ranching in all parts of the world. The modern method aims at early maturity and quick returns, and implies artificial conditions of life, with greatly increased expenditure on pedigree animals, and high rationing on artificially grown products, imported cakes and other concentrated feeding stuffs. See Cattle



Stirlingshire. Map of the Scottish county famous for its battlefields

STOCK (*Matthiola*). Herbs and shrubby plants of the order Cruciferae, natives of S. Europe, W. Asia, N. and S. Africa. Two species are British. The popular Brompton stock is a cultivated variety of *M. incana* (British); the ten-week stock is the S. European *M. annual*, and the night-scented

stocks are *M. odoratissima* and *Hesperis tristis*. Most can be sown in the open like annuals.

STOCKBRIDGE. Town of Hampshire. It stands on the Test, 19 m. from Southampton, on the Southern Rly. It is known as an angling resort and a centre for training racehorses. Pop. 862.

STOCK EXCHANGE. A building in which stocks, shares, and negotiable securities are bought and sold. In Paris and other continental cities it is known as the Bourse. The London Stock Exchange was founded in 1773 and is owned by a company, directed by a board of trustees and managers elected by the shareholders, and derives its income from entrance fees and subscriptions of members. The members, who deal with or for the public, are managed by their own annually elected committee. Every new member must become a shareholder. In 1930 there were about 4,000 members and a number of clerks who have authority to deal for members. Every candidate must be British, or have been resident in the British Dominions for ten years.

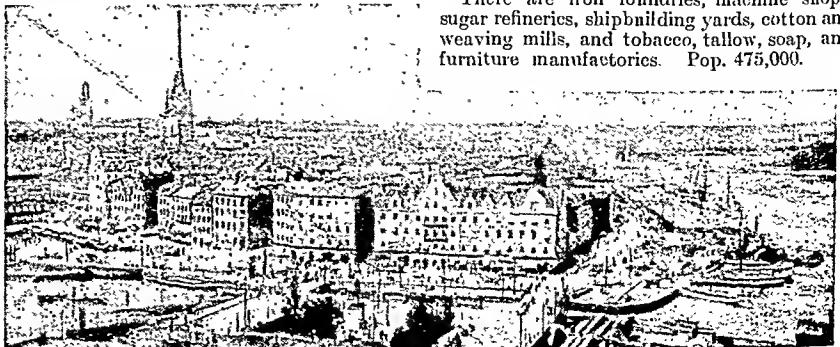
The ordinary method of business is for a broker member to ask a jobber member to "make a price" in the security his client wants to buy or sell. The jobber mentions the price at which he will buy and the price at which he will sell. The broker sends his client a contract note, and the next morning the jobber's clerk and the broker's clerk meet and check the transaction. When settlement time arrives the broker sends his client an account, and the accounts are paid on settlement pay-day. Speculators for a rise are known as bulls, those for a fall as bears. Members are not allowed to advertise. Following the Hatry (q.v.) affair, in 1930, the committee inaugurated reforms to prevent similar frauds. The office of the secretary is at 23, Throgmorton Street, London, E.C.2. See Birmingham.

STOCKHOLM. Capital and largest port of Sweden. It is situated on a cluster of islands at the influx of Lake Mälaren into the Baltic, and is connected by rly. with Malmö, Göteborg (Gothenburg), Oslo, and Trondheim. The chief buildings include the Renaissance royal palace, begun in 1697; the Gothic Riddarholm Kyrka (church), the burial place of Sweden's kings and heroes; the Riddarhus or Knights' House, with a collection of armorial bearings; and the Riksdagshuset or houses of parliament, 1898-1905. Others are the opera house, national museum, academy of science, and national library. The palace of Drottningholm, on Lofö Island, has many relics of former kings. Waxholm is a summer resort. The fortress was founded by Gustavus Vasa.

There are iron foundries, machine shops, sugar refineries, shipbuilding yards, cotton and weaving mills, and tobacco, tallow, soap, and furniture manufactories. Pop. 475,000.



Stock. Double Brompton variety

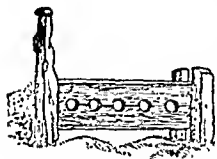


Stockholm. General view of the old town, showing steamers and other craft in the wharves along the harbour. The spire is that of the Tyska Kyrka; beyond it, to the left, is the Stor Kyrka tower

By the treaty of Stockholm, concluded between Great Britain and Sweden, Nov. 20, 1719, George I obtained for Hanover the duchies of Bremen and Verden, and Stettin for his ally, the king of Prussia. See Sweden.

STOCKPORT. Co. hor. and market town of Cheshire and Lancashire. Standing where the Goyt and Tame flow into the Mersey, it is 6 m. from Manchester on the L.M.S. and L.N.E. Rlys. The buildings include S. Mary's church, with a 13th century chancel, the modern town hall, and the grammar school, founded in 1487. There is a museum in Vernon Park. The large Sunday school is a feature of the town. There are cotton industries, foundries, breweries, and hat making factories. It sends two members to Parliament. Market days, Fri. and Sat. Pop. 125,400.

STOCKS. Punitive wooden structure for confining the legs. Stocks consisted of two pieces of wood, fitting edge to edge, with semicircles cut out of the contiguous edges just large enough to hold a man's ankles and keep them securely when the boards were locked together. Used for minor offences, stocks were in use in almost every village till the early 19th century.



Stocks, a former instrument of punishment

STOCKSBRIDGE. Urban dist. of Yorkshire (W.R.). It is 8 m. from Sheffield, and is a coal-mining centre, having also iron and steel works. Pop. 9,060.

STOCKTON-ON-TEES. Borough, market town and port of Durham. It stands on the Tees, 4 m. from Middlesbrough on the L.N.E.R. There are shipbuilding yards, blast furnaces, ironworks, foundries, machine shops, and glass works. Coal is exported. One member is sent to Parliament. From here to Darlington ran the first passenger railway in England. Market days, Wed. and Sat. Pop. 64,126.

STOCKWELL. Dist. of S.W. London. In the bor. of Lambeth, it lies between Clapham S., and N. Brixton, N. Here are Stockwell Orphanage, founded in 1867 by C. H. Spurgeon, which maintains about 500 children and has a home at Margate; a training college of the British and Foreign Schools Society; and the S.W. Fever Hospital, established 1877.

STOICISM (Gr. stoa, porch). Greek philosophical system founded at Athens by Zeno of Citium in Cyprus, about 300 B.C. It divided philosophy into logic, physics, and ethics. Logic furnishes the means of acquiring true knowledge. All knowledge comes from sensual perceptions, but only those perceptions and notions are true which carry conviction. Physics teaches the laws of the universe. There are two principles of things: passive matter and active God. God is the universal intelligence. Man's soul is partly divine, but perishable. Ethics provides rules for practical life. Virtue consists in living according to nature in rational action. Pleasure is rather an evil than a good. Suicide was permissible.

STOKE. English place-name. It is generally regarded as meaning a fenced place, connected with the word stockade. Stoke in Nottinghamshire, 4 m. from Newark, is famous as the scene of the battle on June 16, 1487, in which Henry VII defeated Lambert Simnel. Stoke d'Abernon, 3 m. from Leatherhead, Surrey, on the S.R., has in its church the oldest brass in England.

STOKE NEWINGTON. Met. bor. of London. It includes the old parish of the same name, and part of S. Hornsey, and has Islington W. and Hackney E. The 16th century church of S. Mary was superseded as

the parish church by a structure by Sir Gilbert Scott. Clissold Park, through which winds the New River, was opened July, 1889: to the E. is Ahney Park cemetery. One member is returned to Parliament. Pop. 53,080.

STOKE POGES. Village of Buckinghamshire. It is 20 m. W. of London, on the G.W.R. The chief building is the church of S. Giles, parts of which are Norman and Early English. Its churchyard is the burial place of the poet Gray and is generally regarded as the scene of his famous Elegy Pop. 1,400.



Stoke Poges. The church and its churchyard, made famous by Gray D. McLeish

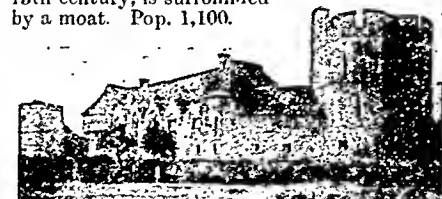
STOKES, SIR GEORGE GABRIEL (1819-1903). British mathematician and physicist. Born at Skreen, co. Sligo, Ireland, Aug. 13, 1819, he was educated at Bristol and Cambridge, where he became Lucasian professor of mathematics in 1849. He was appointed secretary of the Royal Society in 1854, was president 1885-90, and was honoured by every important scientific body. From 1887-91 he represented his university in Parliament. He died at Cambridge, Feb. 1, 1903.



Sir George Stokes British mathematician Elliott & Fry

To Stokes is due the modern theory of motion of viscous fluids, in optics his theory of diffraction opened up hitherto unexplored fields of research, and he was the practical founder of the science of geodesy and an original investigator.

STOKESAY. Village of Shropshire. The station, Craven Arms and Stokesay, 6½ m. N.W. of Ludlow, serves the L.M.S. and G.W. Rlys. The castle, a fine example of a fortified residence of the 13th century, is surrounded by a moat. Pop. 1,100.



Stokesay Castle, one of the oldest fortified manor houses in England. It dates from the 13th century

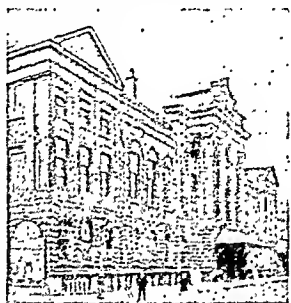
STOKESLEY. Market town of Yorkshire (N.R.). It stands on the Leven, 16 m. from Stockton-on-Tees, and has a station on the L.N.E.R. Around are ironstone mines. Market day, Mon. Pop. 1,641.

STOKE-UPON-TRENT. Co. bor. and city of Staffordshire. The centre of the Potteries district, it is served by the L.M.S. Rly. and the Grand Union Canal. The bor. includes the former bors. of Burslem, Hanley, and Longton, and the urban dists. of Tunstall and Fenton, as well as Stoke-upon-Trent proper. There is a school of science and technology. S. Peter's is chief of many churches. The staple industry is the making of pottery, before

the introduction of which in the 18th century it was a country village. Made a corporate town in 1874 and a city in 1925, in 1928 its chief magistrate was given the title of lord mayor. Three members are returned to Parliament. Pop. (1921) 275,600

STOLE (Lat. stola, long robe). Eccles. scarf. It originated in the Roman torus, is from 3 ins. to 4 ins. wide, and, when passed over the neck, each end reaches to about the knee. The ends are often ornamented, and the colour varies according to the season.

STOLL, SIR OSWALD (b. 1866). British theatre proprietor. Born in Melbourne, Australia, Jan. 20, 1866, he was educated at Liverpool. He established a number of successful theatrical undertakings in the provinces and London, initiated the War Seal Foundation in the Great War, and was knighted in 1919. He wrote The Grand Survival: a Theory of Immortality by Natural Law, 1904; The People's Credit, 1916. Freedom in Finance, 1918.



Stoke-upon-Trent. Main front of the Town Hall

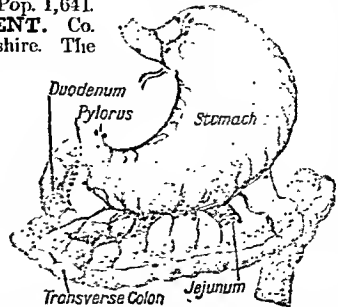
STOLYPIN, PIOTR ARKADIEVITCH (1862-1911). Russian statesman. Son of a Russian general, he was born at Baden Baden and educated at the university of St. Petersburg. Appointed administrator of the crown estates of Kovno in 1888 and governor of Grodno in 1902, he became governor of Saratov in 1903, and served with distinction through the critical winter of 1905. He was minister of the interior in 1906, and in July of the same year he succeeded Goremykin as prime minister. He was shot at a gala performance at Kiev, Sept. 15, 1911, and died three days later.



Piotr Stolypin, Russian statesman

STOMACH (Gr. stomachos, from stoma, mouth). Dilated part of the alimentary canal in which food is digested. It is conical in shape, and its base or fundus is on the left side of the body. The oesophagus (or gullet) opens into the upper part of the fundus by the cardiac orifice. The right extremity (or pylorus) passes into the duodenum, the beginning of the small intestine.

The stomach is about 10 to 12 ins. long and 4 to 5 ins. in diameter in the widest part. It lies beneath the diaphragm and is in close relation with the liver and pancreas. It is supplied by the pneumogastric nerves and the sympathetic nerve system. Externally it is almost covered by the peritoneum. Beneath this are three muscular layers, and internally the organ is lined by mucous membrane, which contains three varieties of secreting glands. The mixed secretion forms the gastric juice, which plays an important part in digestion.



Stomach. Diagram of the human organ, showing its blood and lymph supply and its relation to the intestines

STONE. Measure of weight. The standard, or imperial, British stone is 14 lb, and is used commonly in giving the weight of persons.

A butcher's and fishmonger's stone is 8 lb., that for cheese 16 lb., for lemp 32 lb.

STONE. In geology, a small fragment of rock. The name is applied particularly to small weather- or water-worn fragments, and also to portions of rocks shaped and dressed for building. Precious stones are those minerals, as diamonds, distinguished by their beauty, colour, and rarity. The word is also applied to the hard kernels of certain fruits.

STONE MONEY. Currency tokens used by the Micronesian people of Yap, one of the Caroline islands. The native name is *fei*. They are solid limestone disks, from 1 ft. to 12 ft. in diameter, with square holes for pole transport.

STONE MONUMENTS. Term denoting a homogeneous class of prehistoric structures of unburnt or slightly worked megalithic stones. Their construction still survives in India and elsewhere. See Cromlech; Dolmen; Menhir, etc.

STONE. Urban dist and market town of Staffordshire. It stands on the Trent, 7 m. from Stafford, on the L.M.S. Rly. The chief buildings are the church of S. Michael, successor of the abbey church, town hall, market hall, and a grammar school of 1558. Shoes and beer are made. Market day, Tues. Pop. 5,552.

STONE AGE. Term denoting the phase of human culture prior to the use of metals. It was adopted by C. Thomsen in 1836 when classifying Denmark's prehistoric implements into the sequence of stone, bronze, and iron. But the stone age utilised wood, bone, horn, shells, and skins, and witnessed the advent of articulate speech, fire-making, and the expression of the emotions both in ritual and art.



Stone Age. Neolithic blade with serrated edges, Deamark. Top, Neolithic flint arrowhead, Ireland. Courtesy of the Trustees, British Museum

The European stone age is divisible into eolithic, palaeolithic, and neolithic. The oldest is attested by implements revealing traces of artificial fabrication. Of the palaeolithic phase the Chellian and Acheulian form the lower, the Mousterian the middle, the Aurignacian, Solutrian, and Magdalenian the upper division. In the new stone age many edged tools were made of stones. See Aleutian Islands; Anthropology; Archæology.



Stonechat, often found on British commons

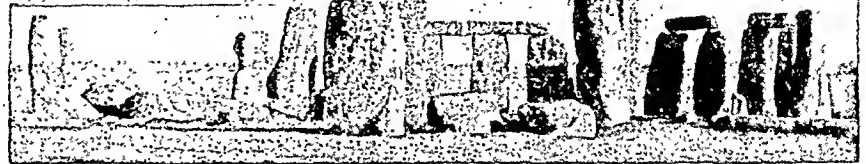
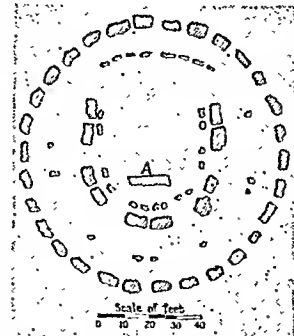
speckled with white and red. The bird is about 5 ins. long.

Stone Crop (Sedum). Popular name for a number of hardy, creeping plants of the natural order Crassulaceae. See Sedum.

STONEHAVEN. Burgh, port, and co. town of Kincardineshire. It is 16 m. from Aberdeen, on the L.N.E. and L.M.S. Rlys. It consists of a new and an old town, and has a harbour for the herring fishery. Pop. 4,856.

The 1st Baron Stonehaven (h. 1874) was governor-general of Australia, 1925-30. Previously, as Sir J. L. Baird, he was first commissioner of works, 1922-24.

STONEHENGE (A.S. Stanhengest, hanging stones). Prehistoric stone monument. Supposed by many to be connected with sun worship and in part a sepulchral monument, it is on Salisbury Plain, 2½ m. W.N.W. of Amesbury, Wiltshire. The most imposing megalithic structure in Britain, it comprised integrally two concentric stone rows on a horseshoe plan, surrounded by two con-



Stonehenge. The ancient stone monument on Salisbury Plain after its restoration in 1920. Top, plan from the same point, showing original position of existing stones; A marks the Altar stone

centric stone circles. Now much impaired, it stands within a circular earthwork, 300 ft. across, opening towards the N.E. into an embanked avenue still 200 ft. long. At the summer solstice the open part of the horseshoe faces the sunrise.

Restoration and excavations have revealed many flint axes, with quartzite hammerstones up to 6 lb. and mauls up to 64 lb., besides antler picks and other relics. The property was presented to the nation by Sir Cecil Chubb, of Salisbury, Sept. 15, 1918.

STONEHOUSE. Town of Lanarkshire, Scotland. It is 18 m. S.E. of Glasgow by the L.M.S. Rly., and has weaving and coal mining industries. Pop. 4,200.

STONELEIGH. Village of Warwickshire. It is on the Avon, about 2 m. E. of Kenilworth. Stoneleigh Abbey, the seat of Lord Leigh, is a palatial structure of Italianate design dating from the early part of the 18th century, but embracing portions of a 12th century monastery founded by Henry II and a 14th century gatehouse. It contains a fine collection of portraits and paintings by celebrated artists and stands in a well-wooded park.

Stonor. Village of Oxfordshire. It is 4 m. N.W. of Henley-on-Thames. Stonor Park is the seat of Lord Camoys. Pop. 170.

STONYHURST COLLEGE. Roman Catholic public school. In Lancashire, about 4 m. from Whalley, it is the successor of a school founded at St. Omer about 1592 by the Jesuit, Robert Parsons. This was moved to Bruges in 1762, and to Liège in 1773, while the French Revolution drove it to England. A Lancashire squire gave his house at Stonyhurst for the school, and there it has been since 1794. There is accommodation for about 400 boys. The head is the rector.

STONY STRATFORD. Market town of Buckinghamshire. It stands on the Ouse 2 m. from its station, Wolverton, on the L.M.S. Rly. The churches of S. Mary Magdalene and S. Giles were rebuilt in the 18th century. There are engineering works and corn and cattle markets. Market day, Mon. Pop. 1,992.

STOOL (A.S. *stol*, seat). Small seat without a back. One of the first articles of furniture to be made, it is usually a square or round block supported by three or four legs, and frequently upholstered. It varies in size.

The stool of repentance was a pew or seat in a Scottish church upon which those guilty of moral offences were made to stand.

STOOLBALL. English game, regarded as the ancestor of cricket. A stool was placed on the ground and defended by a player with his hand, afterwards with a stick, against a ball tossed at it by his opponent. Every time the ball was hit away it counted one to the batsman; if it hit the stool the batsman was out.

To-day a wooden bat, not more than 7½ ins. wide and shaped like a tennis racket, is used. The ball is of solid rubber. The batsman stands in front of wickets, which are pieces of wood, each 1 ft. sq., placed on poles, 4 ft. 8 ins. above the ground and pitched 16 yds apart. Ten balls go to the over. See Cricket.



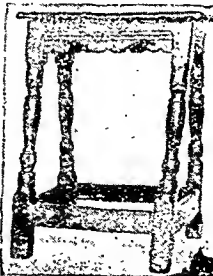
STOPES, MARIE CARMICHAEL. British scientist and writer on eugenics. Daughter of Henry and Charlotte Carmichael Stopes and educated at Edinburgh, Munich, and London University, she was appointed to the science staff of Manchester University in 1904, and three years later went to Japan, where she spent 18 months collecting fossils. In 1918 she married H. V. Roe. She wrote on botany, and became widely known by a number of works dealing with the relations between the sexes.

STORK. Family of large birds (Ciconiidae) belonging to the heron tribe. They have long, straight, and sharp beaks and long legs. The white stork (*C. alba*) is common in Central Europe, and occurs occasionally in E. England. It winters in Africa, builds its nest on a house roof or church tower, and feeds on reptiles, small mammals, insects, and offal.



Stork. White stork, common in Central Europe. W. S. Berridge, F.Z.S.

The black stork (*C. nigra*) is smaller in size and is widely distributed in Central and S. Europe, in Asia, and in some parts of Africa. It is found chiefly in swamps, where it nests in the trees. See Adjutant; Marabou.



Stool in oak, c. 1650. Courtesy of the Director, Victoria & Albert Museum

STORK'S BILL (*Erodium cicutarium*). Annual or biennial herb of the order Geraniaceae, a native of Europe, W. Asia, and N. Africa. It has oblong leaves divided into many acutely lobed segments and rosy, clustered flowers. The long tapering fruits split into five

segments, each forming a tail to a seed. The tail coils into a spiral, which by alternate lengthening and shortening under the influence of the dryness and moisture of the atmosphere forces it into the earth.

STORMONT. District in co. Down, Ulster. It is just outside the city boundary of Belfast (q.v.). The castle and grounds were purchased in 1921 as a site for the parliament house, public offices, etc., of Northern Ireland, the foundation stone being laid in 1928. They were given by Great Britain under the Act of 1920 and cost £500,000.

STORNOWAY. Seaport and burgh of Lewis, Scotland. Standing on a large modern harbour, it is 180 m. from Oban and is the chief town of the Outer Hebrides. It is a fishing centre. Pop. 4,079. See Callernish.

STOTHARD, THOMAS (1755-1834). British artist. Born in London, Aug. 17, 1755, he painted subject pictures in oils, particularly for Boydell's Shakespeare Gallery, but his real talent lay in illustrative design. Richardson's novels, and many other classics, were illustrated by him. He became A.R.A. in 1791, R.A. in 1794, and librarian in 1812. He died in London, April 27, 1834. See illus. pp. 546, 1099.

Stotinka. Bulgarian monetary unit, nominally the equivalent of a centime.

STOUR. Name of several English rivers. One rises N. of Hythe in Kent and flows past Canterbury to the sea. Its length is 40 m.

The Essex Stour rises in several headstreams which unite near Haverhill, whence it passes between Essex and Suffolk to the North Sea at Harwich. It is 47 m. long.

The Oxfordshire Stour rises about 5 m. S.W. of Banbury, and flows past Shipston-on-Stour to the Avon, near Stratford-on-Avon. Its length is 20 m. Another river of this name rises near the S.E. boundary of Somerset, and flows 55 m. to the Avon at Christchurch. The Worcestershire Stour rises near Halesowen, and joins the Severn at Stourport. Its length is about 20 m.

STOURBRIDGE. Borough and market town of Worcestershire. It stands on the Stour, 12 m. from Birmingham, on the G.W.R. The town is noted for its fine clay, which is made into firebricks, and also for its glass. Hardware and leather are manufactured, and around are coal mines. Its old name was Bedeote. Market day, Fri. Pop. 18,830.

STOURBRIDGE FAIR. Fair held at Barnwell, Cambridge, and for long perhaps the most important in England. It probably began in the 12th century, was held in Oct. and Nov., and the articles sold were cheese, wool, timber, horses, etc.

STOURPORT. Urban dist. and market town of Worcestershire. At the junction of the Stour and Severn, it is the terminus of the Staffordshire and Worcestershire canal, and has a station on the G.W.R. Market day, Sat. Pop. 4,778.

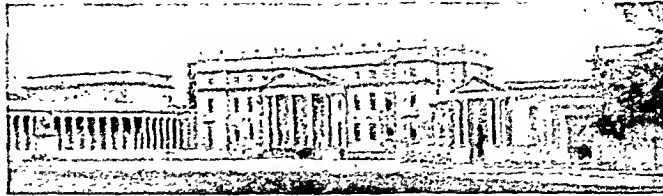
STOW, JOHN (c. 1525-1605). English antiquary. Born in London, he became a tailor at Aldgate, but from about 1560 devoted himself to antiquarian research. He was buried, April 8, 1605, in the London church of S. Andrew Under-shaft. Stow's works include notable summaries of old English chronicles, but he is chiefly remembered for his valuable Survey of London, which was edited and enlarged in 1618; 1633, 1720, and 1754.



John Stow,
English antiquary
From a print by
G. Vertue

STOWE. English public school, formerly the residence of the duke of Buckingham. It is

3 m. N. of Buckingham. Surrounded by vast grounds, the house was mainly built by Sir Richard Temple about 1660, and was



Stowe, Buckinghamshire. North front of the mansion, now a public school

the seat of the dukes of Buckingham and Chandos until 1889, when it passed to the 3rd duke's daughter, by whose order it was sold, July 4, 1921, with about 272 acres, and was opened as a public school in 1923. The Stowe MSS. were acquired by the British Museum in 1883.

STOWE, HARRIET ELIZABETH BEECHER (1811-96). American writer and abolitionist. Born in Litchfield, Connecticut, June 14,



Mrs. Beecher Stowe,
American abolitionist

1811, the daughter of Lyman Beecher, she married in 1836 the Rev. Calvin E. Stowe. Uncle Tom's Cabin, the novel which made her name and helped so largely to abolish slavery in America, appeared as a serial in The National Era, of Washington, between June, 1851, and April, 1852, and was published in book form in Boston in 1852. She also wrote Dred: a Tale of the Dismal Swamp, 1856, and Lady Byron Vindicated, 1870. She died at Hartford, Connecticut, July 1, 1896.

STOWMARKET. Market town and urban dist. of Suffolk. It stands on the Gipping, 12 m. from Ipswich, on the L.N.E. Rly. There are manufactures of chemicals and agricultural implements, and a trade in corn. Market day, Thurs. Pop. 4,245.

STOW-ON-THE-WOLD. Urban dist. of Gloucestershire. It stands on the Fosse Way, 20 m. from Cheltenham, on the G.W.R. There is an old church and in the market place a 14th century cross. Horse and cattle fairs are held. Pop. 1,200.

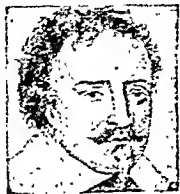
STRABANE. Urban dist. of co. Tyrone, Northern Ireland. It stands on the Mourne, 14 m. from Londonderry on the G.N.R. Industries include iron foundries and shirt factories, and there is a trade in agricultural produce. A short canal connects it with the Foyle. Pop. 5,156.

STRABO (c. 63 B.C.-A.D. 19). Greek geographer. Born in Amasia, Pontus, he travelled extensively, and in 29 B.C. settled in Rome, where he died. He was the author of two important works: (1) Historical Memoirs, in 46 books, a continuation of Polybius from 146 B.C. to the death of Caesar, lost with the exception of some fragments; (2) Geographica, in 17 books, nearly all preserved. After that of Ptolemy, it is the chief authority on ancient geography. See Polybius; Ptolemy.

STRACHEY, GILES LYTON (b. 1880). British author. Born March 1, 1880, a son of Sir Richard Strachey (1817-1903), a distinguished servant of the E. India Co., he was educated at Trinity College, Cambridge. In 1912 he wrote Landmarks in French Literature, and in 1918 Eminent Victorians, which displayed a mordant humour and marked a new method in biography. His Queen Victoria appeared in 1921, a volume on Pope in 1925, and in 1928 Elizabeth and Essex.

STRADIVARI, ANTONIO (c. 1644-1737). Italian violin maker. Born at Cremona, and apprenticed to Nicholas Amati, he at first modelled his instruments on those of his master, but about 1684 became more independent, and on the instruments of his maturest period rests his fame as the greatest of all violin makers. He made over a thousand instruments, many of which are still extant. On his labels he Latinised his name as Antonius Stradivarius. He died Dec. 18, 1737.

STRAFFORD, THOMAS WENTWORTH, 1ST EARL OF (1593-1641). English statesman. Born in London, April 13, 1593, of a great Yorkshire family, for about 14 years from 1614 he represented Yorkshire in Parliament. In 1628 he was active in promoting the Petition of Right, but it was hardly passed when he went over to the king's side. Created baron and viscount 1628, he was president of the North 1631-32 and lord deputy of Ireland 1632-39. He was created earl of Strafford in 1639.



Earl of Strafford,
English statesman
After Van Dyck

When the Long Parliament was summoned its first step (Nov., 1640) was to move for the impeachment of Strafford. But fear of the northern army and of a plot to release him and introduce Irish and Dutch troops led the Commons to pass a bill of attainder, condemning the earl to death, and on May 11, 1641, Strafford was beheaded on Tower Hill.

STRAITS SETTLEMENTS. British crown colony. It comprises Singapore, Malacca, Penang, the Cocos Islands, Christmas Island, and Labuan. Administration is exercised by a governor, assisted by an executive council of 10 and a legislative council of 13 official and 13 unofficial members. Para rubber, tin, preserved pineapples, tapioca, gambier, copra, pepper, sago, coconut oil, tanned hides, raw hides, rattans, coffee, spices, gums, and dye-stuffs are exported. Area 1,600 sq. m. Pop. (1929) 1,131,903. See Malaya.

STRALSUND. Town and seaport of Prussia. In the prov. of Pomerania, it stands on the Strelasund, 67 m. from Stettin. The town has a good harbour, and manufactures of machinery, tobacco, sugar, etc. It was a member of the Hanseatic League. Pop. 39,469.

STRAND, THE. London thoroughfare. It runs W. from Temple Bar to Charing Cross and contains two old churches—S. Clement



Strand, London, looking east from Wellington Street. Centre, church of S. Mary-le-Strand; left, Gaiety Theatre, with a wing of Bush House beyond

Danes, built by Wren, 1681, with tower by Gibbs, 1719; and S. Mary-le-Strand, by Gibbs, 1714, replacing a church of the same name, of which Thomas Becket was rector, and near the site of the famous maypole, removed 1718. On the N. side are part of the law courts, Gladstone statue, Australia House, Marconi House, Gaitey, Lyceum, Vaudeville, and Adelphi theatres, and the Strand Palace hotel. On the S. are Aldwych (tube) station, King's College, Somerset House, the Savoy hotel, Strand Lane with old Roman bath, the Adelphi, Ontario House (opened in 1930), and Charing Cross rly. stations. The Hotel Cecil was pulled down in 1930. The Strand Theatre is a London playhouse in Aldwych, W.C.

STRANG, WILLIAM (1859-1921). British painter and etcher. He was born at Dumbarton, Feb. 13, 1859, educated at University College, London, and attained remarkable distinctions as an etcher, ranging over a vast variety of subjects, and emulating Rembrandt's broad masses of light and shade. A.R.A., 1906, and R.A., 1921, he died April 12, 1921.



William Strang,
British painter

STRANRAER. Burgh and port of Wigtownshire, Scotland. It stands at the head of Loch Ryan, 59 m. from Ayr on the L.M.S. Rly. It has a large tidal harbour and regular steamer connexion with Belfast and Larne. Near the town is Lochinch, the seat of the earl of Stair. The ruins of Castle Kennedy are in the grounds, which are remarkable for their rare trees. Stranraer was made a burgh in 1596. In 1928 it was decided to set up an aircraft base here. Pop. 6,138.

STRASBOURG (Ger. Strassburg). City of France, capital of the dept. of Bas-Rhin. Standing where the Ill joins the Breusch, about 2 m. from the Rhine, it consists of an old part, with to some extent the appearance of a medieval city, and modern suburbs. It is well served by railways and canals. The cathedral, or minster, is a line Gothic edifice, built mainly in the 13th and 14th centuries, and notable for its lofty tower (465 ft.) and clock (see illus. p. 422). The university was founded in 1567. The products include locomotives, beer, chemicals, tobacco, leather, and paté de fois gras. Printing is important. Since the Great War Strasbourg has become a great port with modern wharves, a basin for oil traffic, and a great power station. Pop. 174,550.

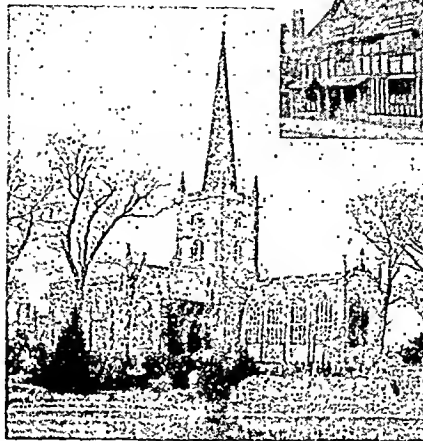
On the site of Strasbourg the Romans had their station of Argentoratum. In Sept., 1870, it surrendered to the Germans, and in 1919 it was returned to France.

STRATA FLORIDA (Latinised from Welsh Ystrad Fflur, plain of the Fflur). Village and parish of Cardiganshire, Wales. It is on the G.W.R., 5 m. from Tregaron. Four miles away, on the Teify, are the ruins of the Cistercian abbey of Strata Florida, once the largest

in Wales and a centre of learning and statecraft. Founded in 1091, it was dissolved by Henry VIII.

STRATEGY (Gr. stratêgos, a general). In warfare, the art of preparing, mobilising, deploying, concentrating, and moving forces in a theatre of war with a view to success in battles. Strategy decides when to fight, tactics decide how to fight. In both arts time is a most important factor.

The military strategist must study the nature of his forces, the means at his disposal for moving



Stratford-on-Avon. Church of Holy Trinity, in which Shakespeare is buried. Above, the poet's birthplace in Henley Street, restored 1857-58

them, their daily requirements in food, water, and munitions, and above all the cause which inspires them to effort. He must also study the theatre of war in which they are employed. The movement of armies depends upon food, transport, and water; their success in battle depends upon replenishment of ammunition. For such reasons they require lines of communication to the bases from which they are operating. The complete disintegration of an army can seldom be achieved as long as these lines of communication are secure.

Sea strategy differs from military strategy in many respects, the most essential being the fact that, unlike armies, fleets can manoeuvre round each other; but are entirely dependent upon mechanical appliances and the replenishment of fuel and lubricants for movement, and for fighting power upon replenishment of ammunition and torpedoes. They are also dependent upon bases for docking, for repairs, and for security when not under way. The strategy of air forces is as yet in its infancy.

STRATFORD. Dist. of Greater London. In the borough of West Ham, 4 m. from Liverpool Street, on the L.N.E.R., which has an important junction, machine shops, and depot here, its old name was Stratford Langthorne. The industries include the manufacture of chemicals, paint, varnish, and candles, printing, and brewing. The principal buildings include the town hall, built 1867-69, and S. John's church, 1834.

STRATFORD. City of Ontario, Canada. It stands on the Avon, 88 m. from Toronto, and is the capital of Perth County, with railway shops and a number of manufactures. Pop. 16,094.

STRATFORD DE REDCLIFFE, STRATFORD CANNING, VISCOUNT (1786-1880). British diplomatist. Born in London, Nov. 4, 1786, and educated at Eton and King's College, Cambridge, he held his first diplomatic appointment at 21. He was minister plenipotentiary at Constantinople in 1810, and negotiated the treaty of Bukarest, 1812. After holding other important appointments he served from 1825-28 and 1842-58 as ambassador to Turkey, making there the extraordinary reputation, so vividly described by Kinglake, which won him the title of the Great Elchi (Turkish for ambassador). In 1856 he persuaded the sultan to grant a decree securing rights for Christians. He received his peerage in 1852, retired in 1858, and died at Frant, Aug. 14, 1880.

STRATFORD-ON-AVON. Borough and market town of Warwickshire. Pleasantly situated on the Avon, it is 24 m. from Birmingham, on the G.W., L.M.S. and L.N.E. Rlys. The cruciform parish church of Holy Trinity, restored 1891-92, dates principally from the 14th and 15th centuries. It contains the grave of Shakespeare and that of his wife. The old guildhall was restored in 1892.

The reputed birthplace of Shakespeare in Henley Street was purchased for the nation in 1847 for £3,000, and contains a museum. New Place, in which the poet died, was destroyed in 1703, and its site purchased by public subscription in 1861 and handed over to the trustees of the birthplace. A fine statue of Shakespeare was presented by Lord Ronald Gower in 1888, and a memorial fountain was erected in 1887. Charlecot, Clopton, Ludington, Snitterfield, and Wilmeote, in the neighbourhood, have memories of Shakespeare, and at Shottery (q.v.) is the cottage of Anne Hathaway, now public property.

The Shakespeare Memorial Theatre, erected in 1878, was destroyed by fire in March, 1926, the architect of its successor being Miss Elizabeth Scott. An extensive trade in agricultural produce and cattle is carried on. Market days, Tues. and Fri. Pop. 10,427.

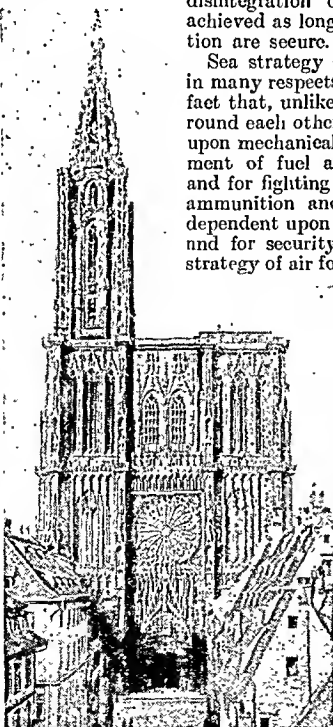
STRATHAVEN. Parish of Lanarkshire, Scotland. It is 16 m. from Glasgow on the L.M.S. Rly. Near the town are the ruins of the castle, once a stronghold of the Hamilton family. Pop. 4,207.

STRATHCLYDE. Ancient British or Welsh kingdom in S.W. Scotland. Also called Cumbria, it included the basin of the Clyde and Ayrshire, and, at an early period, Cumberland. The capital was Dumbarton. Strathclyde was not fully merged in Scotland until the 11th century.

STRATHCLYDE, ALEXANDER URE, 1ST BARON (1853-1928). Scottish lawyer and politician. Born at Glasgow, Feb. 24, 1853, and educated at Glasgow and Edinburgh, he was called to the Scottish bar, 1878. He was M.P. for Linlithgow, 1895-1913, solicitor-general for Scotland, 1905-9, lord advocate for Scotland, 1909-13, and lord president of the court of session, 1913-20. Created a baron in 1914, he died Oct. 2, 1928.

STRATHCONA. Town of Alberta, Canada, since 1912 part of Edmonton (q.v.). It stands on the Saskatchewan river. Here are the buildings of the university of Alberta.

STRATHCONA, DONALD ALEXANDER SMITH, BARON (1820-1914). Canadian politician. Born Aug. 6, 1820, at Archibestown, Morayshire, Scotland, he emigrated to Canada when 18 as a junior clerk in the Hudson's Bay Company, of which he became general



Strasbourg, France. West facade of the minster, begun in 1217

manager, and eventually governor. He was administrator of Red River Territory after the rebellion of 1869, and was one of the first representatives of Manitoba in the Dominion House of Commons. With his cousin, afterwards Baron Mount Stephen (q.v.), and others he formed a syndicate to build the Canadian Pacific Railway. Knighted in 1886, Smith accepted in 1896 the high commissionership for Canada in England. In 1897 he was made a baron, and died Jan. 21, 1914. His title descended by special decree to his daughter, whose son, Donald S. R. Howard, became baron in 1926.



Lord Strathcona,
Canadian politician
Russell

STRATHFIELDSAYE. Village of Hampshire. It is 7 m. S.E. of Basingstoke, and contains the estate granted by Parliament to the first duke of Wellington in 1817, being purchased at a cost of £263,000. Pop. 460.

STRATHMORE. Valley of Scotland. Generally it is regarded as comprising the area between the Grampian Mts. on the N. and the Lennox, Ochil, and Sidlaw Hills on the S., with a length of about 100 m.

EARL OF STRATHMORE. This is a Scottish title held by the family of Bowes-Lyon. Patrick Lyon, 9th Baron Glamis, was created earl of Kinghorne in 1606. His grandson Patrick, 3rd earl, was made earl of Strathmore and Kinghorne. John, 9th earl, took the additional name of Bowes. The family seat is the historic Glamis Castle, Angus, and the earl's eldest son bears the courtesy title of Lord Glamis. One of the earl's four daughters, Elizabeth, married Albert, duke of York, in 1923. Their family consists of two daughters.

STRATHPEFFER. Watering place of Ross and Cromarty, Scotland. It is 5 m. W. of Dingwall on the L.M.S., and is noted for its sulphur and chalybeate springs. Pop. 875.

STRATHSPEY. Scottish dance said to have originated in the valley (strath) of the Spey. It has been compared with the reel, from which, however, it differs by its more broken movements in dancing.

STRATTON. Market town of Cornwall, part of the urban dist. of Stratton and Bude. It is 16 m. from Launceston, with a station $\frac{1}{2}$ m. away at Bude (S.R.). Market day, first Tues. in month. Pop., urban dist., 3,962.

STRATUM or **BED.** In geology, name given to a formation of sedimentary rocks. Sandstones, shales, coals, and limestones are examples. See Anticline; Geology; Rock.

STRAUSS, DAVID FRIEDRICH (1808-74). German theologian. Born at Ludwigshurg, Jan. 27, 1808, and educated at Tübingen and Berlin, his chief work is his *Life of Jesus*, 1835, which caused a temporary sensation by its extreme rationalistic standpoint. He died Feb. 8, 1874.

STRAUSS, JOHANN (1825-99). Austrian composer. Born in Vienna, Oct. 25, 1825, he was the son of Johann Strauss (1804-49), a popular composer of waltz music, and outdid his father's fame with some astonishingly successful waltzes, including *The Blue Danube*, first performed in 1867. His light operas, full of flowing melodies, include *Die Fledermaus*, 1874; *Eine Nacht in Venedig*, 1883; and *Der Zigeunerbaron*, 1885. Master of waltz composition in Viennese tradition, he died June 3, 1899.



Johann Strauss,
Austrian composer
After L. Horowitz

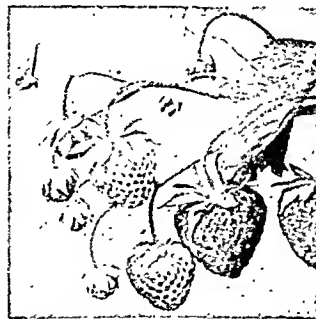
STRAUSS, RICHARD (b. 1864). German composer. Born at Munich, June 11, 1864, son of Franz Strauss (1822-1905), his remarkable F minor symphony was first performed in 1884 in New York. His tone poems, *Don Juan*, 1889, and *Tod und Verklärung*, 1890, bear witness to Wagnerian influence, and were followed by *Tyl Eulenspiegel*, 1895; *Don Quixote*, 1898; *Ein Heldenleben*, 1899; and *Die Sinfonia Domestica*, 1904. He turned to opera with *Guntram*, 1894, *Feuersnot*, 1901, *Salome*, 1905, and *Elektra*, 1909. *Der Rosenkavalier*, 1911, was in lighter vein. He first appeared in London in Jan., 1922. *Die Aegyptische Helena* was produced in 1928.

STRAVINSKI, IGOR FEDOROVITCH (b. 1882). Russian composer. Born at Oranienbaum, near Leningrad, Jan. 17, 1882, his compositions have aroused much controversy by their revolutionary character. Much of his work was written for the Russian ballet. The opera *Le Rossignol* was produced in Paris, 1914, and other notable works include the *Fireworks* orchestral piece, 1908.

STRAW. Stems of cereals (white straw crops) and also those of pea and bean (black straw crops). By chaffing or steaming pea straw it can be converted into useful fodder for milk cows and ewes. Cereal straws, especially of wheat, are employed as litter, which afterwards has an important mechanical action on the soil as a constituent of manure.

Straw-plaiting is an industry preparatory to the manufacture of straw hats. The best straw for this purpose is grown in Tuscany, being that of a special kind of wheat. The industry was introduced into England about 1600 and gave employment to thousands of females, but towards the end of the 19th century the import of plaits from Japan and Italy almost destroyed the industry in England.

STRAWBERRY (*Fragaria*). Genus of perennial herbs of the order Rosaceae. The leaf is a trefoil, rough and toothed, hairy upon the under side; the white or yellow five-petalled flowers are unisexual. The edible fruits consist of a fleshy receptacle, with numerous achenes embedded on the surface. Of the eight species, *F. vesca* is a native of Great Britain, and, but for its smaller size, is similar to the cultivated varieties. The chief garden varieties have been derived from the wild strawberry, the Virginian strawberry (*F. virginiana*), the Chilean (*F. chilensis*), and the bauthois (*F. elatior*).



Strawberry. The edible fruit in different stages of growth

STRAWBERRY HILL. London suburb. It is between Twickenham and Hampton, on the S.R. The district takes its name from the villa built in 1747 by Horace Walpole.

STREATHAM. Suburb of London. In the metropolitan bor. of Wandsworth, it is about 6 m. from London, on the S.R. It comprises the three districts of Streatham proper (associated with Dr. Johnson and the Thrales), Streatham Hill, and Streatham Common. The chief building is S. Leonard's church, and at Streatham Hill is a large theatre opened in 1929. Streatham Common is a fine open space. One member is returned to Parliament.

Streathley. Village of Berkshire. It stands on the Thames, opposite Goring, on the G.W.R., and is a boating centre.

Street. Urban dist. of Somerset. It is 14 m. from Bridgwater, on the G.W.R., and manufactures boots and shoes. Pop. 4,369.

STREET, GEORGE EDMUND (1824-81). British architect. Born at Woodford, Essex, June 20, 1824, he was a leading authority on the Gothic style. He was elected A.R.A. in 1866 and R.A. in 1871. He was architect of the royal courts of justice in London, but the nave of Bristol Cathedral is probably his best work. He died in London, Dec. 18, 1881.

STRESEMANN, GUSTAV (1878-1929). German statesman. Born in Berlin, May 10, 1878, he entered the Reichstag in 1907 as a National Liberal. He became leader of his party in 1917, and after 1918 founded the people's party, which he led very ably during 1918-22. In 1923 he became chancellor, a coalition government being formed under him. In 1924, after another short term as chancellor, Stresemann became foreign minister, and this



Gustav Stresemann,
German statesman

post he held till his death on Oct. 3, 1929. He was an author of the Pact of Locarno (q.v.).

Stretford. Urban dist. of Lancashire. It is 4 m. from Manchester, with a station on the L.M.S. Rly. Pop. 56,088.

STRETTON. Common place-name in England. Church Stretton is an inland watering place in Shropshire, 12 m. from Shrewsbury, on the G.W.R.

STRICKLAND, AGNES (1796-1874). British historian. Born in London, August 19, 1796, and educated at home, her most successful work was the *Lives of the Queens of England, 1840-48*, written in collaboration with her sister Elizabeth, as were *Lives of the Queens of Scotland and English Princesses, 1850-59*; *Seven Bishops, 1866*; and *Tudor Princesses, 1868*. Among her other works are several volumes of poetry. She died at Southwold, Suffolk, July 13, 1874.



Agnes Strickland,
British historian

and English Princesses, 1850-59; Seven Bishops, 1866; and Tudor Princesses, 1868. Among her other works are several volumes of poetry. She died at Southwold, Suffolk, July 13, 1874.

STRICTURE. Abnormal narrowing of a natural passage in the body, such as the gullet, intestine, or urethra, so as to cause obstruction. The most common causes are inflammation and new growths, e.g. cancer. When the word stricture is used without further limitation, stricture of the urethra is meant.

STRIKE. Term used in the industrial world for the act of workmen in ceasing to work in order to enforce their demands upon an employer. The opposite process is a lock-out. Strikes are usually organized by trade unions, strike pay given to those affected, and steps taken to prevent others from taking their place. At first strikes were confined to the masters and men concerned, but with the growth of combinations the numbers involved became so numerous as to compel state action.

In Great Britain a general strike was attempted in 1926 in support of the coal miners. It began on May 3 and lasted until May 12. The Government, acting under an Act of 1920, divided the whole country into districts, each under a civil commissioner. The supply of food and other essentials was maintained and, with volunteer labour, a fair service of transport was possible. In that year

146,456,000 working hours were lost by strikes in Great Britain.

Notable strikes were in Pittsburg in 1892 and in Chicago in 1894, both attended with much violence. In Great Britain the strike of the dockers in 1889 and of the coal miners in 1893 both attracted much attention. The miners and railway workers struck work in 1919 and 1921, and in 1926 there was a general strike.

The Trade Disputes Act of 1927 made a general strike illegal. Any person convicted summarily of inciting others, or acting in furtherance of an illegal strike or lock-out, may be fined or imprisoned. This Act proved unacceptable to the Labour Party, who, being again in office, announced a bill to repeal it in the King's speech, Oct., 1930.

STRINDBERG, August (1849-1912). Swedish author. Born Jan. 22, 1849, at Stockholm, the son of a small tradesman, he studied at Upsala and became teacher in an elementary school, afterwards turning to journalism and the drama. His first play, *Mäster Olof*, 1872, was unsuccessful. His first two novels were bitterly satirical at the expense of Stockholm society, and his *Marriages*, 1884, was held to be an outrage on the Christian religion. In 1885 he published *Real Utopias*. The *People of Hemsö* and *The Life of the Skerry Men* followed in 1887-88. In 1887 he wrote also *The Father*. In *Confessions of a Fool*, 1893, he tells the story of his first unhappy marriage. His *Inferno*, 1897, is a strange study in abnormal psychology. He died May 14, 1912.



August Strindberg,
Swedish author

Stripe. In military usage, mark of rank for the three lowest grades of non-commissioned officers in the army. See *Chevron*.

STROMBOLI. Volcano of the Mediterranean Sea. It rises to 3,040 ft. on the north-easternmost of the Lipari Islands, Italy, and is continuously in a mild form of activity. Pron. Strómbolly.

STROMNESS. Burgh and port of the Orkney Islands, Scotland. It stands on the S.W. coast of Pomona, 14 m. W.S.W. of Kirkwall, is a summer resort, and has a good natural harbour. It conducts a herring fishery and carries on ship repairing, distilling, and rope making. Pop. 1,665.

STRONGBOW. Name of Richard de Clare, 2nd earl of Pembroke (d. 1176). In 1170 he went to Ireland, and, after subduing Waterford and Dublin, married Eva, daughter of the king of Leinster, succeeding to the kingdom in 1171. His exploits marked the beginnings of the English dominion in Ireland.

Strongbow was the name of a British destroyer which, along with the *Mary Rose*, was sunk in action in the North Sea by a German naval force, Oct. 17, 1917.

STRONTIUM. One of the metallic elements. Its chemical symbol is Sr, atomic weight 87.63, and atomic number 38. One of the calcium group of elements, it is a hard yellowish metal, malleable and ductile, oxidises easily on exposure to the air, and burns with a brilliant crimson flame. It was discovered by Davy in 1808. It occurs in mineral form in celestine and strontianite, and in small quantities in a few other minerals.

Strontium forms the monoxide SrO and the dioxide SrO_2 . The hydroxide is used in the beet-sugar industry for the separation of sugar from beetroot molasses. In medicine, the bromide, iodide, salicylate, and lactate are used for diabetes, Bright's disease, rheumatic and other affections.

STROOD. District of Rochester, in Kent, on the S.R. The two parishes, Strood intra and Strood extra, stand on the left bank of the Medway, opposite Rochester proper.

STROUD. Market town and urban dist. of Gloucestershire. At the junction of the Slade and Frome, it is 12 m. from Gloucester, on the G.W. and L.M.S. Rlys. A centre of the woollen manufacture since the 16th century, Stroud has a number of cloth mills and is noted for its scarlet dyes. The town has also saw mills, breweries, and iron foundries. Market day, Fri. Pop. 8,561.

Stroud is the name of a township of New South Wales. It is 113 m. N. of Sydney by rly., in the well-timbered Port Stephens dist., with the Copland goldfield. Pop. 1,100.

Stroud Green. Residential suburb of N. London. It is in the bor. of Hornsey, $\frac{3}{4}$ m. from King's Cross, on the L.N.E.R. See *Hornsey*.

STRUTT, JEDEDIAH (1726-97). British inventor. The son of a farmer, he was born at Blackwell, Derbyshire, July 28, 1726. About 1755, with his brother-in-law, William Woollett, he invented a machine by which ribbed hosiery could be produced. Strutt was next associated with Richard Arkwright in spinning cotton, in which other of his inventions were utilised. As the result he amassed a large fortune before he died at Derby, May 6, 1797.

Joseph Strutt (1749-1802) was the author of a notable work entitled *The Sports and Pastimes of the People of England*, 1801.

STRYCHNINE. Alkaloid prepared from the seeds of *Strychnos nux-vomica* and other species of *Strychnos*. It is a white, inodorous crystalline powder, almost insoluble in water, with an intensely bitter taste. In medicine, strychnine and its derivatives are used as a stomachic and carminative, to stimulate the flow of gastric juices, and in feebleness of digestion. Strychnine is a valuable cardiac stimulant and a respiratory stimulant. The alkaloid is exceedingly poisonous.

STUART, LADY ARABELLA (1575-1615). English princess. Daughter of Charles Stuart, earl of Lennox, grandson of Margaret, sister of Henry VIII, Arabella stood next in the succession to James and his family when Elizabeth died. She was the figurehead of a conspiracy in 1603. In 1610 she married secretly William Seymour, afterwards duke of Somerset, and with her husband was arrested by James I. Both escaped, but Arabella was retaken near Calais and imprisoned in the Tower, where she died insane, Sept. 25, 1615.



Lady Arabella Stuart,
English princess
After van Somer

Stuart is an alternative spelling of Stewart (q.v.), the name of the later Scottish kings.

STUBBS, WILLIAM (1825-1901). British historian and prelate. Born at Knaresborough, June 21, 1825, he was educated at Ripon Grammar School and Christ Church, Oxford, where he was regius professor of modern history 1866-84. He was bishop of Chester 1884-87 and bishop of Oxford 1888-1901. He died at Oxford, April 22, 1901.

Stubbs's *Constitutional History of England*,



Jedediah Strutt,
British inventor
After J. Wright



William Stubbs,
British historian
Elliott & Fry

1875-78, takes the story down to 1485, and is one of the most solid achievements in British scholarship. He also selected and edited a volume of *Select Charters*.

STUDD. English amateur cricketing family. Charles T. Studd, the most prominent member, was born Dec. 2, 1860. Educated at Eton and Cambridge, he played for Middlesex, and was chosen for England v. Australia at the Oval in 1882. In both 1882 and 1883 he scored more than 1,000 runs and captured upwards of 100 wickets. In 1884 he went as a missionary to China.

Sir John Edward Kynaston Studd (b. July 26, 1858) was captain of the Cambridge eleven in 1884. Since 1903 president of the Regent Street Polytechnic, he was sheriff of London 1922-23, alderman in 1923, and lord mayor in 1928-29. In 1929 he was made a baronet.

STUPA (Sanskrit, mound). Dome-shaped structure erected over relics of Buddha or his sainted followers, or commemorating Jain or Buddhist events. The Hindustani variety is *tope*. Outstanding examples are at Sanchi, Bharhut, Amaravati, and Peshawar, where was found in 1909 a casket containing reputed Buddha relics. Pron. *stoopa*.

STURDEE, SIR FREDERICK CHARLES DOVETON (1859-1925). British sailor. Born June 9, 1859, he entered the navy, 1871, and was chief of the war staff, 1914-15. Lord Fisher sent him to the Pacific to find and defeat von Spee. The crushing defeat of the German squadron off the Falkland Islands followed on Dec. 8, 1914. In the battle of Jutland Sturdee was in command of the fourth battle squadron. He was commander-in-chief at the Nore, 1918-21. Promoted rear-admiral, 1910, and admiral, 1917, he was made admiral of the fleet, 1921. Knighted in 1913, he was created a baronet, Jan. 1, 1916. In 1919 he received a grant of £10,000. He died May 7, 1925.



Sir Doveton Sturdee,
British sailor
Russell

STURGEON (*Acipenser sturio*). Large ganoid fish of the family *Acipenseridae*. A native of the N. Atlantic and the principal rivers opening thereon, it is an irregular visitor to the British estuaries. It varies usually from 8 ft. to 9 ft. in length. A bottom fish, it obtains its food by grubbing with its snout in the sand and mud, obtaining worms and other invertebrates. It ascends the rivers for spawn-



Sturgeon, known as a royal fish. All caught in British rivers belong to the sovereign

ing. An Act of Parliament of Edward II constituted the sturgeon a "royal fish."

About twenty species are known, and half the number occur in Europe. The largest (*A. huso*) occurs in the Caspian, the sea of Azov, the Black Sea, the Danube, etc. Vast numbers are taken to be eaten fresh, smoked, or salted. The roe, salted and dried, forms caviare, and the air-bladder is made into isinglass.

STURRY. Village of Kent near Canterbury. The 16th century manor house was bought by Lord Milner, and given by Lady Milner to King's School, Canterbury. The junior school was moved there, and it is known as Milner Court. Pop. 1,386.

STUTT GART. Capital of Württemberg, Germany. It stands near the Neckar, 127 m. from Frankfurt-on-Main. A fine town with many notable buildings, an important

technical high school, and a large library, it manufactures chemicals, leather, and beer, and is a publishing centre and a rly. junction. It is also a banking and trading centre. An early residence of the count of Württemberg, it became the capital about 1490. Pop. 343,048.

STYE. Little abscess at the root of one of the eyelashes, caused by infection of the sebaceous glands in the margin of the lid. There is first a red and very painful swelling at the root of the lash, which in the course of a few days becomes yellowish on the top and bursts, the discharge of matter relieving all the symptoms. Treatment consists in pulling out the affected lash and applying hot fomentations to the eye. See Eye.

STYRIA. Formerly a duchy of the Austrian Empire, now a division of the republic of Austria (q.v.). About half the area is forest and a fifth arable, chiefly devoted to wheat, rye, oats, and barley. Graz is the capital. In the N.E. the Semmering Pass carries the rly. from Vienna. In the break-up of the dual monarchy Styria decreased in area from 8,670 to 6,323 sq. m., losing the S. portion to Yugoslavia. The Styrian Alps, a section of the E. Alps, stretch to the N.E. between the valleys of the Mur and the Enns.

Styx. In Greek mythology, river of Hades, the abode of the dead. Its waters were poisonous. See Charon

SUAKIN or **SUAKIM.** Port of the Anglo-Egyptian Sudan. It is situated partly on a coral islet in the Red Sea and partly on the mainland, and is connected by rail with Athara Junction (308 m.) and with Port Sudan (47 m.) Since the construction of Port Sudan, Suakin's value as a port has declined. It was occupied by the Egyptians when their power was extended over the Sudan. Pop. 8,000.

SUBCONSCIOUSNESS. Psychological term with two different shades of meaning: (1) a lowered state of consciousness, in which perception is weaker and less distinctive; (2) actions of the mind which cannot be traced by the observation of one's own mental state, mental processes unaccompanied by consciousness. Instances of the latter are absent-mindedness, the involuntary repetition of certain actions, the resumption of a habit which changed environment renders undesirable. These processes tend to the abnormal as exhibited in somnambulism, an hypnotic condition, hysteria, or in cases of drug-influence. The terms subliminal and marginal are used in much the same sense.

SUBMARINE. Vessel which keeps the surface of the sea normally, but is built to operate below the surface when required. As a craft designed for fighting, she submerges to

secure invulnerability. In that position she makes surface observations through her periscopes. Her chief weapon is the torpedo, but modern submarines have one or more heavy guns mounted for horizontal and anti-aircraft fire. These weapons can be withdrawn within the hull before submersion, or their bores can be made completely watertight. Submerging is effected by admitting water into the ballast and trimming tanks, a reserve of buoyancy being always retained to prevent the submarine from going to the bottom.

Rapid submersion is assisted by hydroplanes, or horizontal rudders. When it is desired to rise, the tanks are blown out by the use of electric pumps. Diesel or other heavy oil engines drive the submarine on the surface up to a speed of about 17 knots and, while cruising, accumulators are charged for submerged propulsion at a speed of about 10 knots.

The British submarines *Oswald*, and *Otis*, completed in 1929, have a length of 283½ ft. and a beam of 29·8 ft.; the displacement is 1,540 tons (2,030 tons submerged). The speed on the surface is 17 knots (4,400 h.p.) and when submerged, 9 knots (1,320 h.p.). They carry a crew of 52, the armament consisting of eight torpedo tubes and one 4-in. gun. The *X.1*, completed in 1925, has a length of 363½ ft., and carries a crew of 100. The surface displacement is 2,525 tons, h.p. 7,000, and speed 19½ knots. There are six torpedo tubes, four 5·2-in. guns, and two Lewis guns.

At Washington in 1922 and at Geneva in 1928 Great Britain proposed the abolition of the submarine, but the suggestion, was negatived. By the London Naval Treaty (q.v.), 1930, Britain, U.S.A., and Japan each agreed to scrap a specified number of submarines. See Conning Tower; Navy; Periscope

SUBPOENA (Lat. under a penalty). Writ issued out of a court of justice commanding the person to whom it is addressed to be present in court at a certain time, under a penalty if he fails to comply. Used as a means of compelling the attendance of witnesses, it is called *sub poena ad testificandum*. A subpoena duces tecum is a writ ordering a witness to bring to court documents or other things in his possession.

SUCCINIC ACID (Lat. succinum, amber). Solid acid, usually prepared by the dry distillation of amber. It is a yellow-coloured crystalline substance. See Amber.

SUCHAU or **SOOCHOW.** Town of China, the provincial capital of Kiang-su. It is on the Grand Canal, 54 m. N.W. of Shanghai, with which it is connected by rly. and the Suchau Creek. Its walls are about 30 ft. in

height and have a circuit of some 12 m. Without the walls are extensive suburbs. Numerous canals wind through the city. Suchau is an important centre of the silk industry, and its minor industries include the production of metal goods, lacquer, and glass. It was opened to foreign trade in 1890. Pop. 350,000.

SUCK. River of the Irish Free State. It rises in Lough O'Flynn, Roscommon, and flows 60 m. between that co. and Galway to the Shannon at Shannonbridge.

SUCKER. In gardening, term applied to a shoot making growth from the root or ground level of a shrub or tree. Removed in autumn and replanted, they form a valuable means for increasing stock.

SUCKING FISH. Name popularly applied to several groups of fishes distinguished by the presence of a disk on the upper part of the head, or on the breast, which acts as a sucker and enables the animal to attach itself to any object. About seven species occur in British waters. They attach themselves to moving objects, such as ships, sharks, and turtles, as well as stones.

SUCKLING, Sir John (1609-42). English poet and courtier. Born at Whitton, Middlesex, and educated at Trinity College, Cambridge, he served under Gustavus Adolphus, was knighted in 1630, raised a troop of horse to aid Charles I against the Scots, and was M.P. for Bramber. He is best remembered by his lyrics, including *Why so pale and wan, fond lover?* He is believed to have invented cribbage.



Sir John Suckling, English poet

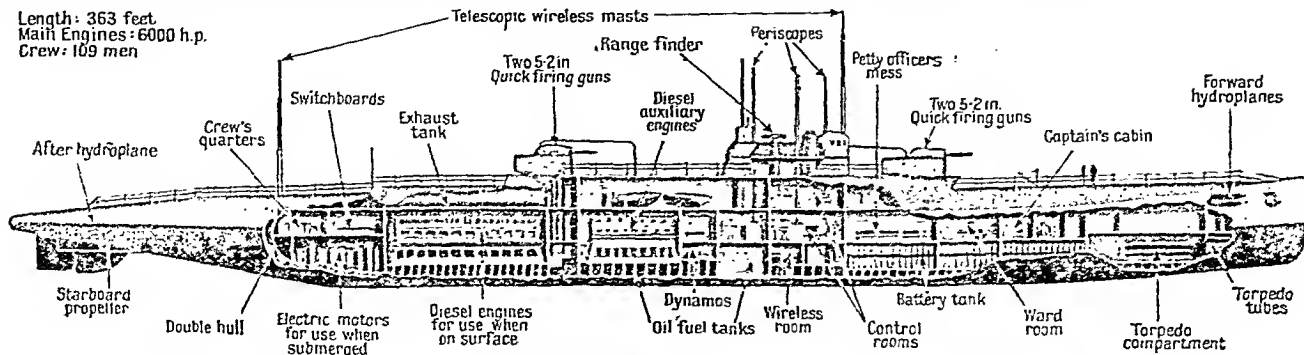
SUCRE. Official capital of the republic of Bolivia. It is on a plateau of the E. Cordillera of the Andes, 45 m. N.E. of Potosí. The cathedral (1553), the president's palace, and the university, by repute the oldest in S. America, are the chief buildings. Agriculture is the principal industry and mining is carried on. Founded by Spaniards in 1536, it was originally called Ciudad de la Plata, then Chuquisaca. Here Bolivian independence was proclaimed in 1825, and the city took its modern name from Antonio Sucre, the first president of the republic. Pop. 33,983.

SUDAN or **SOUDAN.** THE (Arabic Beled-es-Sudan, land of the Blacks). Region of N. Africa. Including French Sudan, it stretches from the Atlantic to the Red Sea and Abyssinia, and from the Sahara and Egypt in the N. to the central equatorial regions. It is divided into the Western and Central Sudan, and the Anglo-Egyptian Sudan (q.v.). Most of Western and Central Sudan is French.

French Sudan is the name given in 1920 to the colony of French W. Africa formerly known as Upper Senegal-Niger. It is bounded N. by the Algerian sphere, S. by the frontiers of the Ivory Coast and the colony of the Upper Volta, E. by the colony of the Niger, W. by



Stuttgart. Old Palace Square, with the Stiftskirche and the Schiller statue



Submarine. Sectional diagram of the British submarine X.1, showing the double hull and arrangements of the interior for navigating and fighting

Mauretania, and the frontier of French Guinea. The exports include ground nuts, cattle, rubber, gum, and skins. Bamako is the capital. The area is 300,331 sq. m. Pop. about 2,630,000. See map, p. 88.

SUDBURY. Residential district of Greater London. In the co. of Middlesex, and part of the Wembley urban district, it is served by the L.M.S., Bakerloo (Tube), L.N.E., and District Rlys., and has tram and bus services.

SUDBURY. Borough and market town of Suffolk. It stands on the Stour, 16 m. from Bury St. Edmunds, on the L.N.E.R. There are three old Perpendicular churches and many interesting half-timbered houses. The manufactures include matting, flour, malt, bricks, etc. Flemings introduced the manufacture of woollens here in the 14th century. Market day, Thurs. Pop. 7,046.

Sudbury. Town of Ontario, Canada, 440 m. from Montreal. There are important nickel mines in the vicinity. Pop. 8,621.

SUDELEY. Village of Gloucestershire. It is 1 m. from Winchcombe, and has an old church, S. Mary's. Sudeley Castle was built by Thomas Boteler, Lord Sudeley, in the 14th century, and passed to Sir Thomas Seymour, fourth husband of Catherine Parr.

SUDERMANN, HERMANN (1857-1928). German dramatist and novelist. Born Sept. 30, 1857, he achieved fame with his first play, *Die Ehre*, 1888, which was followed in the same year by a brilliant novel, *Frau Sorge*. His principal dramas are *Sodom's Ende*, 1890; *Heimat*, 1893 (Eng. trans. Magda, 1895); *Johannes*, 1898; *Es Lebe das Leben*, 1902 (Eng. trans. *The Joy of Living*); *Strandkinder*, 1910; *Der Bettler von Syrakus*, 1911; and *Der Gute Ruf*,



H. Sudermann,
German dramatist

1913. He died Nov. 23, 1928.

SUETONIUS (70-140). Roman writer, whose full name was Gaius Suetonius Tranquillus. He was private secretary to the emperor Hadrian. His *Lives of the Twelve Caesars*, published in A.D. 120, is the only one of his voluminous writings which has survived intact. The *Lives* do not rank high as literature, but are a mine of information about the emperors of the 1st century A.D.

SUEZ. Town of Egypt. It is situated at the S. end of the Suez Canal, and connected by rail with Cairo, Port Said, and with Port Ibrahim, at the S. entrance to the canal. Pop. 40,523.

The Gulf of Suez is a gulf of the Red Sea

between the Sinai peninsula and Egypt. Its length is about 190 m.

SUEZ CANAL. Ship canal between the Mediterranean and the Red Sea. The concession for its construction was given by Said Pasha to Ferdinand de Lesseps, Nov. 30, 1854; it was for 99 years from the date of opening. The company was launched with a capital of £8,000,000 in 400,000 shares of £20, but the issue was only saved from failure by Said taking up the balance of shares. Work was begun on April 25, 1859, and the canal opened Nov. 17, 1869, at a cost of about £17,000,000. In 1875 Said's successor, Ismail Pasha, sold his shares to Britain for £4,000,000.



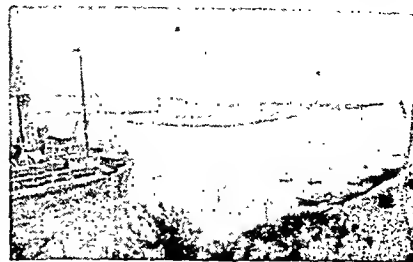
Suez Canal. Map showing course from Port Said to Suez

waterless, water is supplied by the Sweetwater Canal. In 1928 the total net tonnage exceeded 31,900,000, of which the share of Great Britain was more than 18,000,000.

SUFFOLK. Eastern co. of England. It has a coastline of 62 m. and an area of 1,482 sq. m. In the N. are Oulton Broad and other sheets of water. The rivers include the Waveney, Deben, Orwell, Stour, Blyth, and Lark. Agriculture is the chief industry, but fishing is also important. The co. is noted for its horses. Cereals are largely grown; sheep and cattle are reared; and there are many dairy and poultry farms. The L.N.E. Rly. serves the county.

Ipswich is the co. town, Lowestoft being the next important place. The co. is in the diocese of St. Edmundsbury and Ipswich. Five members are returned to Parliament. Suffolk is divided into two administrative counties, East and West, each with its own county council. Pop. 400,000.

SUFFOLK, DUKE or. English title borne by the families of Pole, Brandon, Grey, and Howard. The first earl was Robert de Ufford (d. 1369), who distinguished himself at Poitiers. Charles Brandon (d. 1545), another duke, was with Henry VIII on the Field of the Cloth of Gold. Henry Grey (d. 1554), the last



Suez Canal. Stretch of the waterway, looking north

duke, was father of Lady Jane Grey. In 1603 the earldom was given to Thomas, a son of Thomas Howard, 4th duke of Norfolk. In 1626 his younger son was made earl of Berkshire, and in 1745 the 4th earl of Berkshire inherited the earldom of Suffolk. Charles Howard (b. 1906) bears the title of earl of Suffolk and Berkshire.

Suffolk Punch. Powerful breed of horse used for agricultural purposes. 'See Horse.

SUFFOLK REGIMENT. Regiment of the British army. Formerly the 12th Foot, it originated in a company established to garrison Windsor Castle in 1690; the company was enlarged and became a regiment in 1685. It took part in the last siege of Gibraltar, 1779-83, an event commemorated by the castle and key on the badge, and has many other battle honours. The regiment had a large number of battalions in the Great War. The 1st battalion distinguished itself around Frezenberg in May, 1915. The 4th fought at Neuve Chapelle, 1915; the 8th shared in the desperate fighting in the latter stages of the Somme battle, 1916. Other battalions rendered equally splendid services. The 9th particularly distinguished itself at Loos, Sept., 1915. Its depot is at Bury St. Edmunds.



Suffolk Regimental badge

SUFFRAGAN (late Lat. *suffraganeus*, from *suffragari*, to vote for, support). Eccles. term applied to bishops. All bishops are suffragan to the archbishop of their province, but specifically suffragans are bishops consecrated to act as deputies for or assistants to a bishop in a particular part of his diocese.

SUFFRAGE (Lat. *suffragari*, to vote for). Literally, the right to vote. In the U.K. the Reform Acts of 1832, 1867 and 1885 and the Representation of the People Acts of 1918 and 1928 extended the suffrage as far as voting for members of parliament was concerned, while the establishment of a representative system of local government created a wide suffrage in local affairs. See Franchise; Reform; Woman.

SUGAR. Sucrose or saccharose extracted from cane, beet, maple, palm, and other plants. Raw cane and beet sugars contain from 90 to 98 p.c. of sucrose. Refined sugar contains about 99.9 p.c. of sucrose, in the form of granulated, cube, loaf, castor, or icing sugars. Sucrose and other carbohydrates are manufactured in the leaves of plants, sunlight and heat being essential agents. The sucrose dissolves in the plant sap, and is thus stored in the long stem of the sugar cane and in the tap-root of the beet.

The sugar cane is a native of the old world tropics and has been introduced into most tropical and sub-tropical countries. It belongs to the same botanical order as wheat, oats, corn, and maize, but attains a height of from 15 to 20 ft. It is propagated from cuttings of the stem and matures in about 270 days near the equator, but more slowly in sub-tropical countries. After the ripe canes are cut the buried root-stock produces new crops (called



Suffolk. Map of the maritime county of East Anglia

ractions) for several successive years. The jointed stem varies in colour from pale yellow and green to deep purple. Each joint bears a single leaf, from 3 to 4 ft. in length, but the lower leaves wither and are sometimes stripped off by hand during ripening of the stem. Most varieties produce a feathery tuft of minute flowers borne on a stalk, called the arrow, ultimately producing seed.

Juice is extracted from the sugar cane by crushing the stems. The crushed fibre (bagasse) is used as fuel under the factory boilers.

The estimated world production of sugar for 1929-30 was 17,537,600 tons cane sugar and 9,229,300 tons beet sugar. The European production (beet sugar) was 8,300,000 tons, of which Gt. Britain provided about 300,000 tons. For the 1930-31 season Gt. Britain, with a beet area of 346,700 acres, was expected to produce 400,000 tons of sugar. See Beet; Maple.

SUIR. River of the Irish Free State. It rises in the N. of Tipperary and unites with the Barrow in Waterford Harbour. It is 85 m. long, and is navigable for barges to Clonmel. It has a salmon fishery. Pron. Shure.

SUKHUM. Town and harbour of the Socialist Soviet republic of Georgia, on the Black Sea, capital of the republic of Abkhazia. It is said to occupy the site of the ancient Dioscurias. Pop. 20,032.

Sulby. Village in the Isle of Man. It is famous for its woollen mill, founded early in the 19th century by two Yorkshiremen.

SULGRAVE. Village of Northamptonshire. It is 2½ m. N.W. of Helmdon. Sulgrave Manor was purchased in 1539 by Lawrence Washington, ancestor of George Washington, and remained the family home until 1610. In commemoration of the centenary of the peace of Ghent, the manor house, at that time a farm house, was bought by the British Peace Centenary Committee (later called the Sulgrave Institution) and opened as a Washington Museum, 1914. In the church of S. James are some brasses of the Washington family.



Sulgrave, Northamptonshire. The old manor house formerly occupied by the Washington family

SULINA. Seaport of Rumania. It is built on piles at the mouth of the Sulina arm of the Danube, and is about 120 m. N.E. of Constanta. Pop. 10,000.

SULLA, LUCIUS CORNELIUS (138-78 B.C.). Roman soldier and statesman. Of noble birth, he overthrew Marius and Mithradates, king of Pontus, and was appointed dictator. He revolutionised the constitution, made the Senate supreme, reformed the judiciary and executive, but at an unparalleled height of power resigned all his offices in 79 and retired to a life of debauchery. Intellectually above any of his contemporaries, Sulla was a



Lucius Sulla, Roman soldier
Vatican Museum

master of war and statecraft, steeped in culture, perfectly self-reliant, but absolutely devoid of morality.

SULLIVAN, SIR ARTHUR SEYMOUR (1842-1900). British composer. Born in London, May 13, 1842, he entered the Chapel Royal choir in 1854, studied at the R.A.M. and at



Sir Arthur Sullivan,
British composer
Elliott & Fry

Leipzig, 1857-61, and is best known by his collaboration with Sir W. S. Gilbert (q.v.) in their famous light operas from *Thespis*, 1871, to *The Grand Duke*, 1896. His other work included an oratorio, *The Golden Legend*, 1886; a grand opera, *Ivanhoe*, 1891; incidental music for several Shakespearean plays; and some of his songs, e.g. *The Lost Chord*, 1877, were very popular. Knighted in 1883, Sullivan died in London, Nov. 22, 1900.

SULLIVAN, BARRY (1821-91). Irish tragedian. Born at Birmingham, July 5, 1821, he made his debut at Cork in 1840, and his first appearance in London at the Haymarket Theatre, Feb. 7, 1852, as Hamlet. He acted in America and Australia and at Drury Lane, London. He died May 3, 1891.

SULLIVAN, JOHN LAWRENCE (1858-1918). American pugilist. Born at Boston, U.S.A., Oct. 15, 1858, he knocked out Paddy Ryan, Feb. 7, 1882, in nine rounds, beat Charlie Mitchell, May 14, 1883, in three rounds at New York, and in 1888 fought a draw with him of 39 rounds at Chantilly. In 1889 he won the heavy-weight championship of America by beating Jake Kilrain in 75 rounds at Richburg. He was defeated by Jim Corbett, Sept. 7, 1892, at New Orleans, and died on Feb. 2, 1918.



J. L. Sullivan,
American pugilist

SULLY, MAXIMILIEN DE BÉTHUNE, DUC DE (1560-1641). French statesman. Born at Rosny, near Mantes, Dec. 13, 1560, as chief adviser to Henry of Navarre he did much to improve the wretched condition of France. Taxes were lightened, and the wasteful and corrupt system of collecting them reformed; roads and bridges were built, and something was done for agriculture, while the defences of the country were not neglected. Made a duke in 1606, he remained throughout life a Protestant. He died Dec. 22, 1641, leaving some valuable Memoirs.

SULLY-PRUDHOMME, RENÉ FRANÇOIS ARMAND (1839-1907). French poet. He was born in Paris, March 16, 1839. He began his literary career as a disciple of Leconte de Lisle (Stances et Poèmes), but his later work departed widely both by its intense subjectivity, e.g. *Les Solitudes*, *Les Vaines Tendresses*, and by its didacticism, e.g. *La Justice*, *Le Bonheur*, from the principles of the Parnassian school. He was elected to the Academy in 1881, was awarded a Nobel prize for literature in 1901, and died Sept. 6, 1907.

SULPHATES. Name given to certain salts of sulphuric acid. The natural sulphates include Epsom salts, gypsum, celestine, barite, and chalcantinite. Sulphate of ammonia is a nitrogenous manure, produced as a by-product of gas works. It is of particular value for barley, potatoes, and permanent grass.

SULPHUR. One of the non-metallic elements. Its symbol is S, its atomic weight 32.06, and its atomic number 16. It occurs in the free state in volcanic districts, and in

combination with other elements in all parts of the world. Iron pyrites, galena, blende, and cinnabar are among the more important sulphide ores; gypsum and heavy spar typify the naturally occurring sulphates. Proteins, certain essential oils, and some mineral oils contain small proportions of sulphur. Most of the sulphur of commerce is derived from deposits in the oil districts of the U.S.A. and from the volcanic deposits on the Mediterranean border.

Ordinary sulphur is a bright yellow crystalline substance, without appreciable taste or odour; sp. gr. 2.05. It is insoluble in water; heated in air to 260° C., it takes fire and burns with a blue flame, producing sulphur dioxide, SO₂, together with a little sulphur trioxide, SO₃. It combines directly with several other elements, forming sulphides. The chief uses of sulphur are in the manufacture of sulphuric acid, carbon disulphide, gunpowder, the vulcanisation of indiarubber, and in medical treatment of skin diseases.

SULPHURIC ACID. Oil of vitriol, H₂SO₄. There are two chief processes of manufacture, one in which sulphur dioxide, nitric acid vapour, air, and steam are mingled in a chamber, and produce by their reaction clouds of sulphuric acid; and the other in which sulphur trioxide fumes are passed into water to form the acid.

Concentrated sulphuric acid is a heavy, colourless, odourless liquid of oily consistence, sp. gr. 1.84. When mixed with water it generates a great deal of heat. Alcohol, on being heated with it, loses the elements of water and produces ether or ethylene. Sulphuric acid is very corrosive and a powerful poison. Calcined magnesia is the best antidote, but sodium bicarbonate, chalk, whitening, or even ceiling plaster may be given. The acid produces painful wounds on the skin and destroys nearly all vegetable and animal substances. It attacks nearly all the metals, producing their respective sulphates.

SULPHUROUS ACID (H₂SO₃). Acid, only known in solution, formed when sulphur dioxide is dissolved in water. It forms the salts known as sulphites. See Sulphur.

SULPICIANS. R.C. society of secular priests. It was founded in 1645 by Jean Jacques Olier, when curé of S. Sulpice, Paris, to train young men for the priesthood; and the seminary of S. Sulpice (now converted to secular uses) was the outcome.

SULTAN. Mahomedan title meaning ruler. It was used for the ruler of the Turkish dominions until Nov., 1922. It is also applied to other princes, e.g. those of Morocco and Johore. The feminine is sultana. See Turkey.

SULTANA. Small seedless raisin. They are prepared in a very similar way to raisins, from sun-dried white grapes which are grown chiefly in Asia Minor.

SUMAC OR SUMACH (Rhus). Genus of trees and shrubs of the order Anacardiaceae. Natives of temperate regions, the species are mostly poisonous. The small flowers usually form dense clusters. *R. coriaria* affords the commercial sumac used for tanning, and *R. cotinus* the yellow dye-stuff known as young fustic, old fustic being *Maclura tinctoria*. *R. vernicifera* yields Japanese lacquer and *R. succedanea* red lacquer. *R. toxicodendron* (poison ivy) and *R. venenata* (poison elder) are the two most deadly species, it being dangerous even to handle cut branches.

SUMATRA. Island of the Malay Archipelago. It forms a part of the Dutch East Indies. The total area is about 163,000 sq. m. and pop. over six millions, mainly Malay. Fronting the Indian Ocean, the W. coast is formed by the Bukit Barisan or Chain Mts. (7,000-10,000 ft.), and from them the ground

slopes to the E. coast in rich alluvial soil. In the mts., which are heavily forested, are numerous lakes. Among the products are sugar, rice, coffee, ground-nuts, copra, pepper, tobacco, kapok, and petroleum. Gold is found, coal is worked, and tin exists on the neighbouring island of Sinkah. The forests give oak, tea, and camphor. In the wilds are elephants, two-horned rhinoceroses, tigers, bears, deer, and monkeys. The chief towns are Padang, Palembang, Bencoolen, and Achin.

SUMER or **SHUMER**. Ancient name of the lower Euphrates plain, afterwards called Babylonia. It is the biblical land of Sinar (Gen. 10). See Babylonia.

SUMMERSIDE. Town and pleasure resort of Prince Edward Island, Canada. It stands on Northumberland Strait, 48 m. N.W. of Charlottetown. It is a centre of the fox-ranging industry. Pop 3,228.

Summer Time. Period during which the official time is advanced one hour ahead of Greenwich mean time. See Daylight Saving.

SUMMONS (Lat. summonere, to give a hint). In English law, a request, in the nature of an order, to anyone to appear in a court of justice. It must state what the person summoned is wanted for and specify the day and hour for his appearance. See Writ.

SUMPTUARY LAWS (Lat. sumptus, expense). Statutes to repress private extravagance and luxury. They also aim at safeguarding the prestige of privileged classes, directing trade and industry into desired channels, and incidentally raising revenue. In England sumptuary laws existed from the time of Edward II till that of James I.

SUN. Heavenly body, around which the earth and its companion planets travel and from which we derive light and heat. Its average distance from the earth is estimated at 92,830,000 m. We are 3,000,000 m. nearer to it in Jan. than in July. Its diameter is put at 864,000 m., 109 times that of the earth, and its bulk at 1,300,000 times that of the earth. The sun's mass or weight is 332,000 times the earth's. The path of the sun's apparent motion through the heavens is called the ecliptic. Its plane makes an angle with the celestial equator. The sun's rotation period varies in different solar latitudes; at the

equator it is 25 days; at regions in latitude 30°, 27 days, and in latitude 45°, 29 days.

Sunspots wax and wane in a period that averages 11 years. They consist of an outermost penumbra, a darker inner shade, the umbra, and a central dark spot, the nucleus. Years of many spots have active magnetic disturbances and frequent auroral displays.

Outside the sun's radiating surface (or photosphere) are three appendages; the outermost is a composite structure, the corona, an ethereal veil which stretches out sometimes millions of miles from the sun. Inside the photosphere is the chromosphere. This is of a bright red colour, and arises from uprushes of glowing gas, chiefly hydrogen. There are also quiescent prominences, resembling our clouds. Below the chromosphere is the reversing layer, the true solar atmosphere. The solar spectrum is crossed by a vast number of dark lines, which arise from the absorption of sunlight by the gases in this layer.

The intensity of the sun's light at the earth's surface is equal to that of 5,600 candles one foot distant. Its heat at the earth's surface would suffice to raise the temperature of a layer of water 1 centimetre thick 2° C. per minute. It is generally thought that the sun's heat is derived from the coming together of its particles from a nebulous state. It has passed the stage of its greatest luminosity.

SOLAR SYSTEM. The assemblage of bodies controlled by the sun includes the planets with their satellites, the asteroids, comets, and meteors. Until recently Neptune was thought to mark the outermost limit of the system, making the system's span about 5,500,000,000 miles. In Jan., 1930, however, the Lowell Observatory, California, announced the discovery of a trans-Neptunian body, thought to be a planet, for which the name Pluto has been suggested. The planets all move round the sun in the same direction and in practically the same plane (see Ecliptic), as do the asteroids also and most of the planetary satellites. The chief planets in their order of distance from the sun, beginning with the nearest, are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. See Bolometer; Comet; Earth; Eclipse; Halo; Moon; Planet; Pluto; Satellite, etc.

SUN WORSHIP. Primeval cult, the adherents to which worship the sun as the supreme deity or as a divine symbol.

It has appealed especially to peoples practising settled agriculture in non-torrid regions, and is associated with early Egypt, aboriginal America, India, and Japan.

Sunart. Sea-loch of Argyllshire, Scotland, between Ardnamurchan and Sunart and Morven.

SUNBEAM. Yacht in which the 1st Earl and Lady Brassey journeyed thousands of miles. Lady Brassey's book, *A Voyage in the Sunbeam*, 1878, made its name widely familiar. She died on board the yacht in 1887.

SUN BIRD. Popular name for the Nectariniidae. A family of small tropical birds, they occur only in the E. hemisphere. The males have plumage glowing with metallic colours; the females are very soberly coloured. They have long curved beaks, comparatively short wings, long tails, and feed on the nectar of flowers and on small insects.

SUN BITTERN (*Eurypyga helias*). Crane-like bird, native

of Guiana and Brazil. It is about 16 ins. long, and has a long beak, and plumage striped and mottled with black, white, and brown. It is usually found about rivers, and feeds on insects. A larger species (*E. major*) is found in Colombia and Central America. See illus. p. 259.

SUNBURY-ON-THAMES. Urban dist. and boating centre of Middlesex. It is 4 m. from Kingston on the S.R. S. Mary's church dates from the 18th century. On Sunbury Common are reservoirs and works of the Metropolitan Water Board. Here is Kempton Park, notable for its racecourse. Pop. 6,000.

SUNDAY. First day of the week, set aside by Christians for public worship in memory of the resurrection of Christ. In the early days of Christianity, both the Sabbath and Sunday were observed as days of worship. In 321, by a constitution of the Roman Emperor Constantine, Sunday was made a day of rest in the towns, though the country population were allowed to work. During the Middle Ages Sunday was very strictly kept. See Sabbath; Week.

SUNDAY CLOSING. Term applied to the stoppage of business on Sundays, especially in hotels, shops, etc. Sunday trading in England is forbidden by an Act of 1677. Nevertheless it is widely prevalent apart from the legal sale of perishable goods. Public-houses, however, are open within certain hours only; in Wales they are closed under an Act of 1881. In Scotland liquor cannot be sold on Sundays except to travellers.

To promote the observance of Sunday as a day of rest there is an Imperial Alliance for the Defence of Sunday at 1, Palace Chambers, Bridge St., London, S.W.1; also a Lord's Day Observance Society at 22, Red Lion Square, London, W.C.1.

The National Sunday League, at 34, Red Lion Square, London, W.C.1, has quite different aims. It was founded in 1855 to promote recreation, including the opening of museums and picture galleries, on Sunday.

SUNDAY SCHOOL. Institution where religious instruction is given to children and others on Sunday. The Sunday school movement was founded in England by Robert Raikes (q.v.), who in 1780 started a Sunday

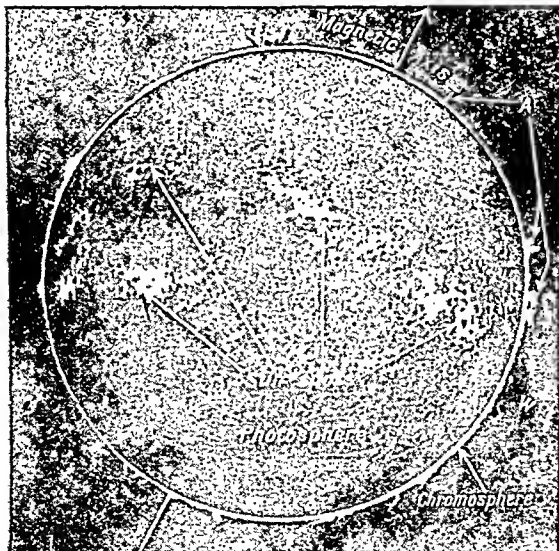
school in Gloucester. His efforts were strengthened by the Sunday School Society, founded by William Fox, 1785, and by the Sunday School Union, an



Sun Bird. Purple-rumped species, *Arachnothera zelowica*. W. S. Berridge, F.Z.S.

inter-denominational organization formed in London, 1803, which superseded the Sunday School Society. This society, now the National Sunday School Union, which has offices at 56, Old Bailey, London, E.C.4, has done an immense work for the Sunday School movement by starting branch unions, initiating lesson systems, promoting conferences and publishing a mass of useful literature. There is a residential training institute for Sunday-school workers at Westhill, Solihull, Birmingham. Its organ is *The New Chronicle*. Statistics which were prepared in 1928 gave the world figures as 356,146 schools, with 3,603,517 officers and teachers and over 29,411,435 scholars.

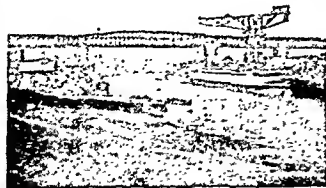
SUNDERLAND. County borough and seaport of Durham. It stands at the mouth of the Wear, 12 m. from Newcastle, on the L.N.E.R. The bor. includes Bishopwearmouth and Monkwearmouth, on either side of the Wear, which is here crossed by two bridges. Sunderland became populous in the 19th



Sun. Spectroscopic photograph of photosphere of sun at time of maximum sun-spot activity. Chromosphere, ring of light surrounding the less brightly glowing globe, averages 5,000 miles in depth. Note solar prominences, A, erupting from chromosphere and reversal of E. and W. through telescope.

Courtesy of Dr. J. Evershed

century owing to the development of the Durham coalfield. Its industries include shipping, ship-building, and the manufacture of machinery, chemicals, glass, etc. The harbour is enclosed by two stone piers and the docks, which cover over 200 acres, can accommodate the largest vessels. Coal is the chief article of export. Sunderland has a famous Association football club. The bor. was incorporated in 1634 and sends two members to Parliament. Pop. 161,100.

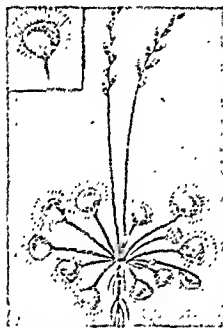


Sunderland. Alexandra Bridge, over the river Wear.

SUNDERLAND, EARL of. English title held by the family of Spencer. In 1643, Henry, 3rd Baron Spencer, a royalist, was made earl of Sunderland. He was killed at Newbury the same year. His grandson Charles, the 3rd earl, married Anne, daughter of the great duke of Marlborough.

Robert Spencer (1640-1702), the 2nd earl of Sunderland, was secretary of state, 1679, and one of the small cabal that surrounded Charles II. He supported James II, while maintaining secret relations with William of Orange. Charles, the 5th earl, became duke of Marlborough in 1733, and since then the title has been merged in that dukedom.

SUNDEW (*Drosera rotundifolia*). Perennial herb of the order Roseraceae. A native of Europe, N. and W. Asia, and N. America,



Sundew. Flower spikes and fringed leaves; inset, leaf

it is a small rosette-plant growing in boggy ground. Its long-stalked leaves have a circular blade studded with crimson threads. Glandular at the tips, they secrete a gummy fluid. The flower spikes are 4 to 6 ins. long, and bear two rows of small white flowers which open only in sunshine. The leaf-glands are extremely sensitive to the touch of any organic matter. Insects are attracted by the dewy appearance of the glands, alight on the leaves, and set up irritation by their efforts to get free. The margins of the leaf curve towards the centre, forming a hollow into which a fluid is poured, in which the insect is digested and the product absorbed. There are about a hundred species in the genus, three being British.

SUNDIAL. Instrument for measuring time. The sun's shadow is cast on to a flat surface by an upright piece of iron called a stile or gnomon. The surface, which is firmly fixed to a wall or pillar, and is sometimes horizontal, sometimes vertical, bears marks showing the hours, half-hours, etc., of the day, and the observer tells the time by noticing where the shadow falls. Many sundials bear Latin mottoes on the brevity of life.

SUN FISH (*Orthogoriscus*). Genus of large fishes with short and laterally compressed bodies. The depth of the fish is almost equal to the length, so that its outline approaches a circle. The rough sun fish (*O. mola*) occasionally occurs in the British seas, and is sometimes 7 ft. long.



Sundial. 1. At Coppell Hall, Essex. 2. Pedestal sundial from Ditton Park

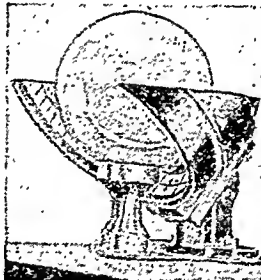
SUNFLOWER (*Helianthus annuus*). Annual herb of the order Compositae, native of N. America, and introduced to British gardens in 1596. It has a stout stem, 6 ft. or more in height, with large, rough, alternate, oval leaves and huge flower heads with deep-yellow ray florets and a broad brown disk. Each head produces hundreds of large grey seeds, valuable as poultry food and as a source of oil. The genus *Helianthus* includes 55 species, many of them perennials. Several other species are cultivated in Britain, including the so-called Jerusalem artichoke (*H. tuberosus*). See Artichoke.

SUNIUM (Gr. Sounion). Ancient name of the rocky promontory at the S. end of Attica, Greece. On its highest point (200 ft.) are the ruins of a temple of Poseidon. The temple of Athena was a little distance away to the N.E. The modern name of Sunium is Cape Colonna.

SUNLIGHT. The treatment of certain diseases by the application of artificial sunlight is quite usual to-day. It is used as a cure for debility in children and others, who thus get the ultra-violet rays of light so essential to health. The patient lies so that the rays fall on him or her. Various kinds of apparatus are used. None should be used save under medical direction. There is a Sunlight League at 29, Gordon Square, London, W.1.

Sunningdale. Village of Berkshire. It is 27 m. from London on the S.R., and has excellent golf links. Pop. 1,657.

SUNSHINE RECORDER. Instrument for recording the duration of sunshine and its intensity. In the Campbell-Stokes pattern a glass sphere, about four inches in diameter, focuses the sun's rays upon a strip of cardboard in a cup-shaped frame which partially surrounds the sphere. As the sun passes from E. to W., its rays burn a line in the cardboard during the periods of bright sunshine. The hours and tenths.



Sunshine Recorder. Instrument of the Campbell-Stokes pattern. Courtesy of Negretti & Zambra

SUNSTONE. Form of translucent felspar emitting a brilliant red metallic glitter from the background. It is found in Siberia, Norway, and N. America.

SUNSTROKE. Disease caused by high air temperature and humidity. The condition is most frequently seen in tropical regions. Heat-stroke is more common among children than among adults.

The predisposing causes are physical exhaustion and heavy clothing. Pathologically, the disease is due to the action of heat on the cerebro-spinal nervous system. Treatment consists in loosening the patient's clothing at once and taking him to a cool place. An ice-bag should be applied to the head, and the body sponged with cold water till the temperature falls to about 101.6 F., when the patient should be wrapped in blankets.



SUN YAT SEN (1866-1925). Chinese statesman.

Born near Canton and educated in the American university at Hawaii, he led the Canton rising of 1895, and organized the revolution of 1911



Sunflower. Large flower head

which deposed the Manchu dynasty. He became provisional president of the Chinese republic, but stepped aside for Yuan Shi Kai. When, in 1917, the government's policy regarding the Great War caused the southern states of China to declare a military government of their own at Canton, Sun Yat Sen was elected president of the South Chinese republic. Civil war followed, and on the defeat of his army Sun resigned, May, 1918. In 1921 he was elected president of the Canton government. He died Mar. 12, 1925.

SUPERCHARGER. Ordinary motor car engines rely upon atmospheric pressure (15 lbs. per square inch) to force the fuel into the cylinders, and at high engine speeds this is insufficient to develop the full engine power. By using the pumping effect obtained from blower or rotating vanes driven by the engine an extra pressure of 7 lbs. in an ordinary road car engine increases the power by nearly 50 per cent. Higher pressures up to 35 lbs. per square inch (total) may be used on racing engines. They are said to be supercharged.

SUPERIOR. Lake separating Canada from the U.S.A. Its shores extend 1,500 m., and its area is 31,800 sq. m. It is 354 m. long, 162 m. wide, 601 ft. above sea level, 1,008 ft. deep, forms the largest reservoir of the St. Lawrence, and discharges into Lake Huron.

SUPERPHOSPHATE. Fertiliser used for the soil. Phosphates, being insoluble, are not absorbed by plants, but when treated with sulphuric acid are converted into soluble acid phosphates or superphosphates.

SUPERTAX. In the U.K. an additional income tax levied on incomes above a certain figure. Introduced in 1909 and now known as surtax, it was fixed at 6d. in the £ on all incomes in excess of £5,000, but was not payable on the first £3,000. In April, 1914, it was made payable on all incomes in excess of £3,000, the first £2,500 being exempt, and the rates varied from 5d. to 1s. 4d. In Nov., 1914, the rates were doubled, and in 1915 those on incomes in excess of £8,000 a year were raised, the maximum rate being 3s. 6d. in the £ on incomes of over £10,000 a year. In 1930 there was another increase, and the maximum rate became 7s. 6d. In 1928-29 the super-tax yield was £56,150,000.

In 1930 the scale was as follows:

	£	Rate in £
		s. d.
On the first	2,000 of income ..	Nil
" " next	500 " ..	1 0
" " "	500 " ..	1 3
" " "	1,000 " ..	2 0
" " "	1,000 " ..	3 0
" " "	1,000 " ..	3 6
" " "	2,000 " ..	4 0
" " "	2,000 " ..	5 0
" " "	5,000 " ..	5 6
" " "	5,000 " ..	6 0
" " "	10,000 " ..	6 6
" " "	20,000 " ..	7 0
On all incomes over 50,000	" ..	7 6

SUPPORTER (Lat. sub, up; portare, to carry). Literally, one who assists. In heraldry, the symbolical figures placed on both sides, one side, or at the back of a shield. See United Kingdom.



Sun Yat Sen, Chinese statesman

SUPPURATION (Lat. sub, under; pus, matter). Formation of matter or pus within the tissues of the body. It is due to infection by micro-organisms. A collection of pus constitutes an abscess. See Inflammation.

SUPREME COUNCIL. Allied organizations during and after the Great War. The first was set up after the disaster of Caporetto in Nov., 1917, under the name Supreme War Council, and met at Versailles. Its object was to coordinate military and other war plans. It disappeared in March, 1918. The second council grew out of the executive of the Allied delegates at the Paris peace conference, 1919. After the signing of the treaties of Versailles, St. Germain, Sévres, etc., its function was to enforce their terms.

SUPREME COURT OF JUDICATURE. Chief court of law for England and Wales. It was established by an Act of 1873, when various courts of law were united under this name. It is divided into the high court of justice and the court of appeal. The judges of the high court are the ordinary judges—or justices. Other officials are the masters, who hear cases of minor importance; there are also official referees and a taxing officer. Appeal lies from the high court to the court of appeal, which is composed of the master of the rolls and five lords justices; and from these there is a final appeal to the House of Lords. The supreme court sits at the Royal Courts of Justice, Strand, London, W.C.

SURAJ - UD - DOWLAH (c. 1732-57). Nawab of Bengal. Grandson of Alivardi Khan, whom he succeeded in 1756, he attacked Calcutta, June 18, 1756, and, after two days' siege, entered the city. Thereupon occurred the tragedy of the Black Hole. Clive retook Calcutta, Jan. 2, 1757; and after his crushing defeat by Clive at Plassey, June 23, Suraj-ud-Dowlah took to flight, but was captured and executed by his rival, Mir Jafar, July 4, 1757. See Black Hole; Clive, Lord.



Suraj-ud-Dowlah, Nawab of Bengal
From an Indian miniature

SURAT. Dist. and town of India, in the N. division of Bombay. Cotton is the chief crop, and rice, native food grains, and pulses are grown. The town is at the mouth of the Tapi on the gulf of Cambay. It was the first English settlement in India in 1613, and monopolised the cotton trade. In 1684 the headquarters of the East India Co. were moved thence to Bombay. Area, 1,651 sq. m. Pop., dist., 674,351; town, 117,434.

SURBITON. Urban dist. of Surrey. A favourite river resort, it is 12 m. from Waterloo on the S.R. It has pleasant promenades, recreation grounds, several churches, and a golf club. Pop. 19,536.

SURETY or **GUARANTOR.** One who promises to answer for the debt, default, or miscarriage of another. The contract entered into by the surety is called a guarantee.

SURF RIDING. Aquatic pastime. Practised by natives of the Pacific islands, especially the Hawaiians, it has become popular in a mild form at seaside resorts in Britain and other countries. It is also a popular pastime in Australia. A flat board is placed on the water, and the surf rider either stands, kneels, or lies on it, and is carried landward on the crest of a breaking wave. A modern form is riding on a plank drawn by a motor boat.

SURGEON. Word, a variant of *chirurgion*, for one who treats disease by manual operations. In London, in the 14th century, surgery was practised by the Barbers' Company and the Guild of Surgeons. The surgeons were separately incorporated, and in 1800 they were re-established as the Royal College of Surgeons of England.

The college possesses a fine building in Lincoln's Inn Fields, with a splendid laboratory and the famous Hunterian Museum.

In conjunction with the Royal College of Physicians the college forms a conjoint board for the examination of students and the granting of licences to practise. There are also colleges of surgeons in Edinburgh and Dublin.

SURGERY (Greek *cheir*, hand, and *ergein*, to work). Science and art of treating morbid, i.e. diseased or accidental, conditions by means of manipulation and by the use of the knife. Surgery was practised by the ancient Egyptians. The two great schools of surgery in antiquity were, however, the Indian and the Greek. Dissection, introduced in the Alexandrian age, led to advance in many directions. The great surgeons of Rome, mostly Greeks, introduced improvements in ligatures and in operations on the eye, bladder, limbs, etc. Ancient surgery culminated in the work of the Byzantine Paul of Aegina (c. A.D. 650), after whom the art fell into a state of increasing decay for nearly 900 years, as the Arabs, who kept alive a knowledge of medicine, were forbidden by their religion to practise anatomy.

Paracelsus, who combined originality with fantastic theories, began to free surgery from the mass of tradition and superstition that encumbered it, but much greater service was rendered by the great French military surgeon Ambroise Paré. His contemporaries, the Paduan professors, A. Vesalius and G. Fallopius, founded modern anatomy, and, with the scientific movement of the 17th century, progress became continuous. The pioneer in England was Richard Wiseman (c. 1622-76). A century later a great advance is marked by the work of John Hunter. The principal landmarks which have resulted in its present state of perfection are the introduction of anaesthetics, antiseptics and asepsis, X-rays, blood tests, and other chemical investigations, vaccines, electro-therapeutics, and massage.

SURINAM. River of Dutch Guiana, S. America. It flows into the Atlantic near Paramaribo after a course of about 400 m. Surinam is the alternative name for the Dutch colony of S. America also known as Dutch Guiana. See Guiana, Dutch.

SURINAM TOAD (*Pipa americana*). Large species of toad, native of Guiana and Brazil. It has a triangular head and small eyes; the upper side is blackish brown, studded with spine-bearing pimples, and the smoother under side whitish. The mouth is deficient in both tongue and teeth. The eggs are hatched out in cells on the back of the female, where the larvae remain until the completion of the tadpole stage. The Surinam toad spends its life in the water, except during the dry season, when it aestivates by burying itself in mud.

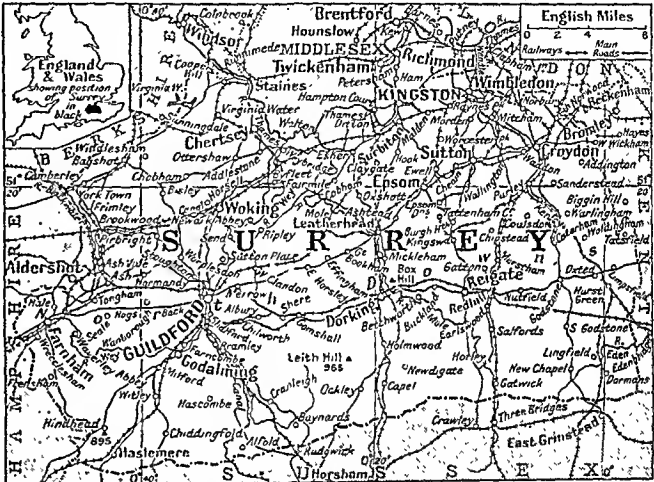
SURPLICE (late Lat. *superpellicium*, over the fur). Vestment of the Anglican and R.C. Churches. The Anglican surplice is of white linen, reaches to the knees, is pleated from the yoke and made with ample sleeves, that worn by choristers and

readers being usually less full than those worn by the clergy. The R.C. surplice is ornamented with lace and reaches only to the hips. The surplice was originally worn over furs by priests when conducting services in cold churches. Its recorded use as a vestment dates from the 12th century.

SURREY. Co. of S.E. England. It is bounded N. by the Thames, W. by Berks and Hants, S. by Sussex, E. by Kent, and is traversed E. to W. by the N. Downs. The chief rivers are tributaries of the Thames, and include the Mole, Wey, and Wandie. Kingston is the county town; other places are Croydon, Guildford, Reigate, Godalming, Richmond, and Wimbledon. Epsom contains the Derby racecourse. The co. is noted for its heaths



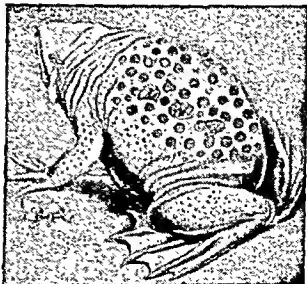
Surplice as worn in the Anglican Church



Surrey. Map of the home county south of the Thames

and commons. Cereals and hops are grown. Sheep are reared. There are market gardens. The industries of the county include the manufacture of gunpowder, the mining of fuller's earth, and the growing of lavender. The S.R. serves the co., which contains many places of interest and beauty, among them Newark Priory, Sutton Place, Box Hill, Virginia Water, and Friday Street; also pretty villages such as Shere. Seven members are returned to Parliament. The co. is mainly in the dioceses of Guildford and Southwark. In early days Surrey was in the kingdom of Mercia, and then in Wessex. Its area is 722 sq. m. Pop. 930,000.

SURREY, EARL OF. English title. William de Warenne, the first earl, was a follower of William I. Although the direct line failed with the 3rd earl in 1143, the title passed to Hamelin Plantagenet, who had married the last earl's heiress. His successors were earls of Surrey until 1347, when, upon the failure of the male line, the title devolved on Richard Fitzalan, earl of Arundel. In 1451 it was granted to John Mowbray, 4th duke of Norfolk, and was regranted in 1483 to Thomas Howard. Since then it has been a courtesy title of the eldest son of the dukes of Norfolk. See Howard; Norfolk, Earl and Duke of.



Surinam Toad. Female of the South American toad, showing young issuing from cavities in her back

SURREY, HENRY HOWARD, EARL OF (c. 1517-47). English soldier and poet. Son of the 3rd duke of Norfolk, he fought with distinction in France, but being defeated by a superior force at St. Etienne while governor of Boulogne, was recalled in 1546. Falsely accused of treason, he was beheaded on Tower Hill, Jan. 19, 1547. As a poet, he was co-founder with Wyatt of the English sonnet-form and the first to use in English, in his translation of the *Aeneid* (books 1 and 4) dactylic blank verse.



Henry Howard,
4th Earl of Surrey

SURROGATE (from Lat. *surrogare*, to elect in place of another). In eccles. government, a surrogate is the deputy of a bishop or a diocesan chancellor who grants marriage licences or probates.

Surtax. Name now used in the United Kingdom for the supertax (q.v.).

SURTEES, ROBERT SMITH (1803-64). British novelist. In 1831, with Rudolph Ackermann, he founded The New Sporting Magazine, in which first appeared his celebrated character Mr. John Jorrocks. The Jorrocks episodes were collected and published as *Jorrocks's Jaunts and Jollities*, in 1838. Jorrocks also figured as the principal character in *Handley Cross* (1843). He wrote a number of other novels, and died March 10, 1864.

SURVEYING (Anglo-Fr. *surveier*, to overlook). Art of ascertaining by measurement the shape and size of any part of the surface of the earth. Such a survey is necessary in the preparation of maps, and in the construction of railways, canals, tunnels, roads, reservoirs, etc. In aerial survey work a series of overlapping photographs are taken from an aeroplane. These enable all objects within the area to be shown easily in their relative positions. (See *Photography*.)

In ordinary land surveying the area obtained is the horizontal projection of the real surface. The topographical survey makes use of the actual landmarks and also the contour of the land. A hydrographic survey is one concerned with charts of the sea-shore or shore of large bodies of water, and with the measurement of the velocities of rivers, etc. Mine surveying deals with both surface and underground surveys for mining purposes.

Surveying is a profession, and as such is controlled by the Chartered Surveyors' Institution at 12, Gt. George St., London, S.W.1. See Bench Mark; Ordnance Survey; Theodolite.

SURVIVAL. Term for the continued existence after death of the human spirit as an individual entity. Attempts to obtain scientific proof have so far been unsuccessful. The barrier between the two worlds may be

absolute. Apparitions seen hours after death may be due to deferred telepathic impressions. In judging alleged messages conveyed by automatic writing or disinterested mediums, the possibility of telepathy from the living must be considered, although in certain complex cases it seems excluded. See *Spiritualism*.

SUSA or **SHUSHAN.** Ancient city of Persia. Capital of the old prov. of Susiana, it stood on the Choaspes (the modern Kar Pheh) and was the winter residence of the Persian kings. The ruins include the pilgrim resort known as the tomb of Daniel, and the acropolis. Excavations have laid bare remains of the palace built by Darius.

Susa. Port of Tunis. It is situated on the gulf of Hammamet, 75 m. S. of Tunis by railway. Pop. 21,298.

SUSQUEHANNA. River of the U.S.A. Rising in two main branches, the N. in Otsego Lake, New York, and the W. in the Allegheny Mts., it unites at Sunbury, Penn., and enters Chesapeake Bay at Havre de Grace. It is nearly 500 m. long.

SUSSEX. Maritime co. of S.E. England. It is bounded W. by Hants, N. by Surrey and Kent, and S. by the English Channel. For administrative purposes it is divided into east and west, each with its county council. Crossing from Hampshire to Beachy Head are the S. Downs. The chief rivers are the Adur, Ouse, Rother, and Arun. The co., which is served by the S.R., is celebrated for its South-down sheep. Hops are grown in the E.

Along the 91-m. coastline are watering places, Brighton, Eastbourne, Hastings, and Worthing among them. Newhaven is a port. Lewes is the co. town, and Chichester the seat of a bishop. The co. contains the ruins of Pevensey and Hurstmonceux castles, abbeys such as Bayham and Battle; great houses such as Arundel and Petworth; and Goodwood, famous for its races. Six members are returned to Parliament. Sussex was originally the kingdom of the South Saxons. The area is 1,457 sq. m. Pop. 728,000.

A cruiser of the Norfolk class is named the *Sussex*. See *Norfolk*.

SUSSEX, EARL OF. English title. In 1529 it was given to Robert Radclyffe. Thomas the 3rd earl (d. 1583) was lord-lieutenant of



Sutherlandshire. Scottish county famous for its grouse moors. See below

Ireland under Elizabeth. In 1644 Thomas Savile was made earl of *Sussex*. The title was revived for Thomas Lennard, Baron Dacre, in 1684, and was held by the Yelverton family from 1717-99. In 1801 George III made his sixth son, Augustus Fred. crick (1773-1843), duke of *Sussex*. The duke of Connaught is also earl of *Sussex*.



Sussex fowl, a breed sometimes mis-called Surrey fowl

table bird. The hens weigh 6 to 8 lb. and the cockerels up to 10 lb. There are brown, red, speckled, and light varieties. The breed is often mis-called the Surrey fowl.

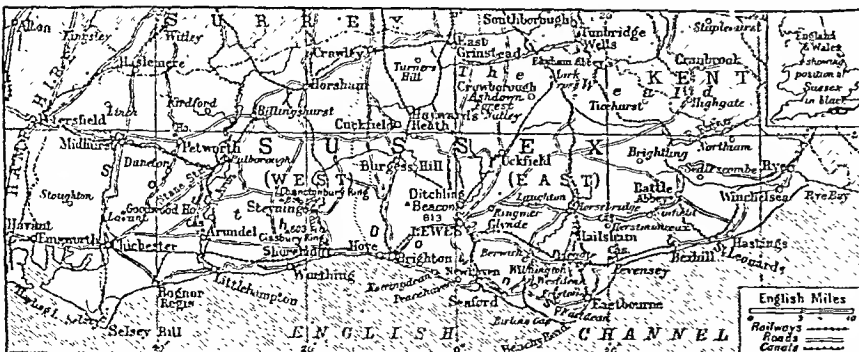
SUSSEX REGIMENT, ROYAL Regiment of the British army. Originally the 35th and 107th Foot, it was raised in 1701. It has a distinguished record, and has borne the title "royal" since 1882. In addition to its regular and special reserve battalions it had nearly a dozen others in the Great War. The depot is at Chichester.



SUSTENTATION (Lat. *sub*, up; *tenere*, to hold). Literally, the act of sustaining. The fund raised by Presbyterian Churches to assist their poorer ministers is called a sustentation fund.

SUTHERLAND, DUKE OF. Scottish title borne by the family of Leveson-Gower since 1833. The duke owns much of the co. of Sutherland, in which is his chief residence, Dunrobin Castle. His eldest son is the marquis of Stafford, a title conferred on George G. Leveson-Gower (the first duke) in 1803. He was ambassador in Paris, and from him the later dukes are descended. See *Stafford*.

SUTHERLANDSHIRE. Co. of Scotland. In the extreme N., its surface varies between mountainous moorland and narrow valleys. Loch Shin is the largest of many lakes. The chief rivers are the Oykel, Helmsdale, Biora, Shin, and Fleet. The co. is known for its grouse moors and deer forests. The chief



Sussex. Map of the southern maritime county, celebrated for its watering places and downland scenery

industries are sheep rearing and fishing. Much of the land is cultivated by crofters. The L.M.S. Rly crosses the county. Dornoch is the co. town. With Caithness, Sutherland sends one member to Parliament. The area is 2,028 sq. m. Pop. 17,800.

SUTLEJ. River of the Punjab, India. It rises in the sacred Rakas Tal Lake, at the S. foot of Mt. Kailas, in Tibet, crosses the Himalayas, skirts the Siwalik hills, enters the great alluvial plain of N. India at Rupar, and joins the Indus after a course of 900 m. A great irrigation scheme in the valley of the Sutlej is being carried out.

SUTRAS (Skt. sutra, string). In Sanskrit literature, a class of commentaries on the Vedas. Consisting usually of strings of brief aphorisms, they were learnt by heart as aids to memory in matters of ritual, law, philosophy, grammar, prosody, etc.

SUTRO, ALFRED (b. 1863). British dramatist. Born in London, August 7, 1863, and educated at the City of London School and in Brussels, he achieved success in 1904 with *The Walls of Jericho*, a comedy of modern society. Among his other plays are *John Gayde's Honour*, and *The Barrier*, 1907; *The Builder of Bridges*, 1908; *The Choice*, 1919; *Far Above Rubies*, 1924; and *The Desperate Lovers*, 1927.

Suttee. Variant spelling of the Hindu word sati (q.v.).

SUTTON. Urban dist. of Surrey. It is 11 m. from London, and has a station on the Southern Rly. S. Nicholas church contains some interesting memorials. The sign of the Greyhound inn, which hangs across the road, is one of the few signs of this kind now remaining. In 1927 Cheam was added to Sutton. In 1929 an electric rly. from Wimbledon was opened. Pop. 25,000.

SUTTON, MARTIN JOHN (1850-1913). British agriculturist. The eldest son of Martin Hopo Sutton, who with his brother Alfred founded the firm of Sutton & Sons, he became, in 1887, head of the firm. He died Dec. 14, 1913. His book, *Permanent and Temporary Pastures*, 1886, was based on an essay by his father.

SUTTON BRIDGE. Urban dist. and river port of Lincolnshire. It is on the Nene, 3 m. from the Wash on the L.M.S. and L.N.E. Rlys., and stands on land reclaimed from the sea. About 3 m. away is Long Sutton, whose church contains a Norman nave. Pop. 2,342.

SUTTON COLDFIELD. Borough of Warwickshire. It is 8 m. from Birmingham, on the L.N.E. and L.M.S. Rlys. The church of Holy Trinity has a Norman font. There is a 16th century grammar school. Sutton Park recreation ground covers 2,400 acres. Near the town is New Hall, a moated residence built in the 13th century. Hardware is manufactured, and there is a trade in agricultural produce. The bor. is sometimes known as King's Sutton. Pop. 23,028.

SUTTON COURTENAY. Village of Berkshire. It stands on a backwater of the Thames, 2 m. from Abingdon. There is an old manor house. Pop. 863.

SUTTON-IN-ASHFIELD. Urban dist. and market town of Nottinghamshire. It is 13 m. from Nottingham, on the L.M.S. and L.N.E. Rlys. The church of S. Mary Magdalene is a restored 12th century edifice. Hosiery is manufactured, and around are coal mines. Market day, Sat. Pop. 23,852.

Sutton-on-Sea. Watering place of Lincolnshire. It is 28 m. from Boston and has a station on the L.N.E.R. Pop. 1,605.

SUTTON PLACE. Manor house in Surrey. It is 4 m. from Guildford, and was built, 1523-30, by Sir Richard Weston. One



Sutton Place, Surrey. South front of the Tudor manor house. It is built of brick and terra-cotta

of the finest examples in England of the transition from castle to mansion in Tudor domestic architecture, it is constructed of terra-cotta and brick. Frederic Harrison restored the long gallery in 1878. The house was occupied, 1905-16, by Viscount Northcliffe, and was sold in 1916 to the duke of Sutherland.

SUVLA BAY. Bay of Gallipoli. On the W. side of the Dardanelles between Suvla Burnu (Cape Suvla) and Nibrunesi points, it is sometimes known as Anafarta Bay.



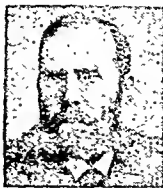
Suvla Bay. Unloading stores from a barge beside the light railway

with a successful advance on Sari Bair by the Anzacs, would have given the Allies control of the central heights of the Gallipoli peninsula. The Anzacs began their movement in the afternoon of Aug. 6, 1915, and fighting went on till the 21st. Some progress was made, but as a whole the attack failed.

SUZERAIN (Fr. from Lat. *suzum*, above). In feudalism, a lord paramount, or over-lord. The king, as ultimate owner of the soil, was suzerain-in-chief, his immediate vassals being the great barons, who held their land on condition of rendering military service personally and also through their own vassals, who in return for protection by their own suzerains were pledged to serve at their call. This system formed the basis of feudalism (q.v.).

SVALBARD. Official name for the whole of the Polar territory belonging to Norway. The individual islands, Spitsbergen, Bear Island, etc., retain their former names.

SVERDRUP, OTTO (1854-1930). Norwegian explorer. Born Oct. 31, 1854, he was a master mariner when he took part in Nansen's journey across Greenland in 1888. In 1893 he commanded the Fram in Nansen's Polar expedition, attempted to circumnavigate Greenland, 1898-1902, and in 1914-15 undertook a voyage for the relief of missing Arctic explorers. In May, 1920, he commanded the ice-breaker *Sviatogor*, lent by the British admiralty to Norway, which went to the rescue of the Russian icebreaker *Solovoi*, ice-bound in the Kara Sea. He died Nov. 26, 1930.



Otto Sverdrup, Norwegian explorer

SWABIA. One of the duchies into which medieval Germany was divided. The duchy lay between Franconia, Bavaria, and the Rhine. It is now part of Württemberg, Bavaria, and Hesse. The name is used more precisely for a prov. of Bavaria.

SWADLINCOTE. Urban dist. of Derbyshire. It is 5 m. from Burton-upon-Trent, on the L.M.S. Rly. Earthenware is made, and near are coal mines. Pop. 20,026.

SWAFFHAM. Urban dist. and market town of Norfolk. It is 15 m. from King's Lynn, on the L.N.E.R. The parish church of SS. Peter and Paul is a perpendicular edifice with a notable roof. Cattle and sheep fairs are held, and there is an agricultural trade. Market day, Sat. Pop. 2,913. Swaffham Prior is a village 8 m. from Cambridge.

SWAHILI (Arab. coast-people). Hybrid peoples, mostly on the coast and islands of Kenya Colony and the Tanganyika Territory. Numbering less than 1,000,000, and descended from the Moslemised medieval Zanj population, they represent twenty centuries of Arab contact with the coast negroes. The lower ranks make good porters and scamen.

SWAKOPMUND. Port is the S.W. Africa Protectorate. Situated in sterile country 25 m. N. of Walvis Bay, the town is well planned and is connected by rly. with Windhoek, the capital, and thence with Cape Town. It was occupied by the S. African forces on Jan. 14, 1915, in the campaign against the Germans in German S.W. Africa. Pop. (European), 1,125.

Swale. River of Yorkshire (N.R.). It rises on the Westmorland border and joins the Ure a little below Myton.

SWALLOW (*Hirundo rustica*). Migratory bird of the family *Hirundinidae*. It is a native of Europe, Asia, and Africa, visiting Britain in April and staying till late in Sept. It has long wings and a forked tail. The bird is entirely insectivorous, its food being taken usually on the wing. The nest, of mud and grass, etc., is built usually upon a raft or other shelf in barns or out-houses. As a rule, there are two broods each year.



Swallow hovering as about to enter nest
W. J. Herridge, F.Z.S.

SWALLOW-TAIL BUTTERFLY (*Papilio machaon*). Large yellow and black butterfly, native of Europe and Asia. As a British species it is now restricted to the fens of Norfolk and Cambridgeshire. When annoyed the green caterpillar protrudes a pink V-shaped organ from behind the head, which emits a strong odour, apparently of a protective nature. It feeds upon milk-parsley and other umbelliferous plants.



Swallow-tail Butterfly, found in the English fen country

SWALLOW-WORT (*Asclepias*). Genus of perennial herbs of the order *Asclepiadaceae*, natives of America. Other names for them are milkweed and silkweed. They have a milky juice, and the flowers have the corolla deeply divided into five segments. Several of the species are used medicinally; others yield fibres.

SWAN (*Cygnus*). Small genus of large aquatic birds of the family *Anatidae*. They are natives of many regions, from the Arctic to the Australian. Closely related to the ducks and geese, they are distinguished by the extremely long necks, short legs, and the

absence of feathers on the face from the eye to the bill. Three species visit the British Islands in winter, and of these one known as the mute swan (*Cygnus olor*) has lived here in a semi-domesticated state for centuries.

The mute swan—the only species that nests in Britain—constructs a huge bed of flags and reeds, lining it with down, and lays from five to ten greenish-white eggs. The young swans, or cygnets as they are called in their first year, are of a grey-brown colour until they are a year old. The swans on the upper Thames are owned by the Crown and the Dyers' and Vintners' companies.

SWAN. River of W. Australia. It rises as the Avon and enters the Indian Ocean at Fremantle, 12 m. below Perth. Here, in 1829, was founded the Swan River Colony, from which Western Australia was formed.

SWAN, JOHN MACALLAN (1847–1910). British sculptor and painter. His chief reputation was as a painter and sculptor of animals; but he was also an accomplished painter of the human figure. He became A.R.A. in 1894, R.A. in 1905, and died in London, Feb. 14, 1910.

SWAN, SIR JOSEPH WILSON (1828–1917). British inventor. Born in Sunderland, Oct. 31, 1828, and educated privately, he is remembered as a pioneer in electric lighting. In 1860 he constructed a carbon filament lamp, but it was not till 1880 that he publicly exhibited the first successful carbon filament vacuum lamp. He died May 27, 1917.

SWANAGE. Urban dist., seaport, and watering place of Dorset. It stands on Swanage Bay, 24 m. from Bournemouth, by the Southern Rly. The ancient church of S. Mary has a notable tower. The main industry is the quarrying of Purbeck stone. The place has good bathing facilities. Near are the Tilly Whim caves, once the resort of smugglers, and a curious stone globe. Pop. 5,480.

SWANSEA (Welsh, Aber Tawe). County bor. of Glamorganshire, Wales. It stands on Swansea Bay at the mouth of the Tawe, 45 m. from Cardiff, on the G.W. and L.M.S. Rlys. Among notable buildings are the church of S. Mary, rebuilt in the 19th century, the Royal Institution, with library and museum, the university college and the art gallery. Parts of the castle still stand. The main industries are the manufacture of tinplate and the smelting of copper, zinc, silver, and other metals. Another is the refining of oil, for which there are large storage facilities. Pop. 163,200.

Swansea ware, porcelain produced at the Cambrian Works, is remarkable for its dark blue colour and its beautiful paintings of birds, flowers, etc. See Pottery.

SWARAJIST (Sanskrit, self-ruling). Name given to an Indian political party. It came into existence about 1923, and was composed of those who broke away from Gandhi on the policy of taking no part in the general election. The Swarajists secured a substantial representation in the central assembly and

dominated the provincial councils. Their policy was to secure home rule for India. Their early leader was C. R.



Swan. 1. Australian black swan. 2. British domesticated white swan

mouth of the Han river. Sugar is the principal product, but the trade has steadily declined, and mining for wolfram is carried on. Swatow is the centre of a stream of emigration to the Straits Settlements, Dutch East Indies, Cochin China, and Siam. Pop. 25,000.

SWAZILAND. British Protectorate of S. Africa. It is bounded N. and W. by the Transvaal, S. by the Transvaal and Natal, and E. by Portuguese E. Africa and Natal. Mbabane is the capital. The country is administered by the high commissioner for S. Africa, through a resident commissioner, although the native chiefs exercise a great deal of civil authority. There is considerable mineral wealth, tin and gold being worked. The natives possess large herds of cattle and sheep. The area is 6,704 sq. m. Pop. (European) 112,838. See South Africa.

SWEARING. Act of making declaration upon oath. Profane swearing or cursing is punishable by fine under the Profane Oaths Act, 1745. The use of profane language in the streets renders the offender liable to a fine of 40s. See Affirmation; Oath.

Sweat. Moisture from the skin, also known as perspiration (q.v.). See Skin.

SWEATING. Term applied in the 19th century to the practice of working poor persons at starvation wages through the medium of middlemen employers. The practice was particularly common in the clothing and furniture trades. Most of the work was done at home under the worst conditions, and a select committee appointed by the House of Lords in 1888 revealed a grave and wide-spread social evil. Substantial improvement was eventually effected in all sweating trades by the setting up of trade boards, which fixed a minimum wage. See Trade Board; Wages.

SWEATING SICKNESS. Disease characterised by fever, profuse sweating, and an eruption on the skin. It was prevalent in England in the 15th and 16th centuries.

SWEDE OR SWEDISH TURNIP (*Brassica campestris*, var. *napobrassica*). Root crop, a variety of turnip. It is harder and possesses greater feeding value than the ordinary turnip, from which it is distinguished by smooth bluish leaves and the presence of a narrow "neck" at the top of the root. The cultivated forms

are divided into green-top, bronze-top, and purple-top, the last including the kinds known as tankard, intermediate and globe.

SWASTIKA (Skt. well-being). Symbol formed of an equal-armed cross whose extremities are bent uniformly at right angles. Although traced in pre-Aryan Europe, it is

primarily an Aryan sun-symbol, being found at Troy, and in India. Buddhist migration carried it to China and Japan; it may also owe its presence in America and W. Africa to cultural migration. It was freely employed in early Christian art.

SWATOW. Treaty port in Kwangtung prov., China, at the

mouth of the Han river. Sugar is the principal product, but the trade has steadily declined, and mining for wolfram is carried on. Swatow is the centre of a stream of emigration to the Straits Settlements, Dutch East Indies, Cochin China, and Siam. Pop. 25,000.

SWEDEN. Kingdom of N. Europe, comprising the E. part of the Scandinavian peninsula. It is bounded W. by the Sound, the Kattegat, the Skagerrak and Norway, N. by Finland, and E. and S. by the Baltic. The islands of Gotland and Öland in the Baltic and Hven in the Sound belong to Sweden. The area is 173,156 sq. m. Stockholm is the capital. Pop. 6,105,190.

The country may be divided broadly into three regions—N., central, and S. The first is the highland forest area, the second the lowland mining area, and the third the agricultural plains. Forests cover about half the entire country. The great lakes, Wener, Wetter, Mälardalen, and Hjelmars, are situated in the central lowlands. See map, p. 1021.

The chief crops are oats, rye, barley and wheat. Potatoes, sugar beet, and much hay are grown. Cattle, sheep, and pigs are reared, and the dairy industry is increasing. Reindeer are bred by the Lapps. The fisheries include herring, mackerel, and eels. The iron ore deposits are very valuable. Copper, zinc, manganese, and molybdenum ore are worked, and granite and marble are quarried. The timber trade is of great importance, and connected with it is the extensive paper and pulp industry. Matches are exported. The mileage of the rlys. exceeds 10,000. Train ferries run to Germany and Denmark.



Swastika, an ancient Aryan symbol



Sweden. Dalecarlian peasants in gala dress performing a folk dance

The three Scandinavian kingdoms, Sweden, Norway, and Denmark, were united by the union of Kalmar, 1397, and it was not until 1523, under Gustavus Vasa, that the independence of Sweden was established. Gustavus Adolphus is best remembered for the redoubtable part he played in the Thirty Years' War, at the close of which, in 1648, Sweden was in possession of Pomerania and of extensive territories on the E. shores of the Baltic. The peace of Nystadt, 1721, left Sweden with no possessions on the continental side of the Baltic S. of the gulf of Finland.

In 1810 the French marshal, Bernadotte, was nominated crown prince and heir of Charles XIII. He utilised the fall of Napoleon to wrest Norway from Napoleon's ally Denmark, and from 1814 to 1905 Norway was attached to Sweden, autonomous but not independent. Bernadotte became king as



Swansea. Remains of the 14th century castle built by Bishop Gower

Charles XIV in 1818, and his dynasty still occupies the throne of Sweden, though the union between that country and Norway was repealed in 1905. In 1907 Gustavus V succeeded his father Oscar II as king. The kingdom is a member of the League of Nations.

The constitution, with modifications, dates from 1809. The king is an hereditary monarch and rules in association with the council of state. The Riksdag consists of two chambers. The first has 159 members, returned for a period of eight years. The second (popular) chamber, with 230 members, is elected for four years. The state church is Lutheran.

SWEDENBORG, EMANUEL (1688-1772). Swedish scientist and mystic. He was born at Stockholm, Jan. 29, 1688.



E. Swedenborg, Swedish mystic

In 1743 he declared that insight into the spiritual world had been granted him by direct revelation. He abandoned his scientific work in 1747, and gave up the rest of his life to meditation and exposition. He died in London, March 29, 1772.

According to Swedenborg there is an exact correspondence between the physical and spiritual worlds. Most books of the Bible have two senses, a literal and a spiritual. Those who are actuated by love of God and man enter heaven as angels, those whose motive is self-love enter hell. All life flows from God. The Holy Trinity became incarnate in Jesus Christ, who raised humanity to union with God, but there is no atonement in the accepted sense.

The Swedenborgian body, called the New Church was organized in 1757. Of Swedenborg's numerous mystical works many were published in English by the Swedenborg Society, founded in 1810.

SWEDISH DRILL. System of physical exercise originated in Sweden. The benefits derived from the system have induced other countries to include it in the curriculum of physical training provided for the naval, military, and police forces, and a modified system is adopted by the board of education in a syllabus for schools in Great Britain.

The exercises are practised without apparatus. There are special exercises for the legs, arms, neck, spine, lungs (breathing exercises), balance or maintenance of the body's equilibrium, development of lateral trunk and abdominal muscles, and strengthening of the shoulders and back. See Physical Training.

SWEEPSTAKE. Form of competing for money or other prizes. The money is contributed in equal proportion by each competitor. In another variety of sweepstake, held upon horse races, slips of paper are issued for each subscription, some bearing the names of the horses, the remainder being blank. The slips are shuffled together and placed in a box, from which they are drawn. The largest sweepstake is that on the Derby promoted by the Calcutta Turf Club. In England, the law on sweepstakes is somewhat contradictory.

SWEET BRIAR or **EGLANTINE** (*Rosa eglanteria*). Shrub of the order Rosaceae. A native of Europe and N. and W. Asia, it forms a small bush with erect prickly stems, clothed also with gland-tipped bristles. The leaves are divided into five or seven roundish leaflets with toothed edges. On the under side they are covered with glands, whose sticky excreta give off the well-known sweet briar



Sweet Briar. Flower and fragrant leaves

odour. The small rosy flowers are about 1½ ins. across, the scarlet fruits egg- or pear-shaped.

SWEET FLAG (*Acorus calamus*). Perennial aromatic waterside herb of the order Araceae, a native of Europe, N. Asia, and N. America. It has a thick, creeping rootstock and sword-shaped leaves 4 to 6 ft. long. The flowering stem is also sword-shaped, and ends in a flattened spathe, from which emerges the spadix, with hundreds of yellow-green simple flowers.

SWEETHEART. Ruined Cistercian abbey near Dumfries. It was built by Devorguila in 1275 to commemorate her husband, John Baliol. The abbey and the village around it are now known as New Abbey. See Baliol.

SWEET LIME. Popular name for the fruit of *Citrus limetta*, to distinguish it from the W. Indian lime, from which lime juice is obtained. It is a native of E. Asia. See Bergamot; Lime.

SWEET PEA (*Lathyrus odoratus*). Annual herb of the order Leguminosae. It is a native of S. Europe, whence it was introduced to Britain in 1700. Its

long, flattened, and winged stem is too weak to stand, and the plant supports itself by numerous tendrils. The fragrant flowers are produced in clusters of two or three at the end of long stalks, and are of various tints, white, pink, and purple. Under cultivation the colour variation, as well as the size, has been increased, chiefly at the expense of the fragrance.



Sweet Pea. Single bloom of the annual

SWEET POTATO (*Ipomoea batatas*). Trailing perennial herb of the order Convolvulaceae. It is a native probably of S. America, but is grown extensively as a food crop in most warm countries. It has a long, slender stem which sometimes climbs by twining, large lobed or angular leaves about 6 ins. long, and funnel-shaped flowers which are white outside and purple within.

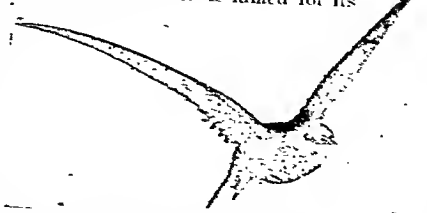
SWEET WILLIAM (*Dianthus barbatus*). Perennial herb of the order Caryophyllaceae. It is a native of S. and E. Europe, whence it was introduced to Britain about



Sweet William. Clustered flowers of a cultivated variety

1573, and became a favourite garden plant. The stiff, jointed stem bears lance-shaped leaves in pairs, and divides at the top into a cluster of flower-stalks. The flowers are naturally pink or white, but as the result of cultivation innumerable varieties exist in all shades of colour, from crimson almost to black.

SWIFT (*Micropus apus*). Bird of the order Picariae. A native of Europe, Asia, and Africa, it is famed for its



Swift. Summer migrant to the British Isles, with its long narrow wings spread in flight

rapid, steady flight and wonderful evolutions in the air. In Britain it is a summer migrant, arriving at the end of April and leaving in August. Its nest, slightly conical of straw, dry grasses, and feathers, gummed together by the bird's saliva, is built under the eaves of a house, in church towers, and crevices. The swift never perches, its short feet and hook-like claws enabling it only to cling to walls, etc. It is entirely insectivorous and hunts in companies, filling the air with joyous screams.

SWIFT, JONATHAN (1697-1745). Irish satirist. Born in Dublin, Nov. 29, 1697, son of a clergyman of English descent, in 1699 he was secretary, at Moor



Jonathan Swift, British satirist. After Charles Kneller, 1745

Park, Surrey, to Sir William Temple, and was tutor to Esther Johnson, the Stella of his *Journal and Sonnets*. Ordained priest, 1693, he obtained the living of Kilroot, Belfast Lough, but returned to Moor Park, 1696-98. While in Temple's service, Swift wrote *The Battle of the Books*, 1697, which was published, 1704, with *A Tale of a Tub*, a brilliant satire on the divisions of Christianity, but a work that prejudiced his chances of ecclesiastical preferment. However, in 1713 he was made dean of S. Patrick's cathedral, Dublin.

While in England, which he visited again 1726 and 1727, he began his famous friendship with Stella, whom he is said to have married secretly in Ireland about 1714 and who died Jan. 23, 1728. The friendship with Esther Vanhomrigh (Vanessa) began about 1710, and is related in the poem *Cadenus and Vanessa*. Meanwhile he had written *Sentiments of a Church of England Man*, 1708; *Proposal for the Advancement of Religion*, 1709; his ironical *Argument Against Abolishing Christianity*; and his humorous pamphlets, signed Isaac Bickerstaff, on the almanac-maker, Partridge. His masterpiece, *Gulliver's Travels*, appeared 1726-1727. Swift died Oct. 19, 1745, his last years having been darkened by mental trouble.

SWILLY, LORCH. Inlet of the N. coast of co. Donegal, Irish Free State. Its entrance is 4 m. broad, and it extends S. for about 25 m. with an average breadth of 3 m.

SWIMMING. Method of moving progressively on or through water, without artificial aid. The breast stroke is the most useful of the various methods, although a slow racing stroke as compared with the trudgeon or the crawl. In using the breast stroke, the arms should be bent in with the elbows about four inches from the sides of the body, the hands in front of the chin and touching, with the palms downwards, but near the surface of the water, the body inclined forward and the head slightly back. When the stroke is made the arms are vigorously pushed forward to their fullest extent, and when fully extended the hands should be turned slightly outward, and then pulled round until they are in a line with the shoulder. The recovery is made by the arms being bent in, thus bringing the elbows again near the sides of the body ready for the next stroke. During this last portion of the movement inward breathing should take place. The proper regulation of breathing is the all-important factor in swimming.

The back stroke is, in its primary movements at least, merely the breast stroke performed on the back. The overarm stroke was formerly considered the fastest, a stroke known as the trudgeon being considered speedy only for a short distance. But with the advent of water polo an adaptation of this stroke became popular. In 1902 R. Cavill, an Australian

swimmer, gave an exhibition of the crawl stroke, and this method of progression has since revolutionised speed swimming.

In 1892 the hundred yards record stood at 1 min. 5½ secs. J. Weissmuller (U.S.A.) did it in 51 secs. in 1927. He and Arne Borg of Sweden hold nearly all the amateur records. The British amateur record for the 100 yds. is held by P. Samson (54½ secs.), and for the mile by T. S. Battersby (24 min. 1½ sec.).

In 1930 the English Channel had been swum some 16 times. The first woman to do it was Miss G. Ederle (Aug. 6, 1926), in 14 hrs. 34 mins. Of the men, G. Michel swam it in 11 hrs. 5 mins. (Sept. 10, 1926). In 1930 A. Rizzo, of Malta, set up the endurance record of 68 hours 11 min. See Dover.

SWINBURNE, ALGERNON CHARLES (1837—1909). British poet and dramatist. Born in London, April 5, 1837, eldest child of Admiral Charles Henry Swinburne and Lady Jane, daughter of the 3rd earl of Ashburnham, he entered Balliol College, Oxford, in 1856, but went down without a degree in 1859.

In 1861 he settled in London and began to write. His first published volume contained two plays, *The Queen Mother* and *Rosamond*, 1860. He won his place among the chief of British lyrical poets with *Afalanta in Calydon*, 1865, and *Poems and Ballads*, 1866. Later came *William Blake*, 1868, possibly his best book of prose criticism, and *Songs before Sunrise*, 1871, perhaps his best book of lyrics. Other of Swinburne's numerous publications are the prose study of Chapman, 1874; *Erechtheus*, 1876, a tragedy in Greek form; *Poems and Ballads*, Second Series, 1878; *The Heptalogia*, 1880, a remarkable collection of parodies; and *Trisframo of Lyonese*, 1882,



A. C. Swinburne,
British poet.
Elliott & Fry

a sort of Wagnerian music-drama.

From 1879, his health dissipated by an irregular life in London, he lived at Putney under the care of Theodore Watts-Dunton. He died April 10, 1909. Consult Swinburne at Home. C. Watts-Dunton, 1922; Swinburne, Hon. H. Nicolson, 1926.

SWINDON. Borough and market town of Wiltshire. It is 77 m. from London, on the G.W. Rly., being an important junction. It consists of Old Swindon, on a hill, and New Swindon below. The latter grew up owing to the establishment here in 1841 of the G.W. Rly. works. These provide the chief occupation, but there is also an agricultural trade. Near is Coate Reservoir, a large artificial lake. Market day, Mon. Pop. 60,000.

SWINE FEVER. Name given to three separate infectious diseases which attack swine. They are (1) swine plague, a septic gastro-enteritis caused by a bacillus; (2) infectious pneumonia, caused by an ovoid bacterium; (3) the real hog cholera. An animal infected by any one of these three diseases becomes dull, loses its appetite, and seeks a dark corner. Its eyes are affected, and later its flexor muscles. No cure is known. An outbreak must be immediately notified and the infected animals slaughtered.

SWINTON. Urban dist. of Yorkshire (W.R.). It is 10 m. from Sheffield, a junction on the L.M.S. and L.N.E. Rlys. Here the Don navigation joins that of the Dearne and Dove. Iron goods, pottery, and glass are made, and there are coal mines. Pop. 13,925.

SWINTON. Dist. of Lancashire, part of the urban dist. of Swinton and Pendlebury. It is 4 m. from Manchester, on the L.M.S. Rly. There are cotton factories and engineering works. Pop., urban dist., 31,000.

SWISS GUARD. Former regiment of bodyguards to the French throne. Recruited in Switzerland, the regiment was first raised in 1616. In the



Swiss Guards.
Private in the
Papal Guard

Revolution, after bravely resisting the mob which invaded the Tuileries, Aug. 10, 1792, they were massacred. Another body of troops, the Swiss Guard, or Papal Guard, is employed at the Vatican.

SWITCH. In electricity a switch is a device for opening and closing an electric circuit by the movement of a lever or wheel. A single pole switch acts on one conductor only; a double pole switch breaks or closes the circuit in two conductors simultaneously. The simplest form of switch consists of a knife-shaped hinged bar, pivoted at one end on an insulated mounting, and forced by an insulated handle between two slightly elastic terminals, each connected with the main. The blade, by making contact with both, bridges the gap and completes the circuit.

When a circuit is broken, sparking takes place at the points of rupture, and destructive arcing may be set up. To reduce this to a minimum, a switch is made quick-acting. Circuit-breakers, or cut-outs, are automatic switches which operate when the current becomes excessive, fails altogether, or reverses its direction.

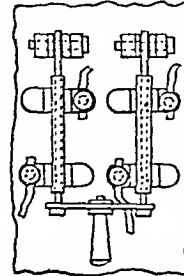
SWITHIN or **SWITHEN** (d. 862). English saint and bishop. According to tradition, he was of noble birth. In 852 Ethelwulf made him bishop of Winchester, where he was famed as a builder of churches. He died at Winchester, and to him the cathedral was dedicated. The popular superstition about rain on St. Swithun's day (July 15) meaning rain for the forty days following is said to have originated in the fact that the removal of his body to the cathedral in 971 was delayed by heavy rain.

SWITZERLAND. Federal republic of central Europe. Entirely inland, it is enclosed by France, Germany, Austria and Italy. The languages spoken comprise German, French, Italian, and, in parts of Grisons, Romansch. Berne (or Bern) is the capital. The area is 15,940 sq. m. Pop. 4,018,500.

The Alps occupy most of the interior and form the S. and E. frontiers, while on the N.W. are the Jura Mts. The rivers include the Rhône, Rhine, Inn, Reuss, and Aar, and the lakes those of Geneva, Constance, Lucerne and Neuchâtel, with small parts of Lakes Maggiore and Lugano. About one-fifth of

the country is forest. The magnificent scenery and the opportunities for winter sports have made Switzerland the playground of Europe.

The agricultural products include wheat, rye, oats, barley, vegetables, and fruits. Asphalt is obtained in the Val de Travers, and iron ores and salt are mined. The scarcity of coal is set off by ample water power resources, which are being increasingly utilised. Exports include watches and clocks, silk and artificial silk goods, embroidery, condensed milk, cheese, chocolate, machinery and chemicals. There are over 3,000 m. of rly.: many of the lines have been electrified.



Switch. Double pole
type shown in plan

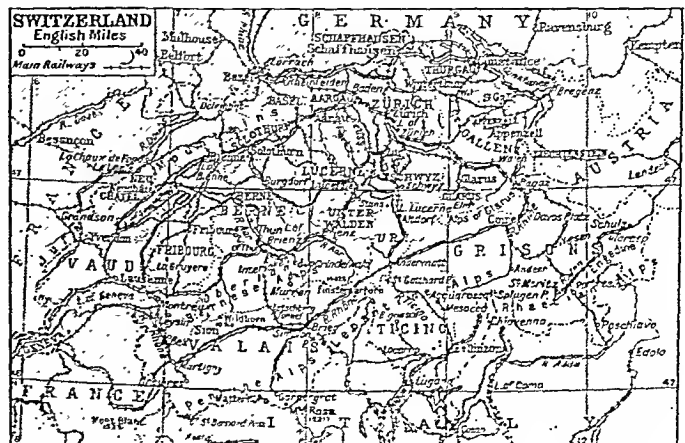
In 1291 the forest cantons of Schwyz, Uri, and Unterwalden formed themselves into a defensive league. By 1513 the confederation of 13 cantons had been completed, and in 1648 the Swiss Confederacy became formally independent of the Empire. For the next century and a half Switzerland was virtually dominated by France, and in 1798 the Helvetic Republic was formed. In 1803 Napoleon reorganized its constitution, and increased the number of cantons to 19. In 1815 the Congress of Vienna restored those districts that had been annexed by France, raising the number of cantons to 22, and the Napoleonic system was dissolved.

The legislative power resides in a Parliament of two chambers, a Council of State of 44 members and a National Council of 198 members; both unified form the Federal Assembly. The executive power is vested in a Federal Council of seven members, elected by the Federal Assembly. Legislation may be initiated or vetoed by the popular vote; the referendum, which is invoked by a petition of 30,000 citizens or eight cantons, is in frequent use. See Alps.

SWORD. Weapon of offence in fighting. The early sword, as used by Asiatic, Greek, and Roman soldiery, was short, often leaf-shaped, and pointed. It was more used as a cutting than as a stabbing weapon. The swords of the 8th and 9th centuries were longer, and at the time of the Norman Conquest assumed a very



Switzerland. Peasants from the Rhine Valley and Appenzell



Switzerland. Map of the mountain republic known as the playground of Europe

ill-balanced form with long wide blade, short pommel, and cross hilt. By the 15th century a type had evolved with blade tapering to a fine point, adapted rather for thrusting than cutting, and a long grip. From this type branched off the two-hand sword, often five feet long over all which needed a wide

its full growth of 60 to 80 ft. in about 50 years, though it lives for some 200. The winged fruit, or samaras, enable it to propagate freely. The firm, fine-grained timber is used in the making of furniture, etc. See Maple.

SYDENHAM. Residential suburb of S.E. London. It is about 8 m. from London, and is mainly in the metropolitan borough of Lewisham. The Southern Rly. has stations here. To the S.W. is the Crystal Palace (q.v.).

SYDENHAM, CHARLES EDWARD POULETT THOMSON, BARON (1799-1841). British statesman. Born at Wimbledon, Sept. 13, 1799, in 1826 he entered Parliament for Dover, and became vice-president of the board of trade in 1830. M.P. for Manchester in the Reform Parliament of 1832, two years later he became president of the board of trade. In 1839 he was appointed governor-general of Canada, and was largely instrumental in effecting the union of the provinces. Raised to the peerage in 1840, he died Sept. 19, 1841.

SYDENHAM, GEORGE SYDENHAM CLARKE, BARON (b. 1848). British soldier and administrator. Born July 4, 1848, he was commissioned in the Royal Engineers in 1868. He served with distinction in Egypt, 1882, and the Sudan, 1885, and on his return became secretary to the colonial defence committee, 1885-92. Knighted in 1893, he was governor of Victoria, Australia, 1901-4. On his return he was largely responsible for the re-constitution of the war office and the formation of the imperial war council. In 1907 he was appointed governor of Bombay, retiring with a peerage in 1913. In 1927 he published *My Working Life*, and in 1928 *Studies of an Imperialist*.

SYDENHAM, THOMAS (1624-89). English physician. Born Sept. 10, 1624, in 1647 he entered Wadham College and studied medicine there and in France. About 1663 he began to practise in London, and in 1676 published his *Observationes Medicæ*. He died Dec. 29, 1689.

Sydenham, one of the great independent medical thinkers of his time, carried out a series of observations on epidemic diseases and introduced new treatment of small pox and fevers.

SYDNEY. Light cruiser belonging to the Australian navy. On Nov. 9, 1914, she caught the German raiding cruiser Emden at Cocos

Keeling Island, forced her to fight, and drove her ashore. Later the Sydney was attached to the cruiser squadron under Sir D. Beatty. See Cocos; Emden.

SYDNEY. City, first class naval station and principal seaport of Australia, capital of New South Wales. It stands on the shores of Port Jackson, one of the finest natural harbours in the world, and was named after Thomas Townshend, 1st Viscount Sydney (1733-1800), who was colonial secretary.

The harbour has graving docks, floating docks, and patent slips, with extensive loading, unloading, and coaling plant, and facilities for storing and loading grain in bulk. The wharves were in private hands until 1901, when the Harbour Trust was formed. The two halves of the arch of the great bridge over the harbour, begun in 1925, were closed in 1930. The bridge has a main span of 1,650 ft. and an overall length of 3,770 ft., and provides for four electric rly. lines, a roadway sufficient for six lines of traffic, and two footways.

The city has its main streets laid out to the cardinal points of the compass. With its suburbs it abounds in easily quarried sandstone, and its modern buildings invite comparison with any in Europe. The university, founded in 1850, is in 15th century Gothic style, and is surrounded by a park. Other buildings include the Anglican cathedral of S. Andrew, the R.C. cathedral, the Jewish synagogue, town hall, Government House, and the Commonwealth Bank of Australia. There are many parks, squares, and public gardens. The Zoological Gardens are in Taronga Park.

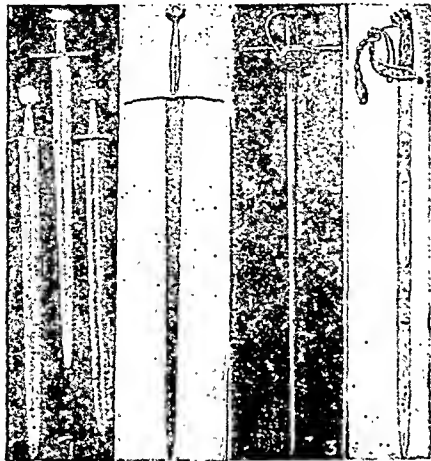
There are fine surfing beaches within easy reach of the city. Sydney is the seat of Anglican and R.C. archbishops. It has many first-class newspapers, including *The Sydney Bulletin*. Pop. 1,127,470. See illus. below.

SYDNEY. City and port of Cape Breton Island, Nova Scotia. Its importance is due to its fine harbour and to the coal mines in the vicinity. It is 277 m. from Halifax. The chief industries are connected with the iron and steel trades. Pop. 22,545.

SYDNEY, NORTH. Port of Nova Scotia, on Cape Breton Island. It is 18 m. N.W. of Sydney. It has tanneries, boot and shoe factories, and coal mines, and exports coal and iron ore. Pop. 6,585.

North Sydney, a suburb of Sydney, N.S.W., stands on the N. side of the Parramatta.

SYDNEY MINES. Town of Cape Breton Island, Nova Scotia. On the N. side of Sydney Harbour, 3 m. from N. Sydney, it is on the Cape Breton coalfield, and its industries are associated therewith. Pop. 8,327.



Sword. 1. Left to right, English, c. 1300; German, c. 1200; Scandinavian, c. 900. 2. State sword of Edward V. 3. Spanish rapier, 1650. 4. Sword presented by the City of London to Earl Beatty, 1919. 1 and 3, Wallace Collection; 2, British Museum.

swinging space for its use. See Armour; Broadsword; Claymore; Regalia; Sabre.

SWORD DANCE. Dance in which use is made of a sword or swords. Such dances are known in many parts of the world. In the Scottish dance, two swords are laid cross-wise on the ground, the dancer performing his steps between the blades. See Morris Dance.

SWORD BEAN (*Canavalia ensiformis*). Climbing herb of the order Leguminosae, native of India, Africa, and tropical America. Its leaves are divided into three large oval leaflets, and the purple, pea-like flowers are borne in long sprays. They are succeeded by scimitar-shaped pods a foot long.

SWORD FISH (*Xiphiidae*). Family of fishes. It is distinguished by having the upper jaw greatly prolonged to form a sword-like weapon. They range in length from 4 to 15 ft., and the sword is sometimes more than 3 ft. long. The common sword-fish (*Xiphias*



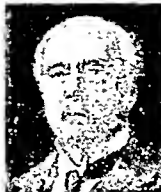
Sword-fish, *Xiphiidae*, showing the strong, sword-like elongation of the upper jaw.

gladius) is found on both shores of the Atlantic, and occasionally in the British seas.

SWORDS. Town of co. Dublin, Irish Free State. It is 8 m. from Dublin, on the G.N. of Ireland Rly. There are remains of an abbey and a castle, as well as a round tower. Pop. 839. See Round Tower.

SYBARIS. Greek town in Lucania, S. Italy, on the W. side of the gulf of Tarentum. Its inhabitants were so notorious for their love of luxury that the term Sybarite became synonymous with voluptuary. In 501 B.C. Sybaris was completely destroyed.

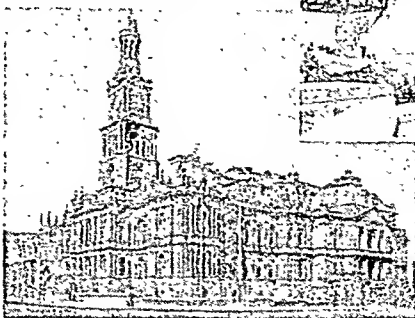
SYCAMORE (*Acer pseudoplatanus*). Tree of the order Aceraceae. A native of Europe and W. Asia, it was introduced into Britain about 1551. It is a hardy, quick-growing tree, flourishing in exposed situations, and reaching



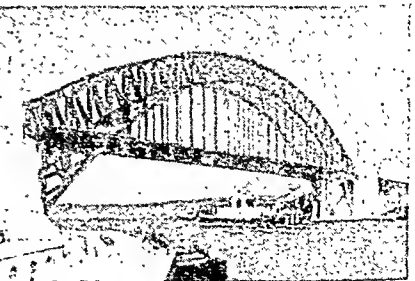
Baron Sydenham, British soldier. Russell.



Thomas Sydenham, English physician.



Sydney. The City Hall. Above, architect's drawing of Sydney Bridge, which crosses the harbour in a single span. It has a 57-ft. roadway, two footways, and four lines of railway. See above.



SYENITE. Igneous rock of granite-like texture, consisting chiefly of orthoclase feldspar and mica, hornblende, and augite. So called from Syene in Egypt, syenite is found in various parts of Europe, N. America, Asia, etc.

SYKES, SIR FREDERICK HUGH (b. 1877). British air administrator. Born July 23, 1877, he entered the army in 1901. Qualifying as a pilot in 1911, he was then appointed commander R.F.C., military wing, which he raised. During the Great War he served with it in

France, 1914-15, and commanded the R.N.A.S. in the E. Mediterranean, 1915-16. Controller-general of civil aviation, 1919-22, he was



Sir Frederick Sykes,
British Air administrator
Russell

chief of the air section at the Paris peace conference in 1919. He was made K.C.B. and G.B.E. in 1919, and in 1922 was returned as M.P. for the Hallam div. of Sheffield. In 1928 he resigned his seat on being made governor of Bombay. He published *Aviation in Peace and War*, 1922.

SYKES, SIR MARK (1879-1919). British soldier

and traveller. Born March 16, 1879, son of Sir Tatton Sykes, 5th baronet, whom he succeeded in 1913. He served in the S. African War, 1899-1902, and in 1905-7 was hon. attaché at the British embassy, Constantinople, during which period he journeyed in Asiatic Turkey. In the Great War he raised a battalion of the Yorkshire regt., and acted as special emissary to Petrograd and the Caucasus, and later to Mesopotamia. M.P. for Central Hull, 1911-19, he took an active interest in many public questions, and was an enthusiastic supporter of Zionism. He died Feb. 16, 1919.

His grandfather, Sir Tatton Sykes (1772-1863), 4th baronet, was noted as an owner of racehorses, a breeder of horses and sheep, and a master of foxhounds.

SYKES, SIR PERCY MOLESWORTH (b. 1867). British administrator. Born Feb. 28, 1867, and educated at Rugby and Sandhurst, he joined the 10th Lancers in 1888. He travelled extensively in Persia and Baluchistan, and took part in the South African War. After service in the Great War, 1914-15, he was appointed consul-general in Chinese Turkistan in 1915, and in 1916 was sent to Persia to protect British interests, and there he remained until 1920.



Sir Percy Sykes,
British soldier
Lafayette

SYLLOGISM (Gr. *syn*, together; *logizesthai*, to reckon). Typical form of deductive reasoning, in which certain propositions having been laid down, something different from them follows as a necessary consequence: All men are mortal; Socrates is a man; therefore, Socrates is mortal. Every syllogism contains two premises and a conclusion; the major term is the predicate, the minor the subject, of the conclusion. There are four modes: A (universal affirmative; all men are mortal); E (universal negative; no men are immortal); I (particular affirmative; some men are clever); O (particular negative; some men are not clever). See *Logic*.

SYLPH (Fr. *sylphe*, from Gr. *silpē*, a kind of beetle). Fairy-like being holding an intermediate place between the material and the immaterial and inhabiting the air, according to the mythology of the Rosicrucians (q.v.).

SYMBIOSIS (Gr. *syn*, together; *bios*, life). In biology, term for a kind of partnership between living organisms of unrelated species: associated existence for purposes of nutrition. Plants which live in this manner are dependent in various ways one upon another. Symbiosis is best seen in the *liebens*, which are composite plants consisting of algae and fungi.

SYMBOLISM (Gr. *symbolon*, a token). Conventional representation of an idea, person, or thing by something else which recalls it by some analogy or association. It is an essential element in primitive, hieratic, and heraldic art. Early Christian

symbolism, of which such examples as the lamb, dolphin, fish, dove, and palm branch are common in the catacombs, was largely derived from Jewish and pagan sources.

Symbolism was the term applied to a school of French poets, influential in the latter years of the 19th century, who used symbolic methods of expression.

SYMONDS, JOHN ADDINGTON (1840-93). British man of letters. Born at Bristol, Oct. 5, 1840, he was educated at Harrow and Balliol College, Oxford, where he took the Newdigate prize and an open fellowship at Magdalen. Severe study led to a breakdown in health, and the last 20 years of his life were largely spent at Davos Platz, Switzerland. He died April 9, 1893.

Symonds's first book was *An Introduction to the Study of Dante*, 1872. His greatest work, *The Renaissance in Italy*, took him 11 years to write, 1875-86. His most characteristic effort was the sonnet sequence, *Animi Figura*, 1882. His other books include studies of the Greek poets, *Lives of Shelley, Sidney, Ben Jonson, and Michelangelo*, a volume on *Shakespeare's Predecessors in the English Drama*, and English versions of *Cellini's Autobiography* and *Carlo Gozzi's Memoirs*.

SYMOND'S YAT. Beauty spot on the Wye in Herefordshire. The Yat (gate) is an opening, 600 yards across, between two hills at the neck of a meander of the river.

SYMPHONY (Gr. *symphonia*, a sounding together). Musical composition, essentially a sonata (q.v.), for orchestra. Developed from the Italian operatic overture, a definite form was fixed by Haydn, to whom justly belongs the title of Father of the Symphony. He produced about a hundred, while Mozart wrote 49. Beethoven composed only nine, but into them he infused a depth of emotion and expression unknown to his predecessors, and unsurpassed by any of his successors. Other eminent composers of symphonies are Schubert, Schumann, Mendelssohn, Spohr, Raff, Rubinstein, Brahms, Mahler, Elgar and Tchaikovsky.

SYNAGOGUE (Gr. *synagōgē*, a gathering, from *synagēin*, to bring together). In the history of Judaism, an assembly of Jews for worship and religious instruction, and hence a building specially set apart for that purpose. As a focus of national life the institution of the synagogue has been dated from the great exile, when the Jews, deprived of the services of the Temple, gathered together to worship Jehovah. In time the synagogue was used, not only as a place of worship, but also as a court of law and as a school. The worship, which included prayers and the reading and exposition of the law and the Prophets, was conducted by the *chazan* or reader. At the east end was the ark, containing the scrolls of the law. See *Jews*; *Temple*.

SYNCLINE. In geology, the dipping of the strata inwards towards the axis of an earth fold, producing a trough-shaped or basin-like arrangement of the strata. Synclines form the troughs and antilines the arches of a series of earth folds. See *Anticline*, and *illus.* p. 99.

SYNDICALISM. Extreme development of trade unionism. The syndicalist is not content, like the earlier trade unionist, to strive for better conditions of labour, higher wages, and shorter hours; he believes in the complete removal of the capitalist class and the substitution of the trade union as the owner and director of each particular industry. Hence he is also in opposition to the Socialist, who believes in the collective ownership of the sources of industry and of the

means of distribution and exchange. The syndicalist movement had its origin in France, where it has been clearly and carefully expounded in the writings of G. Sorel. See *Socialism*; *Trade Union*.

SYNDICATE. Term literally meaning a body of syndies, but now generally applied to a body of persons banded together to carry out some business enterprise, a temporary organization preparatory to a more permanent one. In its more correct signification of a body of syndies, that is, delegates who are appointed for certain specific purposes, the word is used in the university of Cambridge.

SYNGE, JOHN MILLINGTON (1871-1909). Irish dramatist. Born at Rathfarnham, near Dublin, April 16, 1871, he graduated at Trinity College, Dublin, and later went to the Aran Isles and Galway Bay to study the life of the peasants. He combined extreme realism with immense imagination, and achieved great success as a dramatist.

The following are the best known of his plays: *The Shadow of the Glen*, 1903; *Riders to the Sea*, 1904; *The Well of the Saints*, 1905; *The Tinker's Wedding*, 1907; *The Playboy of the Western World*, 1907; and *Deirdre of the Sorrows*, 1910. He died March 24, 1909. Pron. Sing.



John M. Synge,
Irish dramatist

SYNOD (Gr. *synodos*, assembly). Eccles. term for a meeting of churchmen for deliberation on church affairs. In the early Church a universal synod, to which the bishops of the whole Church were summoned, was usually known as a general or oecumenical council;

a provincial synod was an assembly of the clergy of one province or patriarchate. The convocation of Canterbury is an existing example of the provincial synod. Among Presbyterians the synod is a court between the General Assembly and the presbyteries.



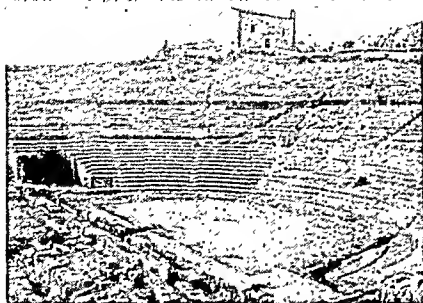
Symond's Yat. Bend of the Wye as it passes the Yat (right)

SYON HOUSE. Seat of the duke of Northumberland. In the co. of Middlesex, between Brentford and Isleworth, it is a large quadrangular building of three storeys, surmounted since 1874 by the stone lion which once stood on old Northumberland House, near Trafalgar Square. It occupies the site of a monastery founded in 1415, and converted by the protector Somerset into a palace. The existing structure was remodelled by Robert Adam about 1760.

SYPHILIS. Infectious disease caused by a micro-organism, the *Treponema pallidum* or *Spirochaeta pallida*. It is of world-wide occurrence, and is responsible for widespread sickness, misery, and mortality. In the great majority of instances infection is conveyed during the sexual act. The period from the date of infection to the commencement of symptoms is from three to four weeks. The first sign of the disease is a small red pimple which gradually enlarges, becomes ulcerated, and develops into the hard chancre typical of the disease.

A sufferer from active syphilis should lead a carefully regulated life. Prolonged administration of mercury is still essential. Organic

preparations of arsenic are also used. Treatment should last for at least two years, and a patient should not marry for two years after the termination of treatment, and only then if periodic tests have been negative. Free treatment, under the strictest secrecy, is provided in all populous centres.



Syracuse, Sicily. Remains of the Greek theatre, hewn in the living rock

SYRACUSE. Seaport of Sicily, capital of the prov. of Syracuse. It is 54 m. by rly. and 32 m. direct S. of Catania, which has superseded it as a port. The cathedral embodies the remains of a Doric temple; the museum contains a collection of pre-Christian antiquities. Founded in 734 B.C., Syracuse became the chief Greek colony in Sicily. Dionysius, tyrant after 405 B.C., extended the authority of the city over E. Sicily and S. Italy. After a siege, 214-212 B.C., the city was captured by the Romans, and sacked. Its ruins include Greek fortifications and a theatre, Doric temples, a Roman amphitheatre, Roman houses, and Christian catacombs. Pop. 56,000.

SYRACUSE. City of New York, U.S.A. It stands at the head of Onondaga Lake, 150 m. W. of Albany, on the New York State barge canal, and the Erie and Oswego canals. It is the seat of Syracuse University. Manufactures include motor vehicles, typewriters, agricultural implements, foundry and machine-shop products, clothing, chemicals, boots and shoes, furniture, and cement. Pop. 182,003.

SYRIA. French mandated territory of W. Asia. To the ancients Syria was the coastland of the E. Mediterranean between the Taurus and Egypt. Syria under the mandate is bounded N. by Turkey, S. by Palestine and Transjordan, E. by Iraq, W. by the Mediterranean. Originally comprising five territories, it now consists of the republic of Syria, together with the states of the Alawis (Alawites) and Jebel ed Druz (Druze), and the republic of the Lebanon. Important cities include Damascus, Aleppo, Beirut, Homs, Hama, Tripoli, Antioch, Latakia and Alexandretta. The area is estimated at 60,000 sq. m. Pop. 2,831,622.

About 2000 B.C. Syria formed part of Aram (q.v.). It was subject to Egypt from about 1530 B.C. till about 1250, when the growing power of Assyria began to make itself felt. In the 8th century Assyria subjugated the whole land, which, however, passed to Babylon in the 7th. Persia overran it, 538 B.C., and held it till Alexander the Great took it 200 years later. In 64 B.C. it became a Roman prov., and the country remained under Rome and then under the Byzantine Empire till A.D. 634. Syria next passed to the Saracens. In the second half of the 11th century it was occupied by the Seljuks. In 1516 it was occupied by the Ottoman Turks, who retained it till 1831-33, when it was conquered by Mehmet Ali, who restored it to the Turks in 1840. The Turks held it till they were driven out by the British in 1918.

Ever since France had intervened in the Lebanon to stop Turkish atrocities, she had maintained political claims to Syria, and her

special position was recognized by an Anglo-French agreement in 1916. Accordingly, after the Great War the British withdrew from the country, and the Supreme Council of the Allies gave the mandate for Syria to France. In 1928 the Constituent Assembly drew up a new constitution, but this did not receive the approval of the French, who in 1929 dismissed the assembly. See Damascus; Druses; Palestine; Turkey.

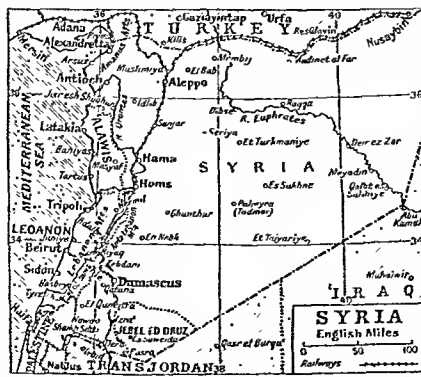
SYRINGA. Genus of shrubs of the order Oleaceae, of which the best known is lilac. The mock orange usually known as the syringa belongs to the order Saxifragaceae. A native of the Himalayas, it is a hardy shrub bearing cymes of sweet-scented creamy-white flowers, frequently used at weddings as a substitute for orange blossom. See Lilac.

SZEGED. City of Hungary. It stands on the right bank of the Theiss (Tisa, Tisza), 118 m. by rly. S.E. of Budapest. The town hall, Gothic cathedral and museum are buildings of importance. The Franciscan monastery has a fine library and a museum of antiquities. There is a university. Szeged is the chief commercial centre of the Alföld. Pop. 125,039. See Alföld.

T. Twentieth letter of the English and Latin alphabets. It is a hard dental or teeth-sound, to which the soft d corresponds. Its normal sound is that of t in tent. Before ia, io it takes the sound of sh, as in partial, cautious, unless s precedes, as in digestion, question, although here some prefer to pronounce queshun. T is frequently silent between two consonants, as in castle and listen. In combination with h it forms what is really a separate letter, with two distinct sounds, one hard, the other soft, e.g. think, and smooth. In most words borrowed from French, e.g. Thames, Thomas, thyme, it is pronounced as a simple t. See Alphabet; Phonetics.

TAAL (Dutch, language). Dialect of Dutch spoken in South Africa. It originated in the colloquial North-Dutch of the 17th century, but early underwent great changes. It is remarkable for the almost complete loss of inflexional endings, the absence of gender, laxity of syntax, and its generally analytic character. It has been influenced by English, French, etc.

TABARD. Official cloak worn by heralds, and also by trumpeters and drummers of the British household cavalry when in full uniform. In the heralds' tabard the back and front parts and shoulder wings are emblazoned in the proper tinctures with the royal arms:



Syria. Map of the French mandatory state of W. Asia

in that of the trumpeters and drummers they are embroidered with the royal badge and cipher. See Herald.

The Tabard Inn was an ancient hostelry in Southwark, near the S. end of London Bridge. It is famous as the inn from which Chaucers' Canterbury Pilgrims set out on their journey to the shrine of S. Thomas.



Syringa, the sweet scented Mock Orange

sides boarded, and the E. side hung with curtains, while the top was covered with sheets of various materials. The larger part of the tent, called the Holy Place, contained the golden altar of incense, table of shewbread, and golden candlestick. The inner part, or Holy of Holies, screened by a veil, contained the ark (q.v.), and was only entered by the high priest, on the day of atonement.

The Feast of Tabernacles was a Hebrew festival celebrating the completion of the harvest. It was kept for seven days in



October, during which worshippers lived in booths of green boughs, perhaps in allusion to those used by labourers in vineyards.

TABLE (Lat. tabula). Smooth, flat, elevated surface used mainly as an article of furniture. The altar, or communion table, is

sometimes known as the Lord's Table. Table is also used for a hard surface on which something is written or engraved, for instance the Ten Commandments or the Twelve Tables.

Tables of the Roman patricians were made of precious woods, finely inlaid, or of bronze. English tables were quite narrow at first. In the Jacobean period, tables were of solid oak, with moulded edges and heavily carved legs. Under Charles I wings were added, originating the gate-legged type. See Furniture.

TABLE BAY. Bay of the Cape Peninsula, S. Africa, on the N.W. side. It was first visited by Antonio de Saldanha in 1503. From 1620 onwards Table Bay became a port of call for ships proceeding E. On the S. side of the bay is Cape Town, and farther S. lies Table Mountain, 3,582 ft. high. There is another Table Mountain in Natal.

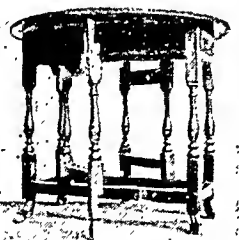


Table 1. Carved oak refectory table. 2. Oak octagonal gate-leg, 17th century

1. Courtesy of Gill & Reigate; 2. Victoria & Albert Museum, S. Kensington

TABLE TENNIS OR PING PONG. Indoor form of lawn tennis. About 1900 the game was introduced into England, and the Ping-Pong Association and the Table Tennis Association were formed. It was first played with a battledore, but later a wooden bat was used. Scoring was as in lawn tennis.

In the game as played to-day each player serves five times in turn, and the game is 21 up. The server must make the ball hit the table on his own side of the net, whence it must bounce into the opponent's court. Volleying is not allowed either in the return of service or rally—otherwise the rally is played just as in lawn tennis. The regulation size of the table is 9 ft. long and 5 ft. wide. The net, which divides it into two courts, must be attached at each end to a post 67 ins. in height. The ball is of celluloid and between 4½ and 4¾ ins. in circumference.

TABOO. Polynesian word denoting persons, places, things, or acts which are to be shunned. In modern anthropology it embraces all prohibitions enforced by magico-religious sanctions, fortified by fear of ill-fuck, disease, or death. The violator of a taboo is himself taboo, lest his transgression should become contagious. The principle is encountered in Melanesia, Siberia, Madagascar, and W. Africa. Linked in early Semitic society with religious sanctions, it became the basis of the Mosaic sanitary law.

TABOR. Mountain of Galilee, the traditional scene of the Transfiguration. It is about 6 m. E. of Nazareth, and is known as Jebel at Tur.

TABRIZ. City of Persia. Lying about 350 m. N.W. of Teheran, is a trade centre. During the Persian revolution of 1909 the royalists besieged it, but it was relieved by a Russian force, who occupied the city until the beginning of the Caucasus campaign in the Great War. The Turks seized the city in Jan., 1915, but evacuated it at the close of the month. Abandoned by the Russians early in 1918, it was again seized by the Turks, who held it until Oct., 1918. Pop. 180,000.

TACHOMETER. Instrument for registering small variations in the velocities of machines. One such instrument consists of a mercury tube and bulb which is whirled round by the machine. Centrifugal action causes the recession of the mercury in the tube, and the degree of its descent (or ascent) measures variations in the running speed. For measuring the angular speed of a revolving shaft a device similar to a small Watt governor is used. The instrument known as a speedometer (q.v.) is a variety of tachometer.

TACITUS, MARCUS CLAUDIUS. Roman emperor, Sept., 275–April, 276. He was consul in 273, and at the age of 70 was chosen emperor by the senate, after the murder of Aurelian. During his short reign he endeavoured to restore the power of the senate, and to check extravagance by means of sumptuary laws. He fell victim to a conspiracy, and was succeeded by Probus.

TACITUS, CORNELIUS (c. A.D. 55–c. 119). Roman historian. His first work was a dialogue on oratory. When he was about 40 appeared the Agricola and the Germania, the latter valuable as giving the first detailed account of the manners and customs of the people who inhabited central Europe in the beginning of the Christian era. But the great work of Tacitus was his history of the Roman Empire from the accession of Tiberius. Of the 30 books only about half have been preserved, but sufficient to give the author's views concerning the emperors Tiberius, Claudius, Nero, and the events of 69 A.D., when there were three emperors in one year.

To Tacitus more than any other Roman writer is due the long-standing belief that the early Roman empire was a mass of iniquity and corruption, both public and private.

TACNA. Province of Peru, in the arid region of the S. Its area is 5,909 sq. m.

In 1883 Tacna and the neighbouring province of Arica came into dispute between Chile and Peru. In that year they were given to Chile for ten years, at the end of which a plebiscite was to decide their fate. This did not take place, and Chile remained in possession. In 1927 the U.S.A. government proposed that they should be given to Bolivia, in return for certain payments, but Peru objected. In 1929 the dispute was settled. Tacna was given to Peru, and Arica to Chile, Chile agreeing to pay £1,200,000 to Peru.

TACOMA. City of Washington state, U.S.A. At the head of Commencement Bay, a branch of Puget Sound, 27 m. S. of Seattle, it is a busy Pacific port, and carries on a flourishing wholesale trade. Pop. 104,455.

Tacoma is a name for a quiescent volcano of the Cascade Range, Washington, better known as Mt. Rainier. It is 14,363 ft. high.

TACTICS. Art of conducting battles after the strategist has brought the combatants within striking distance of each other.

The objects in naval tactics have always been to sink or disable the enemy's ships, and to kill the crews or force them to surrender. In olden days the issue was decided at close quarters, but later most battles were decided by the gun, and the object of the tactician was to manoeuvre so as to concentrate the fire from a large number of ships upon a smaller number. As gun ranges have increased, relative visibility from different directions has required more consideration. Skill in gunnery, in range-finding, and in observing the fall of projectiles are most potent factors in modern naval actions. Aircraft-carrying vessels have been introduced with a view to air attack upon capital ships by bomb and torpedo, thus adding an additional factor to the problem confronting the naval tactician.

In military tactics changes in weapons have brought corresponding changes in the tactical handling of armies and of their component parts. The result of a modern battle is determined mainly by fire action. Infantry, which can combine movement with fire action, and can also engage in hand-to-hand combat, is still considered the decisive arm, and the action of the other arms is subsidiary. See Artillery; Cavalry; Infantry; Strategy; Tank.

TADCASTER. Market town of Yorkshire (W.R.). It stands on both sides of the Wharfe, 9 m. from York, on the L.N.E. Rly. For centuries the town has been famous for its beer; another industry is the quarrying of limestone. About 2 m. away is the battlefield of Towton, scene of a Lancastrian defeat, 1461. Market day, Mon. Pop. 3,504.

Tadmor. Original name of the old city of Syria whose Greek name was Palmyra (q.v.).

TAL (Malay tail, a weight). Name for the Chinese liang or silver pound weight. It is the uncoined monetary unit of China, equalling by treaty 1½ ounce av., and fluctuating in value with that of silver. It is divided for currency purposes into ten mace, 10 candaren, and 1,000 li, or 1,220 copper cash.

TAFF. River of S. Wales. Rising in the Brecknock Beacons, it flows 40 m. S.S.E. through Glamorganshire, passing Merthyr Tydfil, Pontypridd, and Llandaff, and entering the Bristol Channel at Cardiff. It traverses a coal and iron dist. and its course is followed by the Taff Vale Rly., now part of the G.W. system. This line, opened in 1840, served Merthyr, Cardiff, and other places in the great industrial area around them, and owned docks at Cardiff and Penarth. Its headquarters and works were at Cardiff.

There is another river of S. Wales called Taff or Taf. Rising in N.E. Pembrokeshire, it flows 25 m. S. and S.E. to Carmarthen Bay.

TAFT, WILLIAM HOWARD (1857–1930). American statesman. Born at Cincinnati, Ohio, Sept. 15, 1857, he practised law in his native state. Judge of the superior court of Ohio.



William H. Taft, American statesman

1887–90, he then became U.S. solicitor-general. He was a judge of appeal, 1892–1900, and civil governor of the Philippine Islands, 1901–4. On his return Taft became secretary of war in Roosevelt's cabinet. Elected president of the U.S.A., 1908, his term of office was unmarked by any striking events. On his retirement Taft became professor of law at Yale University. In July, 1921, he was appointed chief justice of the Supreme Court of the U.S.A. He died March 8, 1930.

TAGANROG. Town of the Socialist Soviet Republic. It is situated on the N.E. shore of the sea of Azov, 20 m. from the mouth of the Don. Its importance has declined owing to the silting up of the harbour and the competition of Rostov. The chief exports are grain, butter, tallow, and caviare. Pop. 83,465.

TAGG'S ISLAND. Islet of the Thames. It lies about half-way between Molesey lock and Hampton ferry, opposite the E. end of Hurst Park racecourse. In 1928 it was leased for a pleasure resort.

TAGLIAMENTO. River at N.E. Italy. It rises in the Carnic Alps and flows S. across Udine to the gulf of Venice, after a course of 100 m. Heavy fighting took place along the line of the Tagliamento in the Great War. After the Italian reverse at Caporetto, the armies retreated to the river, where, from Oct. 28–Nov. 5, 1917, they maintained a stubborn resistance. See Caporetto; Italy; Piave. Pron. Tahl-yamento.

TAGLIONI, MARIA (1804–84). Italian dancer. Born at Stockholm, April 23, 1804, daughter of a ballet master, she made her first appearance in Vienna at the age of 18. In 1827 she appeared in Paris, and immediately attained an enormous popularity, for the next twenty years being the most famous ballet dancer in Europe. Her greatest success was in her father's ballet La Sylphide. She died April, 23, 1884. Pron. Tahl-yohne.



Maria Taglioni, Italian dancer

TAGORE, SIR RABINDRANATH (b. 1861). Bengali poet. Of a family distinguished in religion, letters, and art, he was born in Calcutta May 6, 1861. In 1901 he founded a reformed school at Bolpur, Bengal, which he made his life-work. He was awarded the Nobel prize for literature in 1913, being knighted in 1915. He wrote many poems, dramas, and novels in Bengali and English, including Gitanjali (Song Offerings), 1913; The Crescent Moon, 1913; The King of the Dark Chamber, 1914; The Post Office, 1914; Home and the World, 1919; Fireflies, and Letters to a Friend, 1928.



Rabindranath Tagore, Bengali man of letters
Bourne & Shepherd

He also wrote My Reminiscences, 1917; Nationalism, 1917; and Greater India, 1923.

TAGUS (Span. Tajo; Port. Tejo). River of the Iberian peninsula. It rises in Spain in the Sierra de Albaracin, curves to the N.W., then flows W.S.W. past Toledo and Alcántara,

forms for a few m. the boundary of Spain, and finally crosses Portugal to its estuary near Lisbon after a course of 565 m., of which 192 m. are in Portugal. It is tidal, and navigable by large vessels to Santarem.

TAHITI OR OTANEITE. Most important of the Society Islands. It is mountainous with a low fertile coastland. Papeete is the chief town. It was shelled and damaged by German cruisers in Sept., 1914. The area is about 600 sq. m. Pop. 8,585. See Society Islands.

TAILOR BIRD (*Orthotomus sutorius*). Species of Asiatic bird, belonging to the Sylviidae. It derives its name from its method of nest building. Two large leaves are drawn together, and sown at the edges with cocoon silk or vegetable fibres; and inside the pocket thus formed the birds construct a nest of grass and hair. The birds are common in India and China, are 6 ins. long, and have greenish plumage.

TAILTEANN GAMES. Irish national games. Held in the distant past, they were revived in 1924 and held again in Dublin in 1928. There are international and national sections and competitions, not only in athletic events, but in literary work, poetry, drama and prose; also in art, music and dancing.

TAIN. Burgh and seaport of Ross and Cromarty, Scotland. It stands near the south side of Dornoch Firth, 44 m. from Inverness, on the L.M.S. Rly. The church of S. Duthus was founded in the 15th century. The industries include distilling. Pop. 1,561.

TAINAN. Town of Formosa. It stands near the S.W. coast, a few miles S.E. of Anping, its port, and is connected by rly. with the capital, Taihoku, in the N. Pop. 87,930.

TAINE, HIPOLYTE ADOLPHE (1828-93). French historian, critic, and academician. Born at Vouziers, Ardennes, April 21, 1828, for some years his religious opinions dobarred him from an academic career, and he occupied himself with independent work, e.g. *Les Philosophes du XIXe Siecle*, 1856, and *Histoire de la Littérature Anglaise*, 1863-64; but in 1864 he was appointed professor of aesthetics in the École des Beaux Arts, four volumes on *La Philosophie de l'Art* being a direct result of his academic lectures. His treatise *De l'Intelligence* made a noteworthy contribution to the scientific study of mind. Taine's last twenty years were devoted mainly to a series of works on *Les Origines de la France Contemporaine*, which by their learning, impartiality, and energy of stylo give him a high place among historians. He became a member of the Academy in 1878, and died March 5, 1893.

TAIT, ARCHIBALD CAMPBELL (1811-82). British prelate. Born in Edinburgh, Dec. 22, 1811, he became fellow and tutor at Balliol College, Oxford, and was ordained in the Church of England in 1836. In 1842 Tait succeeded Arnold as headmaster of Rugby; in 1849 he was made dean of Carlisle, and in 1856 bishop of London. In 1868 he was appointed archbishop of Canterbury, and he died Dec. 3, 1882.

TAJIKISTAN. Autonomous republic of Soviet Central Asia. It lies N. of

the river Oxus, and is bounded N. and W. by the Kirghiz and Uzbekistan republics, S. by Afghanistan, and E. by Sin-Kiang. It was formed from the regions of Bokhara and Turkistan. Stalinabad (Dushambe) is the capital Area 56,608 sq. m. Pop. 827,400. See Russia.

TAJ MAHAL. Indo-Moslem mausoleum near Agra. It was completed in 1650 by the Mogul emperor, Shah Jehan, in memory of his favourite wife, the sultana Nour Mahal. The building is mainly constructed of white marble, and occupied 20,000 workmen for over 20 years. See illus. p. 33.

TAKIN (*Budorcas taxicolor*). Large ruminant mammal, occupying a rather doubtful position between the goats and the antelopes. It seems to occur only in the N. of Assam, in Bhutan, and in N.W. China. It is a heavy and bulky animal, and is found in small herds in the mountains.

TAKORADI. Harbour of the Gold Coast, near Sekondi. In 1921, to provide an outlet for the produce of the colony, it was decided to build a harbour at Takoradi. In March, 1928, the harbour was opened. Protected by breakwaters, it has extensive wharves and other equipment.

TAKU. Village situated at the mouth of the Haiho (Peiho) in Chih-li prov., China. Its forts formerly constituted a first line of defence for Tientsin, 47 m. up the river, and Peking. They were taken by the British and French forces in 1858, in 1860, and during the Boxer rising in 1900, when the forts were demolished. See Boxers; China; Peking.

TALAVERA. Town of Spain. The ancient Caesaro-briga, it stands on the Tagus, 83 m. by rly. S.W. of Madrid. Parts of the ancient walls, a Roman gateway, a 10th century Moorish tower, and a Gothic church are of historical interest. A 15th century bridge of 35 arches spans the river. Pop. 12,000.

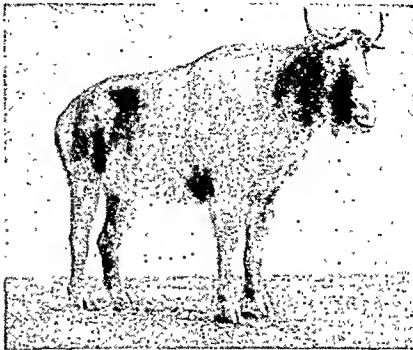
The battle of Talavera was fought July 27-28, 1809, in the Peninsular War. After a stubborn fight the French, with losses of over 7,000, retired to Madrid, but the British were unable to pursue them.

TALBOT. Name of an ancient English family. The family proves descent from Richard Talbot, lord of Linton, Herefordshire, who was appointed custodian of Ludlow Castle by Richard I. The manor of Linton was confirmed by Edward III to Gilbert, who sat as Baron Talbot in the Parliament of 1331. The head of the family under Henry V was Gilbert, a distinguished soldier, upon whose death the title descended to his brother John, first earl of Shrewsbury (q.v.), whose descendants have since retained it. Talbot is the name of a breed of dogs, something like the bloodhound of to-day. It is the badge of the Talbot family.

Talbot House. Soldiers' rest-house at Poperinghe in the Great War, more popularly known as *Toe H.* (q.v.).

TALC. In mineralogy, a magnesium silicate. A soft stone with a greasy feel, it is silvery white in appearance and easily cut. Yellow

and green varieties occur, the latter in Tirol. It is used, powdered, under the name of French or Spanish chalk by tailors. Talc is also a common name for Muscovite or common mica. See Soapstone; Steatite.



Takin. Ruminant animal, large and heavily built, found in herds in the Tibetan mountains

TALENT (Gr. *talanton*, weight, balance). Unit of weight and monetary unit of the ancient Greeks. There were two talents in general use, the Babylonian or Aeginetan, and the Attic or Euboic. The talent was 60 minae or 6,000 drachmae (roughly, £240). The Attic talent weighed about 57½ lb.

TALKING FILM. Name for a cinematograph film in which speech, music and other sounds are reproduced together with the moving pictures. See Cinematograph.

TALLBOYS. Double chest of drawers, placed one above the other, the upper usually being narrower and recessed. High-boys (Fr. *hautbois*) are much the same, but have taller top sections. Lowboys are small chests of drawers placed on tall legs, usually of the cabriole type.



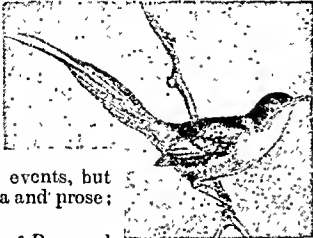
Tallboys in walnut, Queen Anne period: height, 6 ft. 2 ins.; width, 3 ft. 3 ins. By courtesy of Gill & Raigate, Ltd., London

TALLEYRAND-PÉRIGORD, CHARLES MAURICE DE (1754-1838). French statesman. Born Feb 13, 1754, son of the Comte de Talleyrand-Périgord, he entered the Church, and in 1789 was made bishop of Autun, representing his diocese when the States-General assembled in that year. He acquired a position of distinction in the National Assembly, and took a leading part in attacking the privileges of the Church. He relinquished his orders in 1791, and in 1792 went to England on an unofficial political mission, the French monarchy not having as yet been formally ended. To the extremists, however, he was suspect, and did not return to France until the Terror was passed.

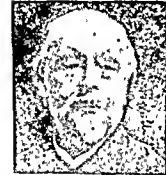
He became the foreign minister of the Directory in 1797 and, after the establishment of the Consulate, continued as foreign minister to Napoleon until the treaty of Tilsit, 1807, after which he retired with the title of prince of Benevento. In 1812 Talleyrand took the lead in the faction which worked against the emperor, and on his deposition in 1814 was rewarded by becoming foreign minister to Louis XVIII. At the



C. M. de Talleyrand, French statesman. After Gérard. Photo: Bruckmann



Tailor Bird of Eastern Asia



Hippolyte Taine, French historian. After Bonnat



Archibald Tait, British prelate

Congress of Vienna he secured to France recognition on an equal footing with the four Great Powers. He was counsellor to Louis Philippe in the July Revolution of 1830, and as ambassador he established friendly relations between Great Britain and the Orleans monarchy. He retired finally in 1834, and died May 17, 1838.

Tallinn. Alternative name for the capital of Estonia, also known as Reval (q.v.).

TALLIS, THOMAS (c. 1515-85). English composer. He was organist of Waltham Abbey until its dissolution in 1540, and was later a gentleman of the Chapel Royal and organist there with his pupil W. Byrd (q.v.). In 1575 they published their 34 motets, 16 of which were by Tallis. He wrote a large amount of church music. Tallis died Nov. 23, 1585.

TALLOW TREE (*Excoecaria sebifera*). Tree of the order Euphorbiaceae, native of China. It has alternate, oval leaves with a pair of prominent glands at the top of the leaf-stalk. The rather large capsules contain three seeds coated with a substance like tallow, used by the Chinese for candle-making.

TALLY (Fr. *tailleur*, to cut). Device formerly used for recording payments, consisting of a stick, which was marked with cross notches of various sizes and then split, each party to the transaction retaining a half. Names, dates, etc., were written on the stick. The accounts of the royal exchequer in England were kept by means of tallies until 1826, although account books were also used. In some rural districts, notably in the Kentish hop-fields, accounts are still kept with tallies. The name is given to a system of buying and selling goods in which payment is made by instalments.

TALMA, FRANÇOIS JOSEPH (1763-1826). French actor. Born in Paris, Jan. 15, 1763, he made his début in 1787 at the Comédie Française, where two years later he created a furore in Chénier's *Charles IX*. He achieved a series of successes which made him the greatest tragedian of his time. He died Oct. 19, 1826.



François Talma,
French actor
After J. P. Davis

TALMAGE, ALGERNON (b 1871). British artist. A son of Rev. J. M. Talmage, rector of Fifeild, Oxfordshire, he studied art and soon won medals at the Paris Salon. For a time he lived in Cornwall and was associated with the Newlyn School. In 1918 he was the official artist for Canada in France; he was elected A.R.A. in 1922 and R.A. in 1929.

TALMAGE, THOMAS DE WITT (1832-1902). American preacher. Born in New Jersey, Jan. 7, 1832, in 1856 he became minister of a Reformed Church in Belleville, N.J., removing in 1859 to Syracuse, and in 1869 to Brooklyn. From 1895-99 he was a minister at Washington. Talmage edited Frank Leslie's Sunday Magazine and The Christian Herald, and wrote a number of books. He died at Washington, April 12, 1902.



T. de Witt Talmage,
American preacher

TALMUD, THE Compilation which incorporates the labours of the Jewish schools during several centuries. Its basis is the Mishna (repetition), a work which gathered up for the most part the traditional legal discussions (called the Torah) of the scholars who lived between A.D. 70 and about A.D. 200. The discussions were committed to writing about A.D. 200.

There are two Talmuds, the Jerusalem Talmud or Talmud of Palestine, completed towards the end of the 4th century or during the 5th century, and the Babylonian Talmud, completed about A.D. 500.

TAMAR. River of England. Rising in the N. of Cornwall, and flowing S. by E., it forms for part of its length the boundary between Cornwall and Devonshire. It enters the English Channel after a course of 60 m., through Plymouth Sound by an estuary called the Hamoaze. See Saltash.

TAMARIND (*Tamarindus indica*). Tree of the order Leguminosae, a native of the tropics. It attains a height of 50 or 60 ft. and has long leaves. The flowers are succeeded by bean-like pods filled with acid pulp in which the hard seeds are embedded. The outer skin of these pods is removed before they are pre-

pared for the gentle laxative medicine. The wood is used for building and for charcoal, and the bark is administered in dysentery and as a tonic. A yellow dye is extracted from the leaves.

TAMARISK (*Tamarix*). Genus of shrubs and small trees of the order Tamaricaceae, natives of the shores of S.W. Europe, W. Asia, and India. One species, *T. gallica*, found wild upon the coasts of England, is an evergreen tree, 6 ft. to 20 ft. in height, with minute, scale-like foliage and dense spikes of white or rosy flowers in late summer. *T. mannifera* exudes manna (q.v.).

TAMATAVE. Chief port of Madagascar. On the E. coast, it is 229 m. by rly. from Antananarivo. It has an excellent harbour. Pop. 15,022.

TAME. River of England. It rises near Walsall, in Staffordshire, and flows 30 m. to join the Trent about 7 m. above Tamworth. Another Tame is a tributary of the Mersey.

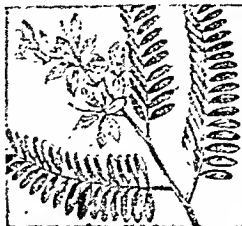
TAMERLANE, TAMBURLAINE, OR TIMUR (1336-1405). Tartar conqueror. He was born of noble birth near Samarkand, and in 1353 began his military career by invading Khorassan. In 1369 he was crowned king of Samarkand, and began his famous series of conquests. His victorious armies reached the Caspian, subdued most of Persia, and routed the Golden Horde. In 1398 he invaded India and sacked Delhi. His victorious war against the Turks and Egyptians resulted in the capture of Damascus and Aleppo, and culminated in the defeat and capture of Bayazid I, 1402. Tamerlane then planned the invasion of China, but died in the midst of his preparations, Feb. 17, 1405.

TAMIL. Agglutinative speech of the Dravidian language-family, spoken in S. Madras, N. Ceylon, and by the Indo-China

Klings. The Tamil-speaking peoples are the most virile element in the S. Indian population. Tamil literature developed under the Jains during the 9th to 13th centuries A.D. Its masterpiece is generally acknowledged to be the Kurral, a didactic poem embodying Bhuddist philosophy, written by Tiruvalluvar.

TAMMANY HALL. Properly designating the building in which is housed a political organization in New York, the term has come to be applied to the organization itself. The genesis of the movement is to be found in the Society of S. Tammany, formed May 12, 1789,

by William Mooney. Concerned at the outset with social and benevolent objects, before long it assumed a political cast, and from 1800 onwards it has identified itself with the National Democratic party. The institution has also devoted much of its activities to municipal politics. A large part of the real power of Tammany is in the hands of its head for the time being, known as the boss. The first of these was William M. Tweed. In 1923 the Hall was sold to a gas company.



Tamarind. Spray of flowers and foliage

TAMMUZ OR THAMMUZ. Phœnician god of the sun. Half the year he spends with the goddess of the underworld, and half with Astarte, goddess of the heavens. He is usually regarded as being equivalent to the Greek Adonis.

TAMWORTH. Borough and market town of Staffordshire. It stands on the Tame, 13 m. from Birmingham, on the L.M.S. Rly. The church of S. Editha, late Decorated, has windows by Ford Madox Brown. The castle, a 17th century building, with remains of a much older one, is public property, being used as a museum. The industries include the manufacture of paper, clothing, leather, and beer. Sir Robert Peel, to whom there is a statue, was at one time M.P. In 1913 the thousandth anniversary of the building of a fort here by Ethelfleda was celebrated. Market day, Sat. Pop. 8,032.

There is a town called Tamworth in New South Wales, 281 m. by rly. from Sydney. It is in a pastoral and farming centre which produces gold and diamonds. Pop. 7,560

TANAGER. Large family of finch-like birds, inhabiting tropical America. There are many genera and some four hundred species, and they are remarkable for their gaudy plumage. See illus. below.

TANAGRA. Town of ancient Greece, in Bocotia, near the frontier of Attica. Excavations have yielded terra-cotta figurines, which throw light on ancient Greek costumes.

TANDERAGEE. Urban dist. of co. Armagh, Northern Ireland. It stands on the Casher, 5 m. from Portadown, on the G.N. of I. Rly. The castle is a seat of the duke of Manchester. Lincen is manufactured. Pop. 1,400.

TANDY, JAMES NAPPER (1740-1803). Irish patriot. Son of a small tradesman in Dublin,

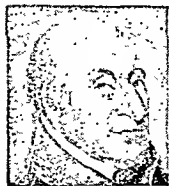


Tanager. The blue species, *Tanagra episcopus*. See above



Tamarisk. Feathery leaves and dense spike of blossoms

he was a founder and first secretary of the United Irishmen, 1791. An ardent sympathiser with the French Revolution, he was forced to take refuge in America, remaining there until 1798, when he joined Wolfe Tone in Paris. Tandy made an abortive landing in Aran, Sept. 16, 1798. Arrested in Hamburg and handed over to the British Government, he was found guilty of treason but was reprieved, and died in France, Aug. 24, 1803.



J. Napper Tandy,
Irish patriot

TANFIELD. Urban dist. of Durham. It is 7 m. from Durham and is a coal mining centre. Bricks and tiles are manufactured. Its station is Shield Row on the L.N.E. Rly. Pop. 10,393.

TANGA. Port of Tanganyika Territory. It lies opposite the island of Pemba, and is the coastal terminus of the Northern Rly. to Moshi and Arusha. There are rly. workshops. Most of the livestock sent to Zanzibar is shipped from Tanga. Pop. about 11,000.

TANGANYIKA. Lake of Central Africa. It lies between Tanganyika Territory and the Belgian Congo, and extends some 450 m. from N. to S. into Northern Rhodesia. Its average breadth is 40 to 50 m., and it is 2,550 ft. above sea level. The waters are over 1,000 ft. deep. The best harbours are on the E. littoral, and include Kigoma, Ujiji, Karema, Kirando, Kasanga (formerly Bismarckburg), and Kitnla. Albertville, the principal harbour on the Belgian side, is the terminus of the rly. to Kabalo.

TANGANYIKA TERRITORY. Area in E. Central Africa administered by Britain under mandate of the League of Nations. With the dist. of Ruanda and Urundi in the N.W., now part of Belgian Congo, and the so-called Kionga Triangle S. of the Rovuma river, now in Mozambique (Portuguese E. Africa), the territory comprised German E. Africa. Dar-es-Salaam, the capital, Tanga, and Bagamoyo are some of the seaports; Kigoma and Ujiji are ports on Lake Tanganyika, and Mwanza and Bukoba ports on Lake Victoria. The area is about 374,000 sq. m. Pop. 5,808 Europeans, 4,742,000 natives.

Tanganyika has a coastline about 470 m. long on the Indian Ocean, and reaches Lake Victoria in the N.W., Lake Tanganyika in the W. and Lake Nyasa in the S.W. It adjoins Mozambique on the S., Belgian Congo on the W., and forms a British connexion between Northern Rhodesia and Nyasaland on the S.W. and Uganda and Kenya on the N. Off the coast lie the islands of Zanzibar and Pemba.

The exports include sisal, cotton, coffee, ground nuts, hides, copra, grain, beeswax, diamonds, and gold. The Northern Rly., 220 m. from Tanga to Moshi, was extended in 1929 to Arusha (54 m.). The Central Rly. runs from Dar-es-Salaam to Kigoma (772 m.).

The territory is under a governor, assisted by an executive council. In 1926 a legislative council was established, of 13 official members and not more than 10 non-official. A department of native affairs was set up in 1926. In 1930 it was suggested that Tanganyika, Kenya, and Uganda should be united to form a dominion of E. Africa. See Africa, map.

TANGIER. Seaport of N.W. Africa. It lies on a small bay in Morocco, 38 m. by sea

S.W. of Gibraltar. With the surrounding district it forms a special zone distinct from the French and Spanish zones. This was made an international area from June 1, 1925, but the agreement was not signed by all the powers concerned until July 25, 1928. The zone is permanently neutralised and demilitarised. The legislative power resides in an international assembly of 27 members, over which a committee of control has certain powers of veto. The administration is in the hands of an administrator and his assistants, who are French, British, Spanish and Italian



Tangier. The market place in this historic port of N.W. Africa

respectively for the first six years. Pop. 60,000, including many Spanish Jews. See Morocco.

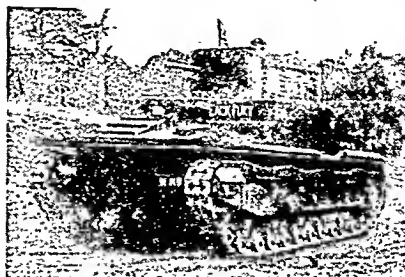
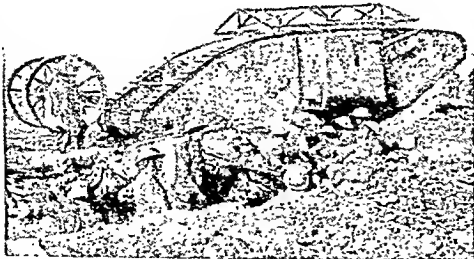
TANGLE SEAWEED OR SEA GIRDLES (*Laminaria digitata*). Large olive seaweed of the order Laminariaceae. Attached to northern maritime rocks below ordinary low tides, it has a solid stem, as much as six feet in length and from an inch to two inches thick. The thick, leathery frond is six or eight feet long and is cut into broad segments. See Algae.

TANGO. Modern dance founded on an old gipsy dance of Moorish origin imported into Argentina from Spain. It was much danced by the American negroes, and was introduced into England in 1912.

TANIS. Ancient city near San, 13 m. from Port Said, Lower Egypt. It is the biblical Zoan (Num. 13), on the Tanitic arm of the Nile. Here in 1884 Flinders Petrie inaugurated modern scientific exploration. It has yielded fine sphinxes, notably of Amenemhat III.

TANIT. Phoenician goddess. A temple at Carthage originally founded in her honour was preserved by the Romans after the fall of

the city, at which time it was consecrated to the goddess Astarte. The Christians transformed it into a church. About A.D. 400 it disappeared, and the site, which was first discovered in 1885, was excavated in 1921-22. See Astarte; Carthage.



Tank. Above, early type, used in the first battle of the Somme, 1916. Below, light tank, the modern type of armoured fighting vehicle

TANJORE. Dist. and town of Madras, India. The dist. is S. of the Cauvery, of which the delta comprises the fertile N.E., the "garden of Southern India." Rice is the chief crop. Its area is 3,727 sq. m. The town, which has a famous pagoda, is an important rly. junction. Pop. 59,913.

TANK. Tractor-propelled armoured car, capable of operating independently of roads and able to traverse open country and natural obstacles. It was devised in 1914-15 as the result of the suggestions of a number of independent inventors. Tanks, which were a British invention, first appeared in action Sept. 15, 1916, on the Somme. Tanks of the heavy type, as used in the Great War, carried two six-pounder guns and one machine gun, or five machine guns and no six-pounders. The Mark V was 26 ft. long, 8 ft. 4 ins. wide, weighed 27 tons, and had engines of 150 h.p. The normal speed was 5 m. an hour, and the armour was proof against ordinary and armour-piercing bullets. The crew consisted of an officer, one driver, and seven others.

The mechanism comprised a petrol engine coupled through a clutch to an epicyclic gear. The drive was taken from the gear box to a countershaft on which were epicyclic gears, whence chains transmitted the drive to the driving sprockets, the teeth of which engaged the endless belt of track links. The tractor helt, on either side of the tank, was capable of independent motion forward or reverse, and this formed a steering gear. The guns were carried in sponsons or casemates



Tangle Seaweed. Long fronds growing upon rocks uncovered by the tide

ROYAL TANK CORPS. British corps formed in March, 1916, from volunteer officer cadets, officers, and men of the Machine Gun Corps. The Tank Corps was reorganized in 1921, and consisted of two service tank battalions for service in Great Britain, two cadre battalions, and 12 armoured car companies. The headquarters are at Wool, in Dorset.

The Corps is equipped with light Tanks Mark I and II, and with two types of armoured cars. Fully equipped, the light tanks weigh 11 to 12 tons. The armament comprises one 3-pdr. 2 cwt. gun, two Vickers machine guns, and one Hotchkiss gun. Another Hotchkiss gun is carried as an anti-aircraft weapon. The crew numbers five. The speed is 9 to 12 miles per hour. A heavier type of tank is being developed with, it is reported, a speed of about 30 miles per hour.

TANNENBERG. Village in the district of Osterode, E. Prussia. Near it the Lithuanians and Poles defeated the Teutonic Knights in 1410.

Tannenberg gives its name to the German victory over the Russians in Aug., 1914. Hindenburg, with 160,000 men, took up his quarters at Marienburg, and began his offensive against the two Russian armies under Rennenkampf and Samsonoff. Attacking the latter, within three days Hindenburg established himself on the rly. and road from Osterode to the frontier. Samsonoff failed to recapture Soldau and was driven back E., and after



Tanks Corps Badge

fighting lasting from Aug. 26 to Aug. 28 was compelled to retreat. Hindenburg next drove in a wedge between the two armies. The Russians had to retreat over a tract of marsh and lake, and Hindenburg's knowledge of the terrain enabled him to inflict terrible punishment on the disorganized Russians. Only about 60,000 men escaped across the frontier into Russia. The Germans took 90,000 prisoners and captured hundreds of guns.

TANNHÄUSER. Hero of a medieval German legendary romance. He visits the Venusberg, and afterwards seeks pardon of the pope, who declares that he will never be forgiven unless the staff he holds breaks into blossom. Tannhäuser returns to the sensual fascinations of the Venusberg, and after his departure the pope's staff blossoms. Wagner used the story in his opera, *Tannhäuser*, 1845.

TANNIN OR **TANNIC ACID.** Astringent substance obtained from galls and known as digallie acid. The name is also applied to a series of plant constituents which possess the properties associated with tannic acid.

The best acid is obtained from nut-galls, produced by the puncture of the gall-fly in the young shoots of a kind of oak tree, or produced by a plant louse on the leaves and leaf stalks of *Rhus semialata*. Galls contain from 60 to 80 p.e. of tannin. Tannic acid is used in medicine as an astringent and for making ink and clarifying wine and beer.

TANNING. Preparation of natural skins and their conversion into leather. It is carried out chiefly by vegetable tanning, chrome tanning, alum tanning, and oil tanning or ebamosing. The first depends upon the use of tannin, the second on chromium compounds, the third on alum, and the last on an oil which produces the well-known ehamois leather. See *Leather*.

TANSY (*Tanacetum vulgare*). Perennial strong-scented herb of the order Compositae, a native of Europe, Siberia, and N.W. America. It has grooved, angular, leafy stems about 3 ft. in height. The large leaves are deeply cut from the edges feather-wise, and are fragrant when touched. The florets are all tubular, and the dull yellow flower-heads are grouped in large flat clusters. It was formerly much used as a domestic tonic and vermifuge, and also as a flavouring.



Tansy. Cluster of yellow flower-heads

TANTALLON CASTLE. Ruined building of Haddingtonshire, Scotland. It stands 3 m. E. of North Berwick, and almost due S. of Bass Rock. Built probably in the 14th century, it was a stronghold of the Douglasses. It was captured and wrecked by the Covenanters in 1639. See *illus.* p. 205.

TANTALUM. One of the metallic elements. Its chemical symbol is Ta, atomic weight, 181.5; atomic number 73. It is a silvery white metal, ductile, extremely hard, and with a high fusing point, 2,250°C. It does not occur native, but chiefly as tantalite, or ferrous tantalate. Combined with carbon tantalum becomes as hard as diamond, and alloyed with steel it increases the hardness and tensile strength of the latter. The metal is also used in the manufacture of the filaments of electric lamps.

TANTALUS. In Greek mythology, son of Zeus and father of Pelops. He was a favourite of the gods, but betrayed the confidence reposed in him by divulging the secrets of Zeus. For this he was condemned to stand in Hades with water all round him and rich fruits above his head; both the water and the fruits receded whenever he tried to reach them.

From *tantalus* is derived the English word *tantalise*. A locked stand for spirit bottles is called a *tantalus*.

TAOISM. One of the great doctrinal systems of China. Its earliest explicit presentation occurs in the *Tao-Teh King*, the Canon of Reason and Virtue. This introspective treatise is traditionally ascribed to the sage Lao-tse. About 150 B.C. the canon became by imperial decree a school classic. Lao-tse taught that the universe is based upon a formative principle, *Tao*—the Way—whence all reality, *Teh*, is derived. Other early writers of a Taoist cast were Lich-tse, Han Fei, and Hwainan-tse. The most brilliant was Chwang-tse, of the 4th century B.C.

The growing activity of Buddhism led the Taoist priesthood of the 2nd century to absorb much of its organization and ritual and to copy its monasteries and temples. To-day Taoism is little more than a medley of primitive superstitions. See *Lao-tse*.

TAPESTRY. Hand-made fabric of ribbed surface, in which a picture or design is woven by weft threads passing alternately before and behind warpstrings, which become completely hidden by the process. Tapestry weaving in its crudest form was practised by many primitive races. In Egypt it was in a high state of excellence about 14 centuries B.C. Beautiful fragments which have been preserved to us show the high standard of Greek weaving nearly 1,000 years later.

In 1619 James I, inspired by the success of Flemish workshops instituted in Paris by Henry IV, procured many weavers from the Netherlands and set them to work at Mortlake under the direction of Sir Francis Crane. In 1662 Louis XIV consolidated the various royal tapestry workshops in Paris and lodged them in the Gobelins, a building belonging to the descendants of a famous family of dyers of that name. The excellence of the work produced caused the word *Gobelin* to become a synonym for tapestry on the Continent. The English 18th century manufactories were mostly offshoots of the Mortlake manufactory, as, for example, at Lambeth. See *Bayeux Tapestry*; *Gobelin*.

TAPEWORM OR **CESTODES.** Parasite largely distributed throughout the animal kingdom, found in the adult stage in vertebrates. The common species (*Taenia solium*), attacking man, is a very long chain of oblong joints produced by budding from the "head," which is at the narrow extremity, attached to its host by suckers and hooks. It is acquired by eating infected pork. The segments, containing ova, are passed in the faeces.

With *Bothriocephalus latus* the intermediate hosts are varieties of fish, and in the case of *Taenia eelunococcus* the cysticercus stage occurs in man, the adult worm being a parasite of the dog, wolf, etc. The symptoms set up by these tapeworms are abdominal pains, nausea, diarrhoea, and restlessness at night. The worm is usually expelled by the administration of extract of male fern. Unless the head is dislodged, it will grow again.

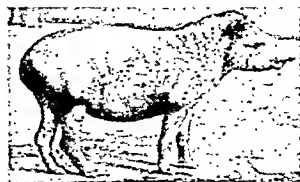
TAPIOCA (*Manihot utilissima*). Perennial herb of the order Euphorbiaceae, a native of S. America. It has a thick, fleshy, spindle-shaped root-stock, from which arise knotted stems bearing alternate leaves. The root is permeated with a bitter, poisonous juice, which is got rid of by grating the flesh and pressing it into cakes, which are subjected to heat. The expressed juice also deposits much



Tapioca. Palm-like leaves and clusters of flowers

starch, which is dried on hot plates and becomes the tapioca of commerce.

TAPIR (*Tapirus*). Genus of odd-toed ungulate mammals. They are natives of S. and C. America, Malaya, Java, Borneo, and Sumatra. The nose and upper lip are united to form a short, movable trunk, and there are four toes on the front and three on the hind feet. The Malayau tapir has a broad band of white around the centre of the body. The tapirs are all vegetarians and among the oldest existing mammals.



Tapir. Brown Brazilian species of the mammal found also in Asia

Gambier Bolton, F.Z.S.

TAPLOW. Village of Buckinghamshire. It stands on the Thames, 4 m. from Slough, on the G.W. Rly. Across the river is Maidenhead, with which it is connected by a stone bridge. It is a popular boating centre. Taplow Court is the seat of Lord Desborough. Pop. 1,502.

TAR. Black oily liquid with characteristic odour obtained by the destructive distillation of coal, wood, and bituminous minerals. Tar varies in composition according to its source, but all kinds consist largely of hydrocarbons and contain suspended carbon, to which the black colour is due. By subjecting tar to distillation various constituents are separated, and are employed as the raw

material for making aniline dyes. Shale tar is an oily liquid which is obtained in the S. of Scotland by the destructive distillation of bituminous shale.

Tar is used as a dust-preventing agent on roads, as a binding agent in the manufacture of briquettes, and as a protection for iron and wood. It is used in medicine in the form of an ointment in the treatment of skin diseases. See *Shale*.



Tara, Ireland Statue of S. Patrick erected on the spot where the Stone of Destiny is said to have stood before its removal to Scotland

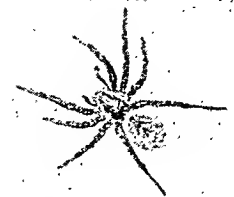
TARA. Village of co. Meath, Irish Free State. It stands on the Boyne, 6 m. from Navan. On the Hill of Tara, 507 ft. high, on which the kings were crowned and to which people were summoned for national assemblies, the kings of Ireland had a palace, and there are other remains of early Irish life and culture.

TARANTO. Seaport of S. Italy. The ancient *Taras* or *Tarentum*, it is 44 m. by rly. W.S.W. of Brindisi, on an island at the head of a deep inlet of the gulf of Taranto. The fortified harbour was an important base in the Great War. There are shipyards, and a commercial harbour; also the 11th century cathedral and the castle and museum.

Founded by Sparta in the 8th century B.C., Tarentum became the wealthiest city of Magna Graecia. It was taken by the Romans, 272 B.C. After passing to the Goths and Byzantines, it was destroyed by the Saracens, A.D. 927, but was afterwards rebuilt by the Normans. Pop. 121,937.

TARANTULA. Name applied loosely to various species of spiders, but belonging properly to one of the wolf-spiders, *Lycosa*

narbonensis, which is common in various parts of South Europe. It takes its popular name from the town of Taranto situated in South Italy. See Spider



Tarantula. The wolf-spider, found in S. Europe
Hugh Main

this event. The town has a castle, once the residence of the rulers of Provence, and a 17th century town hall. On the other side of the Rhône is Beaucaire. Alphonse Daudet satirised the provincial life of the place in several of his stories. Pop. 8,478.

TARBERT. Village of Argyllshire. It stands on the E. side of the Mull of Kintyre, on the neck of land that just prevents the Mull from becoming an island, 30 m. N. of Campbelltown. The chief industry is the herring fishing. Pop. 1,700.

The two sea-lochs known as East and West Loch Tarbert are situated at the N end and on either side of Kintyre peninsula.

TARBOLTON. Village of Ayrshire. It stands on Fail Water, 7 m N.E. of Ayr by the L.M.S. Rly., and is associated with the poet Burns Pop. 4,981.

TARDIEU. **ANDRÉ PIERRE GABRIEL AMÉDÉE** (b. 1876). French statesman. Born at Paris, Sept. 22, 1876, he entered the diplomatic service, becoming attaché at Berlin in 1897. In 1898 he returned to the foreign office in Paris, and from 1899-1902 was secretary to the council of ministers. During the Great War he was employed on diplomatic missions, being high commissioner of France to the U.S.A., 1917-19. A close collaborator with Clemenceau, in 1919 he was one of the French representatives at the peace conference. He was minister of liberated regions, 1919-20, and minister of public works, 1926-28, when he became minister of the interior. In Nov., 1929, he became premier, and he returned to that office after a brief crisis in March, 1930.

TARIFA. Town of Spain, in the prov. of Cadiz. It is on the strait of Gibraltar, 21 m. by rly. S.W. of Gibraltar. Its Moorish walls and an ancient citadel still stand. It has fisheries, and trades in fish, fruit, especially oranges, cattle, and leather. It was unsuccessfully attacked by the French in 1811, when it was defended by Sir Hugh, afterwards Viscount, Gough. Pop. 12,500.

TARIFF REFORM. Any reform of the tariff or duty on goods imported into a country. The term is usually confined to the agitation which began in 1903 against the admission of foreign goods into Great Britain without paying any duty.

The proposals put forward by Joseph Chamberlain included a tariff of duties on imports into Britain, with preference within the Empire, or an imperial customs union. The broad outlines of his proposals were laid down in a speech delivered at Glasgow, Oct. 6, 1903. A duty of 2s. per quarter (480 lb.) was to be imposed on imported foreign, not colonial, corn, with a proportionately higher duty on imported flour. There were also to be low duties (5 p.e.) on imports of other competitive

foodstuffs, such as meat, dairy produce, etc., and duties averaging 10 p.e. on manufactured goods. He proposed to counterbalance the new taxation of all imports on competitive foodstuffs by an equivalent reduction of existing taxation on non-competitive imports such as tea, sugar, etc., and preference to imports from countries within the empire was prominent in the scheme. He founded a propagandist body, the Tariff Reform League, and at the end of 1903 he established the Tariff Commission, to inquire as to the best means of giving effect to his policy.

The result of the general election of 1906 was very unfavourable to the cause of tariff reform, but its advocates continued their campaign until the Great War broke out in 1914. See Safeguarding.

Taro. Variant name for the cocco (Colocasia antiquorum). See Cocco; Paddocs.

TARPEIA. In ancient Roman legend, daughter of Spurius Tarpeius, the governor of the citadel on the Capitoline Hill. Bribe by the besieging Sabines, she betrayed the garrison by opening a gate, but the Sabines as they entered crushed the traitress to death with their shields. The memory of her baseness was perpetuated in the name of the cliff on the Capitoline Hill, the Tarpeian rock from which traitors were hurled to death.

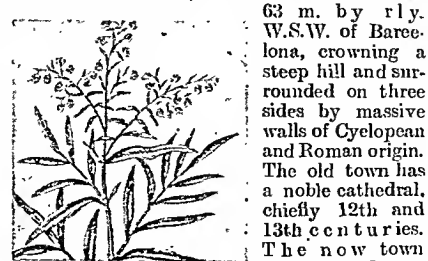
TARPON (Megalops atlanticus). Large fish of the order Telosteii. It is a native of the S Atlantic, whence it enters several of the rivers in pursuit of mullet. It resembles a huge herring in form and colour. From the hinder part of the dorsal fin there is a long streaming thread-like extension: and the silvery scales are four inches across. It affords good sport with rod and line.

TARQUINIUS PRISCUS, **LUCIUS**. Fifth of the legendary kings of ancient Rome, reputed to have reigned 616-578 B.C. An exile from Corinth, he went to Rome, where he won the favour of King Ancus Martius. Elected king when Ancus died, he proved a vigorous ruler. He was murdered by the sons of Ancus Martius.

TARQUINIUS SUPERBUS, **LUCIUS**. Seventh and last of the legendary kings of Rome, reputed to have reigned from 534 to 510 B.C. Though an able and vigorous monarch, he incurred odium by his oppressive tyranny. The violation of Lucretia by his son Sextus Tarquinius caused a revolt, and Tarquin, with all his family, was banished from Rome, being finally defeated at Lake Regillus 496.

TARRAGON (*Artemisia dracunculoides*). Perennial herb of the order Compositae, native of S. Europe. Its stems are about two feet high, with narrow oblong leaves and roundish, pale green flower-heads. The aromatic leaves are without the bitterness characteristic of most species of *Artemisia*, and are used to flavour salads, pickles, and Tarragon vinegar.

TARRAGONA. Seaport city of Spain. The ancient Tarraco, it is on the Mediterranean



Tarragon. Leaves and flowers of the bitter herb

harbour. Wine, olive oil, and nuts are exported. Pop. 32,027.

TARRING, **WEST**. Village of Sussex, part of the borough of Worthing. It is noted for its fig garden. An old building is the reputed palace of Thomas Becket. East Tarring is a village 2 m. from Newhaven.

TARRYTOWN. Village of New York, U.S.A. It stands on a bay in Hudson river, 25 m. N. of New York city. It is the Sleepy Hollow of Washington Irving, whose grave is in Sleepy Hollow cemetery. Near is Sunnyside, the birthplace of Irving. Features of Tarrytown are the old Dutch church and Philipse manor house. Pop. 5,800.

TARSHISH. Biblical name of an unidentified Phoenician mart. It is presumably the classical Tartessus, a shipping port for metals in S.W. Spain, near the Guadalquivir mouth, which was then farther inland. The Red Sea Tarshish ships (1 Kings 22) were merchantmen like those in the Tarshish trade.

TARSIER (*Tarsius spectrum*). Small lemuroid primate. It is a native of Borneo, Sumatra, and other islands of the Malay Archipelago. Smaller than the European squirrel, and of similar arboreal habits, it is remarkable for its large eyes and the great length of the ankle. The tarsier is nocturnal in habit, hunting for the insects which are its chief food, and

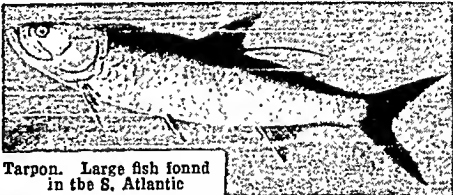
sleeping by day in a tree-hole. See illus. below.

TARSUS. Ancient city of Cilicia, Asia Minor. The modern Tersous, it is about 12 m. from its port at the mouth of the Cydnus. Originally a Syrian city, it became a centre of Greek culture. Previous to its incorporation in the Roman empire as capital of the prov. of Cilicia, 66 B.C., it had been subject to Persian rule. It was the birthplace of S. Paul (q.v.).

TARTAN. Woollen cloth with coloured check pattern. The name is specially applied to the kilt and plaid of the national dress of the Highlanders of Scotland, the variations in the markings denoting the different clans. The distinctive patterns of clan tartans are believed to have been settled before or during the 17th century. The wearing of the Highland dress was forbidden after the rebellion of 1745, but the prohibiting Acts were repealed in 1782, and clan tartans are still recognized as national dress at the British court, and still used by the Highland regiments. Cloth makers have evolved many new combinations of colours and checks. The black and white checkered plaid is called shepherd's tartan. See Clan; Highlands, The

TARTAR. Name employed in China and medieval Europe for central Asian mounted nomads. Under Jenghiz Khan and his successors they established the empire of Tartary and, from 1238 to 1462, dominated E. Europe. In the form Tatar the name survives in Russian use to denote several moslemised groups of Turkic speech.

In European Russia there are about 2,000,000. They comprise the Kazan Tartars of the Volga banks, representing the Kipchak irruption; the Astrakhan Tartars of the Volga



Tarpon. Large fish found in the S. Atlantic



Tarsier. Small climbing primate remarkable for its large eyes
Le Gros Clark, Sarawak



André Tardieu, French statesman
Henri Manuel

mouth, remnants of the Golden Horde with Khazar admixture; and the Krim and Nogai Tartars—the former on the mountains and coasts, the latter on the steppes. There are

also a number in Bulgaria and the Ploek district of Poland. In the Caucasus are about 1,500,000. In Siberia and Central Asia they number some 300,000.

The Tartar Republic is an autonomous republic of the Union of Socialist Soviet Republics, situated between the Chuvash and Bashkir autonomous republics. It was formed in 1920. Kazan is the capital. The area is about 25,000 sq. m. Pop. 2,589,645.

Tartar. Calcareous incrustation which forms round the base of the teeth if cleanliness is neglected.

TARTAR EMETIC. Common name for potassium antimony tartrate, so called because in small

Tartar. Azerbaijan
Tartar from Nij

doses it causes vomiting. It is the only readily soluble salt of antimony. Tartar emetic is used in small doses in medicine, but in larger quantities is a violent poison. It is also employed as a mordant in dyeing.

Tartaric acid, $C_4H_4O_6$, is prepared from argol or crude cream of tartar. See Argol.

TARTARUS. In Greek mythology, the prison or place of punishment in Hades (q.v.). It was surrounded by a brazen wall, and veiled in perpetual and impenetrable darkness.

TARTARY. Name formerly used vaguely for the country between the Pacific Ocean and the Dnieper. Little Tartary, or Krim Tartary, became the name for part of Russia, and Great Tartary for Turkistan and the surrounding district. The gulf of Tartary is between the island of Sakhalin and the mainland.

TARTU. Town of Estonia. The Russian name is Yuriev and the German Dorpat. It is about 120 m. S.E. of the capital, Tallinn (Reval), and has a university, founded by Gustavus Adolphus in 1632. Pop. 65,000.

TASHKENT or TASHKEND. Town of Soviet Central Asia in Uzbekistan. It consists of an old Asiatic and a new European quarter, and lies in the valley of the Chirchik, surrounded by orchards and gardens. It is on the rly. S.E. from Orenburg with connexions to Samarqand and Andijan, and also on the line from Omsk through Semipalatinsk. A university was founded in 1919. Pop. 323,613.

TASMAN, ABEL JANSZON (c. 1602–59). Dutch explorer. Born near Groningen, he made several voyages in eastern waters. Circumnavigating Australia, he discovered, Nov. 24, 1642, land which he called Van Diemen's Land, but which was renamed Tasmania in 1853. He also discovered New Zealand, the Friendly, and the Fiji Islands. He made another voyage in 1644, when he discovered the gulf of Carpentaria, and commanded other expeditions in 1647 and 1648.

Tasman Bay, or Blind Bay, is a wide opening on the N. coast of S. Island, New Zealand, at the W. end of Cook Strait. The Tasman Sea is that portion of the S. Pacific Ocean

occupying the 1,000 m. stretch between New Zealand and S.E. Australia.

TASMANIA. Island S. of Australia, a constituent state of the Commonwealth of Australia. It was formerly connected with Victoria on the mainland by a land bridge across Bass Strait, now represented by the islands of the Furneaux and Kent groups. The area is 26,215 sq. m. Hobart is the capital. The university of Tasmania, founded in 1890, is at Hobart. Pop. 212,043.

The surface is largely mountainous. Rivers include the Derwent and Tamar. Forests of eucalyptus, acacia, and pine cover extensive areas; temperate fruits grow well, and Tasmanian apples are of high quality. Oats, peas, hay, and potatoes are grown, and sheep and cattle are reared.

Tasmania became British in 1803 as a settlement of New South Wales, and was made independent in 1825; responsible government was achieved in 1856, and in 1901 the island joined the Commonwealth of Australia. The local parliament comprises a legislative council of 18 members and an elected house of assembly of 30 members. The governor is assisted by a cabinet. See Australia; Hobart.

TASMANIAN DEVIL. (*Sarcophilus ursinus*). Name given by the original British settlers at Hobart to a marsupial mammal in consequence of its persistent raids on their poultry, etc. In size, short limbs, short muzzle, and bear-like feet it is not unlike the badger. It is a nocturnal, carnivorous animal of great strength, clad in thick, close fur of a black or blackish-brown hue, with white patches on the neck, shoulders, chest, and hinder parts. Its length is about 23 ins., to which the tail adds another 12 ins.

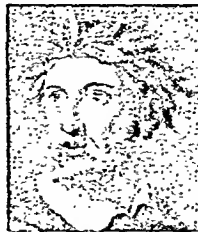
Tasmanian Wolf. Name given to the thylacine, a wolf-like carnivorous marsupial of Tasmania. See Thylacine.

TASSO, TORQUATO (1544–95). Italian poet. Born at Sorrento, March 11, 1544, the son of a nobleman, he went in 1557 to Urbino. There in 1562 Torquato completed his first narrative poem, *Rinaldo*, which established his reputation. Given a post in the retinue of Cardinal Luigi d'Este at Ferrara, in 1565, he soon became the central figure at that court. In 1573 his pastoral drama, *Aminta*, appeared, and in 1574 he completed the *Gerusalemme Liberata*, a great epic which tells the story of the First Crusade and the capture of Jerusalem. While a prisoner, Tasso escaped in 1577 from Ferrara and wandered from place to place. When he returned he was imprisoned for seven years. While in confinement others edited his *Gerusalemme* and also his sonnets and odes. In 1586 he was released, and began once again his life of wandering between Rome, Naples, and Florence. He settled in Rome in 1594, but died April 25, 1595.

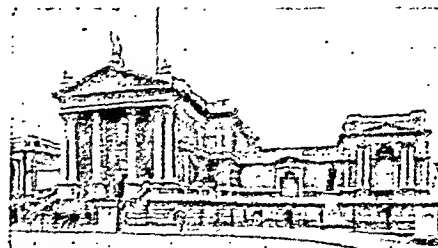
TASTE. One of the five senses. The organs of taste are the tongue and soft palate. The mucous membrane of the tongue is



Tasmania. Billy Lannee, the last man of the aboriginal inhabitants, with his wife and daughter



Torquato Tasso, Italian poet
After a print by Raphael Morghen



Tate Gallery, London. Main entrance of the National Gallery of British Art. See below

scattered over with papillae of various forms and taste-buds which contain gustatory cells in close association with nerve fibres. The nerve of taste is the glosso-pharyngeal nerve. Tastes are classified into sweet, bitter, acid or sour, and salt. See Tongue.

TATE, SIR HENRY (1819–99). British merchant and art patron. Born at Chorley, Lancs, March 4, 1819, he founded the firm of Henry Tate and Sons, sugar refiners. A generous benefactor to hospitals, public libraries, and to University College, Liverpool, he was also a judicious collector of modern pictures, which later he presented to the nation. In 1893 he was made a baronet, and he died Dec. 5, 1899.

TATE GALLERY. Popular name for the National Gallery of British Art at Millbank, London. Opened Aug. 16, 1897, it was the gift, together with 65 pictures by modern



Tasmanian Devil. Fierce marsupial which resembles a badger

British artists, of Sir Henry Tate, and its principal contents are the pictures and sculptures purchased under the Chantry bequest, the Watts gift, part of the Vernon Collection, the Turner pictures and drawings, housed in the Turner wing, completed 1910, and drawings by Alfred Stevens. See illus. above.

TATTERSALL'S. Racehorse auction mart and subscription rooms in London. It was established near Hyde Park Corner in 1766 by Richard Tattersall (1724–95), who had been stud-groom to the second duke of Kingston. The establishment was removed to new premises in Knightsbridge, S.W., in 1865. Two subscription rooms were reserved for members of the Jockey Club, and formed the meeting place of the principal bookmakers and backers. See Betting.

TATTERSHALL. Village of Lincolnshire, 7 m. from Horncastle. The castle, built by Ralph, Lord Cromwell, in the 15th century, was restored by the Marquess Curzon, who bequeathed it to the nation. It is regarded as one of the finest existing examples of a fortified dwelling in England. The church contains tombs of the Cromwell family. Pop. 424.

TATTOO. Signal by bugles and drums used in the British army to bring soldiers to their quarters at night. It varies in different branches of the service. That for the infantry consists of "The First Post" by the bugles, followed by the "Rolls" for the big drum and side drums. After the players have marched up and down the barrack yard to a succession of quick marches, "God Save the King" and "The Last Post" conclude the tattoo. At military tournaments tattoo is used for an evening parade.

TATTOOING (Tahitian tatau, markings). Practice of producing durable designs under the human skin with the aid of pigments.

It is effected by puncturing or cutting the skin and introducing charcoal powder or other colouring matters and ingredients. Burmese work is uniformly blue-black, except love-spells and devices to ensure immunity from wounds and disease, which are usually vermilion. Japanese tattooing, always more artistic, and formerly prevalent among the lower classes as a substitute for clothing, is now illegal. Tattooing, as adopted by European seamen, comprises Oriental designs such as dragons, in addition to ships, anchors, and amatory tokens. Electric needles and a wide range of colours are employed in the process.

TAUCHNITZ, KARL CHRISTOPH TRAUGOTT (1761-1836). German publisher. Born near Grünma, Oct. 29, 1761, he began printing books in 1796 at Leipzig. His editions of Greek and Latin classics were widely famed for cheapness and accuracy. His nephew, Christian Bernhard, born at Schleinitz, Aug. 25, 1816, founded the Tauchnitz publishing house in 1837, from which more than 4,000 vols. by British authors have been issued. He also published French and German works. He died at Leipzig, Aug. 13, 1895.

TAUNTON. Borough, co. town, and market town of Somerset. It stands on the Tone, 45 m. from Bristol, on the G.W. Rly., in the fertile valley of Taunton Dene. The church of S. Mary Magdalene is a large and beautiful Perpendicular building with a tower 155 ft. high. The castle, dating from the 12th century, is a museum. Cider, gloves, and agricultural machinery are made, and the town is an agricultural centre. Market days, Wed and Sat. Pop. 24,110.

TAUNUS. Mt. range of Germany, in Hesse Nassau. It stretches N.E. for 45 m. from the right bank of the Rhine between Mainz and Bingen, and culminates in the N.E. at 2,587 ft. in the Great Feldberg. It contains, among others, the mineral springs of Wiesbaden, Homburg, and Nauheim.

TAUT or **TOGARIS** (Egypt. the mighty one). Egyptian deity. Represented as a hippopotamus in calf, sometimes crowned with disk, horns, and plumes, she was a primitive animal-goddess, afterwards included in the theogony as consort of Set and, in the Theban form Apet or Opet, as the mother of Osiris. As nurse she presided at childbirth.

TAURUS or **THE BULL**. In astronomy, one of the signs of the Zodiac. Originally the first sign of the Zodiac, it is now the second, the sun entering the constellation about April 22. The Pleiades mark the shoulder of Taurus, the Hyades its head. The chief star is Aldebaran or Alpha Tauri. The constellation contains a number of variable stars, and the well-known Crab nebula. See Constellation.

TAURUS. Mountains of Asia Minor. Consisting chiefly of two ranges, named by the Turks the Bulghar Dag and Ala Dag, they run almost parallel to the coast of S.E. Asia Minor. The famous pass known as the Cilician Gates leads into the valley of Adana. The Anti-Taurus is an extension N. from the E. end of the Taurus. In it is Mt. Argæus, the highest point in Asia Minor.

TAVETA. Settlement of Kenya Colony. It is 75 m. from Voi on the Uganda Rly., and 28 m. by rly. from Moshi, near the N.E. slopes of Mt. Kilima-Njaro, 2,350 ft. above sea level. The dist. was the scene of numerous encounters during the Great War. A branch of the Uganda Rly. has been built from Voi, through Taveta, to the Usambara Rly.

TAVISTOCK. Market town and urban dist. of Devonshire. It stands on the Tavy, 15 m. from Plymouth, on the G.W. and Southern Rlys. A canal leads to the Tamar. Notable buildings include the Gothic parish church and the guildhall. There are remains

of a monastery founded in the 10th century. Formerly a stannary town, Tavistock was the centre of an important mining district. It is now chiefly an agricultural centre. Market day, Friday. Pop. 4,392.

The duke of Bedford has a seat, Endsleigh, near the town, and his eldest son is called the marquess of Tavistock.

TAVY. River of Devonshire. It rises on Dartmoor and after a course of 20 m. falls into the Tamar. Tavistock is on its banks, and it also passes Buckland Abbey.

TAW. River of Devonshire. Rising on Okement Hill, Dartmoor, it flows N.E. to Lapford, and then N.W. to Barnstaple, at the head of its estuary. Its length is 50 m.

Tawe. River of Wales. Rising in Brecknockshire, it flows 36 m. S.W. through Glamorganshire to Swansea Bay, at Swansea.

TAXATION. System of monetary payments demanded by a government. They have two essential characteristics: (1) they are compulsory; (2) their payment does not establish any guarantee for definite or measured services in return.

This view of the nature of taxation is relatively modern. It was first given exactly by Sidgwick in 1883, and is now generally held by economists. The prevailing earlier view, which it displaced, was that taxes were in fact prices—a tax was a price paid for benefits received from the state. This sprang from the idea of an implicit contract between the state and the citizens. It gave rise, in turn, to the idea that citizens should pay taxes in proportion to the benefits they received, and it was not noticed at first that by this rule the weak, who receive most state protection, would pay most of the taxes.



Tay Bridge. Railway viaduct, 2 miles and 73 yards in length, across the Firth at Dundee. It was opened in 1857

Taxation is usually divided into direct, such as income tax, and indirect, such as customs and excise duties. The arguments in favour of direct as against indirect taxation are: (1) the taxpayer feels the payment and therefore is interested in the money being well spent; (2) the cost of collection is much less than in the case of indirect taxation; (3) it is fairer in its incidence, because indirect taxation falls more heavily upon the poor than upon the rich.

In the United Kingdom, and to some extent in other countries, the policy of relieving indirect at the expense of direct taxation has been steadily pursued since about 1860.

TAXIDERMY (Gr. taxis, arrangement; derma, skin). Art of skinning, preserving, stuffing, and mounting animals. The skin is treated with arsenical preparations to preserve it, and the fat, etc. is removed. Mounting is an elaborate process, which requires a thorough knowledge of the anatomy of the animal as well as of its natural habits and surroundings. In the main, small birds and mammals are supported by suitable wiring, but for larger birds and mammals the only really satisfactory way is to take an accurate model of the animal in plaster materials and to cover it with the skin, the tongue, lips, etc., being simulated in the material.

TAXIMETER. Device used on taxicabs to indicate payments due by the hirer. The inventor of the modern taximeter was A. Grüner, of Magdeburg, in 1895. The basic

principle of the instrument lies in the fact that, for any complete revolution of a wheel of a vehicle, a certain distance is travelled by the vehicle. Hence, if the revolutions of the wheel be counted during a certain period, the distance travelled in that period may be calculated. To provide for different tariffs the parts are linked together in such a way that, by turning keys on the outside of the instrument case, the gears can be thrown in or out as required. The fare is shown for the ordinary or distance hire, plus any "extras," while by turning a key an alternative clock-operated time hire tariff is brought into work.

TAXODIUM. Summer-leaving tree of the order Coniferae. It is noted for the richness of the tints of its autumnal foliage. A native of the U.S.A., whence it was introduced into Britain in 1640, it thrives in a moist, loamy soil, preferably by the edges of lakes or rivers, and is propagated in the ordinary way by seeds or cuttings, or by layering in the autumn. *T. distichum* is known as the swamp cypress.

TAY. River of Scotland. It drains the greater part of Perthshire and portions of Angus (Forfarshire), Argyllshire, and Inverness-shire, and has a length of 118 m., including its chief headstream and the Firth of Tay. Rising as the Fillan on Ben Lui, on the W. border of Perthshire, it flows to Loch Dochart, and then on to Loch Tay. On issuing from this loch it assumes its own name, and flows past Aberfeldy, Dunkeld, and Perth to the firth. The area of its basin is 2,400 sq. m. Its salmon fisheries are important.

The Tay Bridge, over the Firth of Tay, was built 1882-87, is just over 2 m. long, and carries two lines of rly. For part of its length the railway tracks are carried on top

of the girders, but across the 13 main central spans the tracks are laid between the main girders so as to allow a clear height of 79 ft. for the passage of ships below. It was constructed within 60 ft. of the site of the original bridge, which was opened in 1878 and blown down in a gale the following year.

TAYLOR, BAYARD (1825-78). American writer. Born in Chester co., Pa., Jan. 11, 1825, he was apprenticed to a printer, and in 1844 he published *Nimena*, his first volume of poems. Disliking his trade, he got commissions for travel articles from various editors, and went on a pedestrian tour of Europe, which he described in *Views Afloat*, or *Europe Seen with Knapsack and Staff* (1846). In 1847 he joined the staff of the *New York Tribune*, for which he travelled widely. Subsequently he spent many years in Germany, the fruit of which was his translation of Faust, 1871. He died Dec. 17, 1878.



Bayard Taylor, American writer

TAYLOR, JEREMY (1613-67). English divine and scholar. A barber's son, born at Cambridge, he became a fellow of All Souls College, Oxford, in 1636. Chaplain to Laud and Charles I, he was made rector of Uppingham in 1638; and of Overstone, Northamptonshire in 1643. Deprived of his living by the

Parliamentarians, he was for a time a school-master in Wales, and chaplain to the earl of Carbery at Golden Grove, Carmarthenshire, where his chief works were written. In 1661 Charles II appointed him bishop of Down and Connor. He died at Lisburn, Aug. 13, 1667.

Taylor's 36 separate works include *Episcopacy Asserted*, 1642; *The Liberty of Prophecy*, 1646; *The Great Exemplar (Life of Christ)*, 1649; *The Rule and Exercises of Holy Living*, 1650; *The Rule and Exercises of Holy Dying*, 1651, both of which have been reissued in numerous editions.

TAYLOR, JOHN (1580-1653). English writer, known as the water poet. Born at Gloucester, Aug. 24, 1580,



John Taylor,
English writer
Bodleian Library

and apprenticed to a Thames waterman, he served in the navy, after which he returned to the Thames as a waterman. Having travelled, he settled down in 1645 as an innkeeper in Long Acre, London. His ruggedly racy writings, *A Penniless Pilgrimage*, *Travels in Germany*, and

others, upwards of 150 in number, were reprinted by the Spenser Society, 1869-78.

TAYLOR, TOM (1817-80). British dramatist. He was born at Sunderland, Oct. 19, 1817, and was educated at Cambridge. From 1844-46 he was professor of English Literature at London University, and from 1850 to 1872 he was secretary of the board of health. He became connected with Punch, and in 1874 accepted the editorship. His dramatic career, on which his fame chiefly rests, had begun in 1844, when four of his burlesques were produced. He wrote, adapted, or collaborated in about 100 plays, some of which still hold the stage. His best known pieces are *Masks and Faces*, 1852, with Charles Reade; *Still Waters Run Deep*, 1855; and *The Ticket-of-Leave Man*, 1863. Taylor died July 12, 1880.



Tom Taylor,
British dramatist

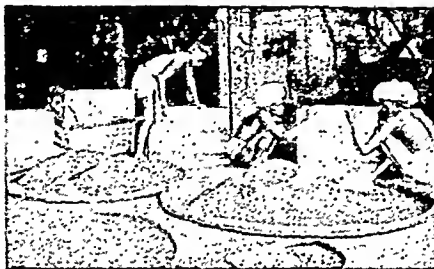
TAYPORT OR FERRYPORT-ON-CRAIG. Burgh of Fifeshire. On the S. side of the Firth of Tay, it stands on the L.N.E. Rly., $\frac{3}{4}$ m. S.E. of Dundee and opposite Broughty Ferry. There is a ferry service across the estuary, and linen and jute factories and engine works. Pop. 3,273.

TCHITCHERIN, GEORGI VASILIEVITCH (b. 1879). Russian revolutionary. Of noble descent, he became a socialist, and on the outbreak of the Great War was living in England. Appointed Bolshevik envoy in London, he was interned owing to his propaganda, but, released in Dec., 1917, was deported to Russia, and given the post of assistant commissioner for foreign affairs, later becoming people's commissioner, or foreign commissar. He held that position until November, 1929. See Bolshevism.

TEA. Term applied specifically to the leaves of the tea plant and to the beverage infused from them, and generally to similar decoctions used either medicinally or as beverages. The Chinese name is *cha*. The tea plant is an evergreen tree of the genus *Thea* and order *Ternstroemiaceae*. The leaf is strongly veined, the flower usually white, often stalkless, and delicately fragrant, and the fruit has three spherical seeds.

For tea-planting a hot, moist climate. light friable soil, and good drainage are desirable. The plants come to maturity in three years. Tea is made only from the immature shoots, which are nipped off with the band. In the factory the pluckings are exposed to the sun or hot air until soft and flaccid. After rolling, the leaves are allowed to ferment in a cool, moist room. They are quickly re-rolled and at once fired to extract moisture and prevent further fermentation, then sifted into grades, again fired, and finally packed. In China, tea is grown chiefly by peasant proprietors on small plots, and is made entirely by hand. Green tea is unfermented, and possesses more stimulating properties than black.

In China the provinces



Tea. Packing dried and prepared leaves into large wood chests ready for export. Above, twig of leaves and flowers of the tea plant

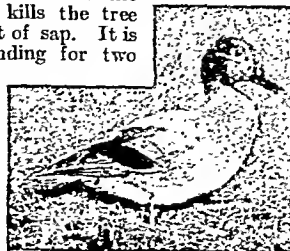
watered by the Yang-tse are the principal source of the Moning or black-leaf Congous and of fine green teas. Farther S., in Fu-kien province, grow the Kaisow or red-leaf Congous. The finest Fu-kien teas are grown on the Wu-i hills. From a dialect form of Wu-i comes the name Bohea, early used in England for fine tea generally, and later as a trade term for a low-quality tea. Formosa produces chiefly Formosa Oolong, a species of green tea with a yellowish leaf. Japan makes mostly green, and exports it direct to the U.S.A. Among the principal tea districts of India are Assam, Darjeeling, Cachar, Travancore, and Dooars.



Teak. Foliage and fruit of the Malayan tree

of 100-150 ft., and has opposite, oval leaves. It is cultivated in India, Burma, and Java for its timber, which is exceedingly valuable in shipbuilding. Before felling, a ring of bark is cut from the base of the trunk, which kills the tree and denudes it of sap. It is then left standing for two years. The tree known as African teak belongs to the spurgefamily. The wood is hard and heavy.

TEAL (*Querquedula erythraea*). Small species of



Teal. Drake of the small European species of wild duck
W. S. Berridge, F.Z.S.

duck, a native of Europe (including Britain) and Asia. The drake is marked by a jagged white line with black below it along the wing, a buff triangular patch below the tail, and the red-brown head with a buff-edged, curved green band on each side. The duck has a more uniform dress of buff dappled with brown. It is a bird of inland lakes and pools, though in winter large numbers may be seen at the mouths of rivers.

TEA ROSE. Name given to a class of perpetual or autumnal roses. Mostly hybrids of *Rosa indica*, they include many of the most popular varieties, e.g. *Maréchal Niel*. The name is derived from the scent. See Rose.

TEAR SHELL. Popular name for a lachrymatory shell. These shells were first introduced by the Germans in the Great War, the Allies adopting them later. See Gas.

TEASEL OR TEAZEL (*Dipsacus sylvestris*). Tall biennial herb of the order *Dipsacaceae*, a native of Europe, W. Asia, and the Canaries. In the first year it forms a large spreading rosette of oblong, lance-shaped leaves with prickly midribs. The small, tubular, purplish flowers, separated by stiff, hooked bracts, are gathered into an oblong head. In the cultivated form known as the fuller's teasel (*D. fullonum*) the bracts are used for raising the nap on cloth, or teasing it, whence the name.

TEA TREE (*Leptospermum lanigerum*). Small tree of the order *Myrtaceae*, native of Australasia. It has alternate, oblong, leathery and downy leaves, and its flowers are white with a woolly calyx. The leaves were used by early English settlers as a substitute for tea. In other parts of the world various plants bear this popular name; in England it is applied to *Lycium chinense*.



Teasel. Stiff bracts around dead flowers

TECK. Castle of Württemberg, Germany. It stood near Kirchheim, and was destroyed in 1575. In 1863 Alexander (1804-85), a member of the royal family of Württemberg, having made a morganatic marriage, was created prince of Teck. Alexander's son, Francis (1837-1900), made duke of Teck in 1871, had married, in 1866, Mary Adelaide, daughter of the duke of Cambridge. They made their home at White Lodge, Richmond. Their sons were Adolphus (1868-1927), Francis (1870-1910), and Alexander (b. 1874).

The daughter, Mary, became the wife of George V. In 1917 the family changed its name to Cambridge. Adolphus, who had succeeded his father as duke, Jan. 20, 1900, was made marquess of Cambridge, and Alexander, earl of Athlone. See Mary, Queen.

TEDDINGTON. Urban dist. of Middlesex. It is $1\frac{3}{4}$ m. from Waterloo on the Southern Rly., and $1\frac{1}{2}$ m. from London Bridge by the Thames, which is tidal as far as Teddington Lock. The National Physiological Laboratory for physical research was established here in 1901. Pop. 21,216.

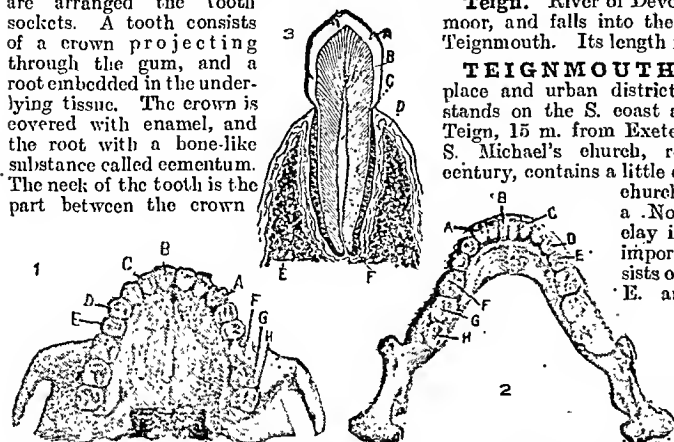
TE DEUM LAUDAMUS. Latin canticle or hymn, so called from the opening words translated in the English Book of Common Prayer, "We praise Thee, O God." The rubric directs that it shall be said or sung in English daily throughout the year.



Duchess of Teck,
mother of Queen
Mary

TEES. River of England. It rises in Crossfell, Cumberland, and forms, first, the boundary between Durham and Westmorland, and then that between Durham and Yorkshire. Teesdale, the valley of the upper Tees, contains the waterfall High Force, and other beauty spots. Near its mouth the river flows through an industrial area, passing by Darlington, Stockton, and Middlesbrough, where the estuary begins. Its length is about 80 m.

TEETH. Bone-like structures in the mouth. The part of the jaw that carries the teeth is called the alveolus, and along this are arranged the tooth sockets. A tooth consists of a crown projecting through the gum, and a root embedded in the underlying tissue. The crown is covered with enamel, and the root with a bone-like substance called cementum. The neck of the tooth is the part between the crown



Teeth. 1, in upper and 2, lower jaw: A, canine; B, central incisor; C, lateral incisor; D and E, 1st and 2nd premolars; F, G, H, 1st, 2nd, and 3rd molars. 3, Section of tooth: A, enamel; B, dentine; C, pulp; D, gum; E, bone; F, cement

and the root where the gum surrounds it. The enamel is the hardest tissue in the body. It is white or bluish-white and slightly translucent, having a polished appearance on the surface. It consists almost entirely of inorganic salts of calcium and magnesium. Underneath the enamel is dentine, which as a rule forms its greater part. This is a hard, yellowish bone-like substance, and in one form, ivory, is well known. It consists in a considerable degree of organic matter.

The teeth of mammals are adapted to, and vary considerably according to, the uses to which they are put. In higher mammals, as a rule, there are two sets of teeth—the milk dentition subserving the needs of the animal during its growth, and the permanent dentition from maturity onwards. The teeth are also differentiated according to their position in the mouth. In man there are 8 incisor, or cutting teeth; 4 canine, or tearing teeth; 8 bicuspid; and 12 molar, or grinding teeth.

Artificial teeth are usually made of a special pottery ware known as mineral teeth. A single tooth is fitted to the root of an old one by a gold pin, or for one or more teeth a plate is provided, to which they are fastened. The plate is made of gold, silver, or platinum plate, vulcanite, celluloid, etc., and is shaped from a mould of the gums. See Toothache.

TEGNÉR, ESALAS (1782-1846). Swedish poet and bishop. Born Nov. 13, 1782, he graduated in 1802 at Lund, where he was appointed lecturer, and in 1812 was professor of Greek at Stockholm. In 1824 he was made bishop of Växjö, where he remained until his death, Nov. 2, 1846. Tegnér began to write poetry at an early age. In 1808 his War-song of the Troops of Scania was enthusiastically greeted, as was Svea, a patriotic poem. His masterpiece, Frithiof's Saga, 1825, has been translated into many languages. Consult Works, ed. C. W. Böttiger, 1847-51. Pron. Tegnare.

TEHRAN or TEHERAN. Capital of Persia. It stands in the midst of a fertile plain, about 70 m. S. of the Caspian. There is a short rly. to Shah Abdul-azim. With an area of 7½ m.,

it is girt about with bastioned walls, pierced by 12 gates, and contains numerous mosques and the Ark or citadel, within which is the royal palace. It has a carpet-making industry. Tehran replaced Ispahan as the capital of Persia about the end of the 18th century, and is the residence of the shah and seat of the government. Pop. 210,000. See Persia.

TEIFI. River of S. Wales. It rises near the border of Radnorshire and flows into Cardigan Bay after a course of about 50 m. For most of its course below Lampeter it forms the S. boundary of Cardiganshire.

TEIGN. River of Devon. It rises on Dartmoor, and falls into the English Channel at Teignmouth. Its length is 30 m.

TEIGNMOUTH. Seaport, watering place and urban district of Devonshire. It stands on the S. coast at the mouth of the Teign, 15 m. from Exeter, on the G.W. Rly. S. Michael's church, rebuilt in the 19th century, contains a little of the earlier Norman church. S. James's retains a Norman tower. China clay is exported and coal imported. The town consists of two parts, known as E. and W. Teignmouth. Pop. 10,976. Pron. Tinnuth.

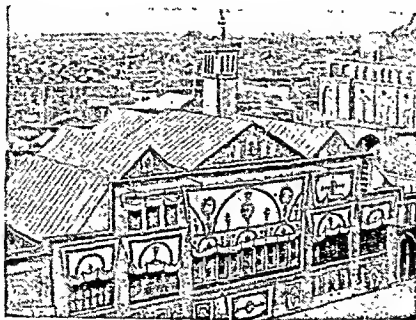
TELAMON. In Greek legend, brother of Peleus and father of Ajax. He took part in the hunt for the Calydonian boar and the expedition

of the Argonauts. See Argonauts

TELEGENOSUS. In Greek mythology, son of Odysseus by the enchantress Circe. When he grew up to manhood, his mother sent him out in search of his father, and, shipwrecked on the coast of Ithaca, he began to ravage the country. Odysseus and his son Telemachus went to meet the stranger, who, ignorant of his identity, killed his father.

TELEGRAPH (Gr. télc, afar; graphein, to write). Device for conveying intelligence between distant points. The first serviceable telegraphic device, invented in 1792 by the French engineer, Claude Chappe, was a kind of semaphore. In a modified form the Chappe telegraph survives to-day in the ship semaphore and in railway signals.

The first practical electric telegraph was produced in 1837, when Cooke and Wheatstone, in England, brought out the needle telegraph, and Morse, in America, produced his electro-magnetic telegraph. The needle telegraph is based on the fact that a current of electricity flowing in a wire causes a magnetic needle placed near it to turn to the right or left, according to the direction in which the current flows. The Morse code (see p. 982) is used, the dots and dashes being represented



Tehran, Persia. Parliament House, formerly the Baharistan Palace, built in 1879

by movements of the top of the needle to the left and right respectively.

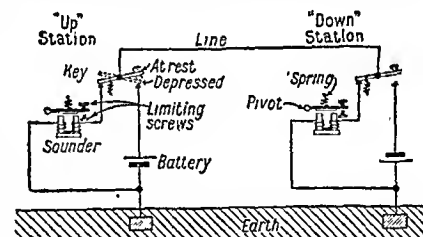
The Morse telegraph consists of a U-shaped electro-magnet. When a current flows through the winding, an armature carried on a pivoted lever is attracted and the lever is drawn down. When the current stops, a spring pulls the lever back. Long and short currents, corresponding to the dashes and dots of the Morse code, are sent by means of the Morse key. The arrangement of a typical telegraph circuit is shown in the illustration below.

With high speed apparatus the transmitter is actuated by means of a paper tape perforated with groups of holes corresponding to different letters of the alphabet. At the receiving end the messages are recorded automatically, either (a) as dots and dashes on a tape; (b) as a perforated ribbon which is afterwards used to work an automatic typewriter; or (c) directly as printed letters.

Duplex telegraphy consists in transmitting a message simultaneously in each direction; in quadruplex, two messages are sent simultaneously in each direction. Systems in which numbers of messages are transmitted simultaneously are known as multiplex.

In submarine telegraphy a specially delicate instrument invented by Lord Kelvin, and known as the siphon recorder, is employed. With this the message is recorded as a wavy line on a paper tape, up and down waves corresponding respectively to the Morse dots and dashes. In recent years the thermionic valve relay has been applied to submarine cable working, with excellent results. See Cable; Electricity; Morse, S.; Phototelegraphy; Post Office; Signalling; Thermionic Valve; Wireless.

TEL-EL-KEBIR, BATTLE OF. Victory by a British force under Sir Garnet Wolseley over Egyptian rebels led by Arabi Pasha, Sept. 13, 1882. After the battle of Kassassin, Aug. 28, the British were concentrated to attack the main enemy position, about 2½ m.



Telegraph. Principle of Morse telegraph circuit in general use.

long, at Tel-el-Kebir. The battle began by an assault on the enemy's trenches by the Highland brigade. Next day the cavalry pushed on to Cairo and secured the surrender of 15,000 troops in the city.

TELEMACHUS. In Greek mythology, son of Odysseus and Penelope. He was an infant when his father left to take part in the Trojan War, but after twenty years had passed without Odysseus reaching home, Telemachus set out to look for him, visiting Nestor at Pylos and Menelaus at Sparta. On reaching home again, he found that his father had arrived, and assisted him in slaying the suitors. See Odysseus. Pron. Te-lemma-cus.

TELEOLOGY (Gr. telos, end; logos, theory). In general, the doctrine of final causes, all speculation in reference to the idea of purpose, not only in man's conscious actions, but in all natural and historical processes. In theology, the teleological argument is, that the evidence of design in nature proves the existence of a personal God. Teleology is opposed to the mechanical theory, which would explain all phenomena by the law of mechanical causation. Teleology held the field till

the rise of modern philosophy, when it was repudiated by Descartes, Spinoza, and Bacon in favour of "operating causes."

TELEOSAURUS. Fossil marine crocodile found in rocks of the Jurassic period. The animal was remarkable for a long pointed snout armed with a large number of small teeth, and for a body covered with bony tuberculated plates. See Dinosaur.

TELEPATHY (Gr. *têle*, afar; *pathein*, to feel). Communication between two minds apart from the ordinary sense channels. Since about 1876, when Prof. Sir W. F. Barrett drew attention to such phenomena, the existence of the faculty has slowly gained acceptance. In many carefully conducted experiments the percipient has named a high proportion of playing cards, copied diagrams and sketches looked at by the agent, described scenes thought of, or objects tasted or smelt, localised pains, etc. Hypnosis greatly increases the power. See Hypnotism; Psychical Research.

TELEPHONE (Gr. *têlc*, afar; *phōnē*, sound). Device for transmitting sound and especially speech to a distance by means of electricity.

In 1860 J. P. Reis devised an instrument which could reproduce musical sounds but which could not transmit speech. This was first done by Graham Bell in 1876. His instrument consisted of an iron diaphragm free to vibrate in front of the pole of an electro-magnet. The coil of the magnet was in series with the telephone circuit. When speech waves strike the iron diaphragm of such an apparatus it is set into vibration. The movements of the iron cause currents of electricity of varying strength and direction to be set up in the magnet coil. These currents flow along the line, and at the distant end pass through the coil of a similar instrument. Here they vary the strength of the magnet, and therefore the pull which it exerts on the iron diaphragm, and so the latter is set into vibration. This in turn sets up sound waves in the surrounding air. The vibrations of the first diaphragm, the currents in the line, and the vibrations of the second diaphragm are copies of the original speech vibrations. In modern telephones the Bell instrument is retained as the receiver, but for the transmitter the carbon microphone is used (see Microphone).

Telephone connexion between distant towns is provided for by trunk lines. The efficiency of trunk lines has been increased by the introduction

of superimposed circuits, that is, by arrangements which permit the same line to be used for more than one conversation simultaneously. A further improvement has been made by the introduction of the thermionic valve relay. See Electricity; Post Office; Sound; Thermionic Valve; Wireless.

TELEPHOTOGRAPHY. OR **PHOTO-TELEGRAPHY.** Name given to the art of transmitting by wire or wireless a drawing or a photograph to be reproduced on paper, or on some medium by means of which it can be transferred to paper. See Phototelegraphy.

TELEPHUS. In Greek legend, a son of Hercules. He became king of Mysia, married Laodice, daughter of King Priam, and was wounded by Achilles. An oracle having declared that the wound could only be cured by the man who inflicted it, and that the help of Telephus was necessary for the taking of Troy, Achilles cured his wound.

TELESCOPE (Gr. *têle*, afar; *skopein*, to see). Instrument formed by a combination of lenses, or of mirrors and lenses, for the purpose of seeing distant objects distinctly.

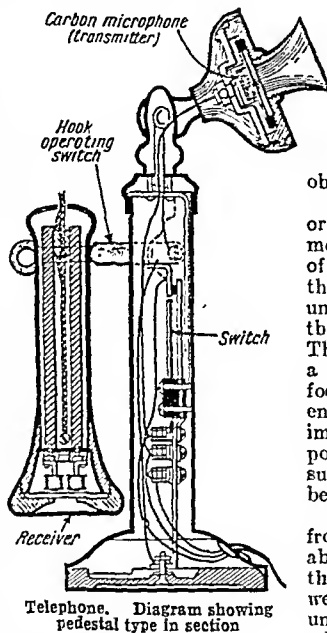
The essential feature of a telescope is a lens or mirror, called the objective, which collects more of the rays emanating from any point of a distant object than would otherwise enter the eye, and bends or reflects them so that they unite in a point called the focus. The rays then pass through an eyepiece to the eye. The objective gathers sufficient light to make a perceptible image in the focal plane. The eyepiece enables the eye to see that image when as near to it as possible, so that the angle it subtends at the eye may be large.

Early telescopes suffered from two defects known as aberrations. To obviate these defects long telescopes were made, but these proved unwieldy, and "aerial" telescopes were used in which the tube was dispensed with. Chromatic aberration is almost absent in the achromatic telescope, in which the object glass is formed of two or more lenses, convex and concave, which are made of different kinds of glass.

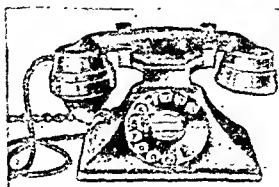
Before the invention of the achromatic object glass it was recognized that a concave mirror with a reflecting surface of parabolic shape would unite, at the focus of the paraboloid, the parallel rays which fell over its surface, and that this would supply an objective free from aberrations. James Gregory, 1663, was the first to give a complete explanation of the construction of a reflecting telescope. The objective is a mirror placed at the end of a tube, the

other end of which is open to the sky. From the object mirror the rays passing down the tube are reflected to one side, or back through a central hole in the object mirror, and then pass through an ordinary eyepiece. In the Herschelian type the image in the object mirror is viewed directly without a secondary mirror. See Astronomy; Lens; Observatory; Reflection; Refraction.

TELEVISION. Reproduction of a visual image at a distance. In 1880 Carey, an American, published details of an instrument to achieve television by imitating the human eye. Rignoux and Fournier, in France, in 1906, were among those who attempted television on these lines. Rühmer, in Berlin, in 1907, constructed a mosaic of selenium cells as transmitter and a corresponding bank of lights as receiver. In later devices it was sought to bring small units of the scene to be transmitted in turn before a light-sensitive cell. Bélin, in Paris, used oscillating mirrors to direct a beam of light over the lace to be transmitted. C. Francis Jenkins, in Washington (1925), used glass disks ground at the edge as a prism to zigzag his light beam, and

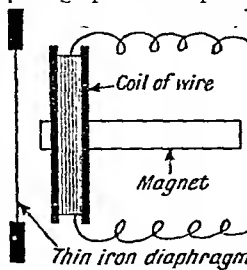


Telephone. Diagram showing pedestal type in section



Telephone. New type one-piece automatic telephone

Courtesy of the Postmaster-General

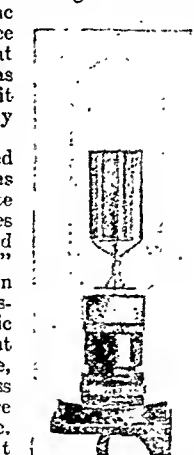


Telephone. Principle of Graham Bell instrument

that the wound could only be cured by the man who inflicted it, and that the help of Telephus was necessary for the taking of Troy, Achilles cured his wound.

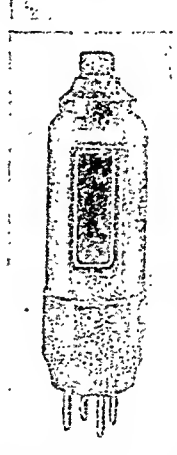
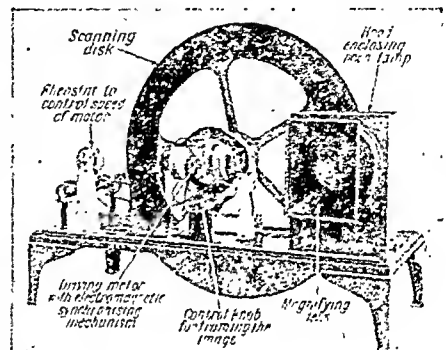
TELESCOPE (Gr. *têle*, afar; *skopein*, to see). Instrument formed by a combination of lenses, or of mirrors and lenses, for the purpose of seeing distant objects distinctly.

The essential feature of a telescope is a lens or mirror, called the objective, which collects more of the rays emanating from any point of a distant object than would otherwise enter the eye, and bends or reflects them so that they unite in a point called the focus. The rays then pass through an eyepiece to the eye. The objective gathers sufficient light to make a perceptible image in the focal plane. The eyepiece enables the eye to see that image when as near to it as possible, so that the angle it subtends at the eye may be large.



Television. 1. Neon lamp. 2. Photo-electric cell. 3. Baird television receiver

1 and 2, courtesy of Baird Television, Ltd.; 3, General Electric Co., Ltd.



in this way he obtained shadows of objects.

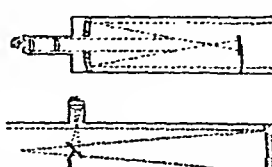
On Jan. 27, 1926, John L. Baird gave a demonstration of light and shade television to members of the Royal Institution, when the human face was transmitted. Baird used a scanning disk which carried two spirals of lenses, and the reflected light from the illuminated object was caused to affect a photo-electric cell. The apparatus then used is exhibited at the South Kensington Museum.

In April, 1927, the American Telephone and Telegraph Co. gave a demonstration of television by land line and by wireless. Using the same disk

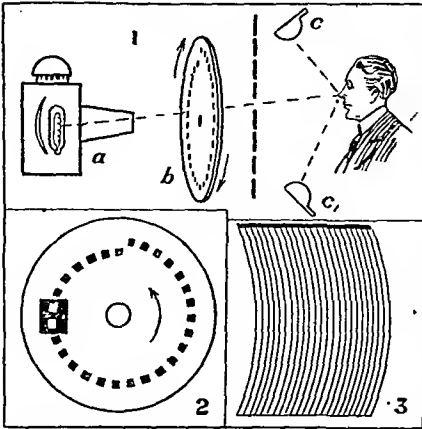
method Dr. E. F. W. Alexanderson, for the General Electric Co., broadcast, in Jan., 1928, images of faces to several homes in New York.

On Sept. 30, 1929, the B.B.C. and the Baird Television Co. started a public television broadcasting service.

THE BAIRD TELEVISION PROCESS. The person to be televised sits in front of a screen facing a small window in a partition dividing the darkened studio from the apparatus. Facing him above are several photo-electric cells. Light from an optical projector is focused on to the subject through the window, and by means of a scanning disk the beam is made to traverse strip by strip the whole of the area comprising the subject (i.e. the sitter's head and shoulders, and the background). Each



Telescope. Above, Gregorian form. Below, Newtonian, with eyepiece in side of tube

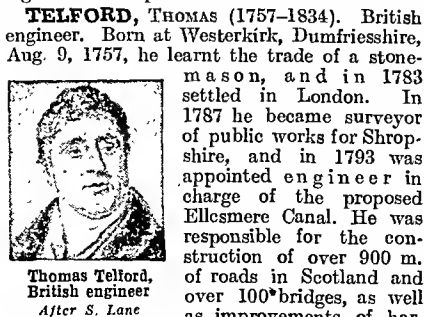


Television, the Baird System. 1. Diagram showing how the subject is explored by moving light spot: a, projector; b, scanning disk; c, d, photo-electric cells. 2. Scanning disk: area occupied by image is shown in black rectangle. 3. Illuminated area on background, formed by light strips. Dark band at top furnishes the synchronising signal

portion thus scanned has a particular light value, and the current from the photo-electric cells varies in strength according to the intensity of the light reflected on to them at any instant from the subject. The current from the cells is amplified, and caused to modulate the carrier wave sent out by wireless to be picked up by distant receiving apparatus.

The receiver comprises a scanning disk revolving in front of a neon lamp at the same speed as the transmitting disk and in phase with the latter. Both disks contain 30 rectangular holes arranged in a spiral near the periphery. The lamp, which has a large rectangular anode plate, is connected in the output circuit of a wireless receiver, and when the television signals are picked up they cause a fluctuating current in the neon lamp, so that its anode glows with a varying intensity proportionate to the current strength. The current strength, of course, is dependent on the light value of the area of the subject being scanned.

Each hole in the disk traverses an area of the illuminated plate corresponding in position with the part of the subject area then being explored by the light spot of the transmitter. Owing to persistence of vision the light strips are not seen separately or successively, but the thirty, combined side by side, build up a light picture of the subject being televised. The image is viewed by a magnifying lens and its size and shape is controlled by a mask. Synchronisation is effected automatically, a periodic impulse sent out from the transmitter actuating a magnetic device on the receiver, and thus holding sending and receiving disks in step.



Thomas Telford, British engineer
After S. Lane

at Wick, Aberdeen, Peterhead, Banff, Leith, etc. He superintended the construction of many roads in England, and the Menai suspension bridge. Telford died Sept. 2, 1834.

TELL, WILLIAM. Legendary national hero of Switzerland. He is first mentioned in a ballad and a chronicle. It relates that Gessler, the tyrannical bailiff of the duke of Austria, ordered those who passed to salute the duke's hat set up in Altdorf. Refusing to do so, Tell, a peasant of Uri, escaped execution by shooting an apple placed on his young son's head. Taken as prisoner in a boat with Gessler and his men, he leapt ashore during a storm, and from an ambush shot the tyrant. Tell then led a rising, resulting in Swiss independence. These events are dated 1307. It has been shown that the story is unhistorical. Schiller's great drama, *Wilhelm Tell*, was written 1804, and Rossini's opera, *Guillaume Tell*, was produced in 1829.

TELL-EL-AMARNA. Ancient city on the right bank of the Nile. It is 25 m. upstream from Beni Hasan, Upper Egypt. In 1892 Flinders Petrie excavated, in Akhenaton's royal residence Akhetaton, stucco pavements with naturalistic paintings and much pottery. About 300 clay tablets in Babylonian cuneiform, from the archives of Amenhotep III, and Akhenaton, recovered in 1887 and subsequently, include letters from Mesopotamian kings and Syrian governors.



Temperature. Map showing the actual average temperature experienced throughout the year in the British Isles, indicating the difference in temperature between the highlands and lowlands

TELLURIUM. One of the non-metallic elements. Its chemical symbol is *Te*, atomic weight 127.5, atomic number, 52. It is found in small quantities in the native state, but usually combined with metals, e.g. as tetradymite or bismuth telluride. Tellurium is greyish-white with a metallic lustre, and was long thought to be a metal, but belongs to the sulphur group of elements.

TELPHERAGE (Gr. *tele*, far; *pherein*, to bear). Name given to a form of cableway transportation in which the supporting trolleys are equipped with their own self-propelling electric motors. See *Rope*.

TEME. River of Wales and England. It rises on the borders of the cos. of Radnor and Montgomery and flows S.E. to join the Severn 1½ m. S. of Worcester, after a course of 60 m.

TÉMÉRAIRE. British warship. The first was a wooden vessel carrying 98 guns captured from the French at the battle of the Nile. Under Harvey she fought at Trafalgar. Her record won for her the name of the *Fighting Téméraire*, and she was immortalised by Turner's picture showing her tugged to her last berth. In 1875 another *Téméraire*, an ironclad, was built. The third *Téméraire* was a Dreadnought launched in 1907.

TEMORA. Township of New South Wales. It is 296 m. by rly. S. of Sydney, and is a centre for the goldfields and for a sheep rearing dist. Pop. 3,600.

TEMPE (Gr. *cuttings*). Name of a valley in Thessaly. Lying between Mts. Olympus and Ossa, about 6 m. long, and watered by the river Peneus, it was associated with the worship of Apollo, and was one of the most important passes of northern Greece. Its modern name is Lykostomo, wolf's mouth.

TEMPERATURE. Condition which determines the direction of flow of heat energy from one substance to another with which it is in contact. Substances at a high temperature impart heat to all adjoining substances which are at a lower temperature. Temperature is measured by a thermometer.

The atmosphere owes its temperature almost entirely to solar heat. Everywhere there are rhythmic changes of air temperature; daily, with the march of the sun across the sky and, annually, with the variation in the sun's altitude; the changing seasons testify to this solar source of warmth. But the atmosphere receives little solar heat directly, otherwise the mountain tops would not be snow-capped. The sun warms the land and the sea, which in turn warm the air impinging on their surfaces, and this air moves and carries heat to air at higher levels. See *Aethrioscope*; *Atmosphere*; *Thermometer*.

IN MEDICINE. The temperature of the body may afford valuable help in the diagnosis of disease. In health the bodily temperature is about 98.6° F., but varies slightly during the day, being most often rather higher in the evening than in the early morning.

TEMPERING. Process for the hardening of metals. The metal is heated to a certain point and then cooled rapidly or slowly in accordance with the result required. Wrought iron and mild steel are often case-hardened. See *Metallurgy*.

TEMPEST, MARIE (b. 1866). Stage name of Marie Susan Brown, British actress. Born July 15, 1866, and educated abroad, she made her first appearance on the stage as Fiametta in the operetta of Bocaccio, at the Comedy Theatre, London, 1885. She won great popularity in comic opera, performing in the title-role of Dorothy 931 times (Lyric, 1887), but really made her name as a comedy actress in *Becky Sharp*, 1901. She visited America in 1890, and, again in London, produced many plays under her own management. She appeared in *The First Mrs. Fraser* at the Haymarket, London, 1929-30.



Marie Tempest, British actress
Hoppe

Templars. Name by which the knights of the order of the Temple are sometimes known. See *Knights Templars*.

TEMPLATE or **TEMPLET.** Pattern made of wood or sheet metal to show the outline size of a thing, the position of bolt-holes, rivet-holes, etc. In masonry, templates are slabs of hard stone set in a wall to take the ends of a beam or girder, and so to distribute the stress over a greater area.

TEMPLE (Lat. *templum*). Building dedicated to the worship of a god or goddess. The first temple of the Romans was simply the space of earth and sky marked off by an altar for divination. Egyptian temples were built by degrees over a long period, each new king adding to the original plan by building new courts in front of old ones, or converting courts into covered halls, until a vast area was covered by the sacred building. The solid materials used gave permanence. Temples in Mesopotamia were built of unbaked bricks.

The Hindu temples of India resemble those of the Egyptians in regard to successive growth, though their style is widely different, the peculiar religious ideals of the Indians finding expression in luxuriant and involved ornamentation rather than in rational principles of construction. Many are cut out of solid rock. The pagoda form is well illustrated at Madura. Buddhist temples in China and Japan are generally of two storeys. The Greek temple affords the most conspicuous examples of Greek architecture. See Agrigutum; Benares; Cave Temple; Karnak; Kyoto; Pantheon; Rome, etc.

THE TEMPLE AT JERUSALEM. Occupied by three temples in succession, the site of this was on the E. ridge, sometimes called Moriah, separated from the main part of the city by the Tyropoeon valley. Solomon's temple, described in 1 Kings 6, 7, appears to have belonged to the Phoenician type, with certain Egyptian and Aegean features. Destroyed by Nebuchadrezzar, 586 B.C., it was rebuilt by Zerubbabel, encouraged by Haggai and Zechariah, 520-516 B.C. Herod the Great, who had in 37 B.C. destroyed the temple, began in 20 B.C. to rebuild it on a magnificent scale. The area, doubled in size, and 26 acres in extent, was surrounded by a lofty colonnade, triple on the S. side. It was burnt by the Romans, A.D. 70.

The Temple was a group of buildings formerly standing in Paris, originally the headquarters of the order of Knights Templars.

TEMPLE. District of London. It lies between W. Fleet Street and E. Strand and the Thames, was the property, 1184-1313, of the Knights Templars (q.v.), then of the Knights of St. John of Jerusalem (q.v.), and since 1608 has belonged to the two inns of court, middle and inner, who maintain the church. The E. or Inner Temple portion is marked by the device of a winged horse; the W. or Middle Temple by the lamb and flag. The Middle Temple Hall was built 1562-72, the entrance tower being added in 1832.

THE TEMPLE CHURCH. One of the four round churches in England, this is in the Temple, London, and is the church of the Inner and Middle Temple. Its head is the Master. It was built by the Knights Templars, was consecrated in 1185, and is dedicated to S. Mary. It contains recumbent marble figures of the Templars of the 12th and 13th centuries, and other ancient monuments. Outside is the grave of Oliver Goldsmith. See Knights Templars.

TEMPLE, EARL. British title held by the family of Temple since 1749. About 1590 John Temple bought the estate of Stowe. His son Thomas was made a baronet in 1611, and from him the earls are descended. The title was first bestowed upon Hester, daughter of Sir Richard Temple of Stowe. She married Richard Grenville, and their son was Richard Grenville Temple, who was lord privy seal 1757-61, and is known as the brother-in-law and colleague of Pitt.

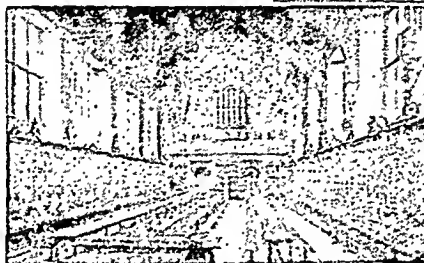
On his death, in 1779, the earldom passed to a nephew, George Grenville-Temple-Nugent. Twice lord-lieutenant of Ireland, he was made marquess of Buckingham, and was the father of the 1st duke of Buckingham and Chandos who, in 1822, was created Earl Temple of Stowe, with remainder to his granddaughter Anna, who married W. H. P. Gore-Langton. On the death of the 3rd duke of Buckingham, in 1889, the original earldom of Temple became extinct, and the new earldom passed to W. S. Gore-Langton.

TEMPLE, FREDERICK (1821-1902). British prelate. He was born in the Ionian Islands, Nov. 30, 1821, second son of Major Octavius Temple, lieutenant-governor of Sierra Leone. In 1846 he was ordained, and for some

years he was an inspector under the board of education. From 1857 to 1869 he was headmaster of Rugby. In 1869 he was chosen bishop of Exeter, and in 1885 was translated to London, remaining there until elected archbishop of Canterbury in 1896. He died at Lambeth, Dec. 23, 1902.

TEMPLE, SIR WILLIAM (1628-99). English diplomatist. Eldest son of Sir John Temple (1600-77), master of the rolls in Ireland, he was born in London and educated at Emmanuel College, Cambridge. After a period of foreign travel he married Dorothy Osborne in 1655, represented Carlow in the Irish parliament, 1660, and began his diplomatic career in 1665. In 1668 he effected the alliance between England, Holland, and Sweden; and in 1677 brought about the marriage of William of Orange and Mary. He spent the latter part of his life at Moor Park, Surrey, where Jonathan Swift was his secretary. He died Jan. 27, 1699. Temple wrote Memoirs, Letters, and Essays, as well as some verse.

TEMPLE, WILLIAM (b. 1831). British prelate. Born at Exeter, Oct. 15, 1831, the second son of Frederick Temple, he was educated at Rugby and Balliol College, Oxford. From 1904 to 1910 he was in Oxford as fellow and tutor of Queen's College, and from 1910-14 he was head of Repton School.



Temple, London. Interior of Middle Temple Hall, built 1562-72. Above, Temple Church

Ordained in 1908, he became rector of S. James's, Piccadilly, in 1914, and canon of Westminster in 1919. In 1920 he was chosen bishop of Manchester, and in 1928 succeeded Lang as archbishop of York.

TEMPLE BAR. E. boundary of the city of London liberties. The spot in that street has been marked since 1830 by Temple Bar Memorial. The original bar or chain was superseded in 1533 by a stone gateway, which was replaced, 1670-72, by another, built by Wren. This was removed, 1878-79, and re-erected, 1888, at Theobald's Park. At Temple Bar, on the occasion of a royal visit to the city, the lord mayor of London presents the civic sword to the sovereign.

TEMPLEMORE. Urban dist. of co. Tipperary, Irish Free State. The centre of an agricultural district, it stands on the Suir, 11 m. S. of Roscrea, on the Gt. Southern Rlys. The town was founded by the Templars. Pop. 2,233.



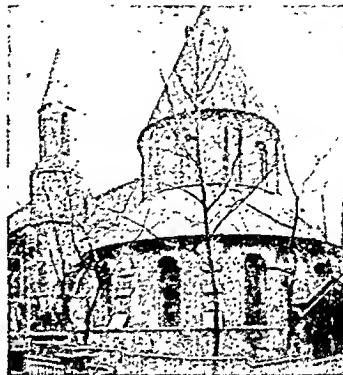
Frederick Temple, British prelate

TEMPLE NEWSAM. Estate of Yorkshire (W.R.), 3½ m. from Leeds. The name is due to the fact that here, in 1181, the Knights Templars built a house. After the suppression of the order the estate passed to the family of D'Arcy and

came later to the Meynell Ingrams. From them it was inherited by the Hon. E. Lindley Wood, afterwards Lord Irwin, who sold the estate in 1921 to the corporation of Leeds.

TEMPO (Ital. time). Term relating to the pace of music, and not to time in the technical sense. It is usually indicated by Italian words which have now gained a cosmopolitan meaning. These words are sometimes exact in signification, e.g. *lento*, slow; *presto*, quick; sometimes they are indicative of character, e.g. *allegro*, gay; *andante*, going. They can be modified by the addition of other words.

TEMPSFORD. Village of Bedfordshire. Situated at the junction of the Ouse and Ivel, on the L.N.E. Rly., it is 9 m. N.E. of Bedford. The Early English church of All Saints was restored in 1867. Pop. 468.



TENANT. In English law, one who holds, i.e. possesses property of which another is the owner. In theory, no one in England is the owner of land. He always holds of someone; and, if of no one else, of the king. This is part of the feudal law. Thus we speak of a tenant in fee simple, a tenant in fee tail, a tenant for life, a tenant for years, a tenant from year to year, a weekly tenant, etc.

In a more limited sense, a tenant is one who holds for a definite period,

subject sometimes to notice to quit, at a rent. A service tenant is one who holds a tenement as part of his contract of service and as part of his remuneration.

In England, tenant right is a custom whereby an outgoing agricultural tenant can recover from his landlord compensation for some labour expended, or improvement effected by the tenant in the holding, of which by reason of the termination of the tenancy he has not reaped the full benefit. In Ireland, tenant right means the right of a tenant to remain in his holding, and not to have his rent raised except under certain conditions. See Land; Landlord; Rent.

TENBURY OR TENBURY WELLS. Market town of Worcestershire. It is 22 m. N.W. of Worcester on a branch line of the G.W. Rly. It is on the river Teme, which here forms the boundary between Worcestershire and Shropshire. There are pump and bath rooms for the medicinal springs, which yield water beneficial to gouty and rheumatic complaints. In the vicinity is the church and college of S. Michael, built in 1856, for the study of sacred music. Market day, Tues. Pop. 1,922.

TENBY. Borough, seaport, market town, and watering place of Pembrokeshire. With a



Temple Bar. The old London gate before its removal in 1878

station on the Great Western Railway, it is 9½ m. E. of Pembroke, on Carmarthen Bay. Formerly a busy seaport, Tenby now depends on its increasing popularity as a seaside resort. The town walls,

repaired by Henry VIII, are mostly existing, while the keep of the castle, built by the Flemings, is still almost intact. The church of S. Mary was restored in 1885. There was a Flemish colony of weavers in Tenby in the 12th century. Market day, Sat. Pop. 4,830.

TENCH (*Tinea vulgaris*). Fresh-water fish of the carp family, a native of Europe, including Britain, and of parts of Asia Minor. Attaining a length of about 18 ins. with a weight between 3 lb. and 4 lb., its upper parts are olive, paling to light grey beneath, but the coloration varies with its surroundings. The fish inhabits still waters, preferably those with deep muddy bottoms, in which it can hibernate, and on which in summer it lies lazily. Its food is mainly water weeds and the snails and insects found among them. With proper treatment it is a palatable food.



Tench. European fresh-water fish swimming among weeds

TEN COMMANDMENTS. Term used for the Decalogue, or code of ten laws given through Moses to the children of Israel. They formed part of the Jewish law and were adopted by the Christian Church, finding a place in the prayer book of the Church of England and in other service books. They are given in Exodus 20. See Decalogue.

TENDON. Fibrous cord which connects the fleshy part of a muscle with the bone into which the muscle is inserted. Rupture of a tendon is most frequently the result of violent strain. Satisfactory recovery usually occurs.

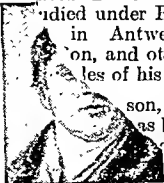
The tendon of Achilles is a stout tendon forming the lower part of the gastrocnemius muscle. It passes down the leg and is inserted into the back of the heel. The name perpetuates the legend that it was the place where Achilles was vulnerable and received his fatal wound. See Anatomy; Muscle.

TENEBRAE (Lat. darkness). Name given in the R.C. liturgy to the office of matins and lauds of the three last days of Holy Week. Originally said in the early hours of the morning; the combined office is now said or sung, by way of anticipation, on the evenings.

TENEDOS. Turkish island in the Aegean Sea off the W. coast of Asia Minor. About 6 m long and 2 m. broad, its area is 16 sq. m. Formerly belonging to Turkey, it passed to Greece under the treaty of Sévres, 1920, but was returned to Turkey in 1923. Pop. 6,052.

TENERIFE, TENERIFFE, OR SANTA CRUZ. Largest of the Canary Islands. The island is of volcanic origin and is crowned by the Peak of Tenerife, El Pico de Teide, 12,100 ft. alt., with a crater 300 ft. in diameter and 70 ft. deep. The Peak, which erupted in 1910, may be seen more than 100 m. away and forms a landmark for navigators. The chief town and seaport is Santa Cruz de Tenerife. Its area is 782 sq. m. Pop. 176,998.

TENIERS. Name of a family of Flemish Artists. The first to attain distinction was David Teniers the elder (1582-1649). He studied under Rubens and passed most of his life in Antwerp. The National Gallery, London, and other European galleries contain many of his works.



Thomas Telford, British engineer After S. Lane

son, David Teniers the younger was born in Antwerp, Dec. 15, 1610, and was his father. Nearly 1,000 of his pictures are known to exist; mostly small ones, but many of great interest. They show the life of the people of his time, and are of great value as illustrations of the life of the people of his time. He died at Antwerp, 1690.

TENISON, THOMAS (1636-1715). English prelate. Born at Cottenham, Sept. 29, 1636, he was educated at Norwich and Cambridge. Ordained in 1659, he held livings in Cambridge and at Norwich—S. Peter Mancroft—and in London—S. Martin's-in-the-Fields. In 1691 he was made bishop of Lincoln and in 1695 archbishop of Canterbury. He died Dec. 14, 1715. When at S. Martin's-in-the-Fields he built and endowed a school for boys. From 1871 to 1928 this was in Leicester Square.

In 1928 it was moved to a new building near the Oval at Kennington, where there is accommodation for 450 boys and a roof playground.

TENNANT, SIR CHARLES (1823-1906). British merchant. Born at Glasgow, Nov. 4, 1823, he was educated there, and in 1846 joined his father as partner in the chemical works at St. Rollox founded by his grandfather, another Charles Tennant (1768-1838). Tennant also secured interests in explosive, mining, and other companies. He represented Glasgow and Peebles and Selkirk in Parliament, 1878-86, and in 1885 was made a baronet. Tennant made a fine collection of pictures by British masters, now housed at 34, Queen Anne's Gate, London, and known as the Tennant Gallery. He died June 4, 1906.

His eldest son, Edward (1859-1920), was made Lord Glenconner in 1911.

The youngest son, Harold John Tennant (b. 1865), was Liberal M.P. for Berwickshire, 1894-1918. He was parliamentary secretary to the board of trade, 1909-11; financial secretary to the war office, 1911-12; under-secretary for war, 1912-16; and secretary for Scotland, July-Dec., 1916. One of his daughters was the countess of Oxford and Asquith.

TENNESSEE. State of the U.S.A. In the N. the river Cumberland enters and leaves the state by way of Kentucky. Maize, wheat, oats, peanuts, tobacco, and cotton comprise the chief crops, and a considerable quantity of hardwood is obtained. Coal, iron, copper, phosphate, and marble are worked, and iron and steel, timber products, cotton, leather, and tobacco are among the manufactures. Two senators and ten representatives are returned to Congress. Nashville is the capital. It was admitted to the Union in 1796. Its area is 42,022 sq. m. Pop. 2,502,000.

The Tennessee river is a tributary of the Ohio. It flows through the state and into Kentucky. With tributaries it is 1,200 m. long.

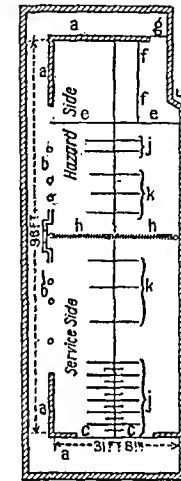
TENNIEL, SIR JOHN (1820-1914). British artist. The son of a teacher of dancing, he studied at the R.A. schools. In 1850 he began to supply a weekly political cartoon to Punch, and continued this work till he retired in 1901. Although deprived early, through a fencing accident, of the sight of one eye, he was a meticulously accurate draughtsman, and always effective in his humour. His illustrations to Lewis Carroll's *Alice's Adventures Under the Looking-Glass* are famous. He was knighted in 1893 and died Feb. 25, 1914. See Cartoon; John Bull.



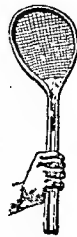
Sir John Tenniel, British artist Elliott & Fry

TENNIS. Game played with a ball and rackets by two or four persons on a walled court divided across the middle by a net. The game was first played with the hand and in the open air. By degrees the racket was developed, chiefly in Italy, and in that country, France, England, and elsewhere courts were built for the game.

There is no standard size for a tennis court, which is an oblong building with four walls and roof, but the main dimensions are about as follows—greatest internal length 110 ft., greatest internal breadth 38 ft. 10 ins., length of floor 96 ft., breadth of floor 31 ft., height of side walls in play 24 ft., height of end walls in play 30 ft. The net is 5 ft. high at the sides and 3 ft. in the centre of the court. Round the outer walls there runs on three sides of the court an inner wall with a sloping roof.



Tennis. Plan of court: a, passage beneath penthouse; b, galleries; c, dedans; d, tambour; e, service line; f, pass line; g, grille; h, net; i, chaises; k, galleries. Above, right, tennis racket



This roof, which joins the outer walls at a height of 10 ft. 7 ins., and the inner wall at a height of 7 ft. 2 ins., is known as the pent-house. The remaining outer wall, known as the main wall, is plain, with one buttress known as the tambour. On one side, the service side, there is a large opening in the inner end wall known as the dedans, and on the other, the hazard side, is a small opening in the inner end wall known as the grille. In the inner side walls on either side of the net are a number of openings known as galleries. The last opening farthest from the net on the hazard side is known as the winning gallery. The rackets are made of ash, and weigh 15-17 ozs.

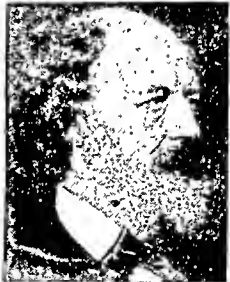
TENNYSON, ALFRED (1809-92). British poet. Born Aug. 6, 1809, at the Rectory, Somersby, Lincolnshire, he was the fourth son of the Rev. George Clayton Tennyson, and was educated at Louth Grammar School.

After leaving school he prepared, mainly with the help of his brother Charles, the Poems by Two Brothers, and entered Trinity College, Cambridge, where he met Arthur Henry Hallam.

Tennyson made his first real bid for public recognition with Poems Chiefly Lyrical in 1830, but he did

little more until 1842, when he published the famous two-volume edition of his poems. With *The Princess*, 1847, he manifested new style and power. The year 1850, in which he married and was appointed poet laureate in succession to Wordsworth, was made memorable by the publication, at first anonymously, of *In Memoriam*. Two other works were to crown the poet's career—*Maud*, in 1855, and the prolonged series of *Idylls of the King*, 1859-72.

The poet was amazingly prolific in his old age, and his successive volumes excited interest amounting to enthusiasm. His first drama was published when he was 66; and Queen Mary, though doubtfully received, was followed rapidly by *Harold and Becket*, all on the Elizabethan model; later came *The Falcon*, *The Cup*, *The Promise of May*, and *The Foresters*. Of greater value were his *Ballads and Poems*, 1880. He died Oct. 6, 1892, and was buried in Westminster Abbey.



Alfred, Lord Tennyson, British poet

In 1884 Tennyson was made a baron, and this title passed to his only surviving son, Hallam Tennyson (1852-1928). He was governor-general of Australia, 1902-04, and wrote the standard life of his father, 1907.

Licnel Hallam Tennyson (b. 1889), the 3rd baron, was famous as a cricketer. He served throughout the Great War, being wounded three times. He played cricket for Eton, and afterwards for Hampshire. He played for England against Australia in 1921, becoming captain after the first two test matches. In 1921 he was made captain of Hampshire, and he was still captain in 1930.

TENOR (Lat. *tenere*, to hold). Musical term with several connotations. The male voice which lies between the bass and the alto, having moreover its own distinctive quality, is called tenor, because when a lower part was added to the plainsong, the latter was said to be "held" by the higher voice. Tenor is also applied to one of the trombones and to a military drum. In a peal of bells, the tenor is the lowest in pitch. The tenor clef is the C clef placed on the fourth line of the stave.

TENREC (Centetes). Genus of small mammals of the order Insectivora. Natives of Madagascar, they are much like hedgehogs in appearance and habits, being sometimes known as the tailless groundhog. They are about 14 ins. in length, brown in colour, and are clothed with a mixed



Tenrec. Madagascan mammal resembling the hedgehog

coat of hair and spiny bristles. They have long pointed muzzles and rudimentary tails. They partially roll up when attacked. Their food consists of insects (beetles) and occasionally frogs.

TENTERDEN. Borough and market town of Kent. It is 62 m. from London on the Southern Ry. The 13th century church of S. Mildred has a massive Perpendicular tower. On its N. side is an exelusion, or penitentiary, where Protestant martyrs were imprisoned in Queen Mary's reign. The town is an agricultural centre in the Weald district. Market day, Mon. Pop. 3,438.

TENTERFIELD. Municipality in Clive co., New South Wales. A road junction on the main rly. line from Brisbane to Sydney, 11 m. from Wallangarra on the border, it is the centre of a pastoral district. Pop. 2,700.

TEOCALLI (Mex. god-house). Pre-Columbian temple-pyramid in Mexico and Central America. Usually a solid earth or stone four-sided step-pyramid, a winding ascent or a stairway on each side led to a temple-crowned platform. The five-terraced Aztec pyramid in Mexico city, 375 ft. by 300 ft., was surmounted by shrines of colossal deities. See Aztec.

TERBIUM. Rare earth metal of the yttrium group. Its symbol is Tb; atomic weight 159.2; atomic number 65. It was isolated from yttrium in 1843 by Mosander, and is found in gadolinite.

TERBURG OR **TERBORCH**, GERARD (c.1617-81). Dutch painter. Born at Zwolle, he studied under his father, Geert Terburg, and Pieter Nolinj at Haarlem. He settled at Deventer, Holland, where he became burgo-master. As a painter of pleasant Dutch interiors he has few rivals.

TEREBENE. Colourless liquid with a pleasant smell resembling thyme and camphor. It is prepared by thoroughly shaking American

oil of turpentine with successive quantities of sulphuric acid. The product is then distilled. Terebene is used as an inhalation in affections of the throat and lungs. Painters' terebene is a preparation added to paints to promote drying, and consists of manganese and lead soaps dissolved in oil of turpentine.

TEREBINTH OR **TURPENTINE TREE** (*Pistacia terebinthus*). Small tree of the order Anacardiaceae, a native of the Mediterranean



Terebinth. Foliage and flower sprays of the turpentine tree

region. Its height is about 30 ft. The small, greenish flowers are without petals and in large clusters. From incisions in the bark a resinous fluid is obtained, the Chian or Cyprus turpentine. Horn-shaped galls, useful for dyeing and tanning, are also obtained from this tree. *P. lentiscus* yields fruits of *P. vera* are called pistachio nuts.

TEREDO OR **SHIPWORM**. Genus of marine bivalve molluscs. The valves of the helmet-shaped shell are small and gaping, and the worm-like animal is a foot or more long. For the protection of the eleven-twelfths that are not covered by the shell it secretes a chalky tube. Using the shell as a tunnelling shield, the teredo, with its foot, bores into submerged timber. A pair of siphons extend through the chalky tube and open into the water. Through one siphon water is inhaled to the gills, and then exhaled through the other laden with the wood pulp excavated by the foot. The burrow is made merely as a retreat.

TERENCE (c. 194-159 B.C.). Roman comic poet, whose full name was Publius Terentius Afer. Devoting himself to translating Greek drama into the Latin tongue, his first play, *Andria*, was produced in 166, and its instant success admitted its author into a brilliant literary group, including Caius Laelius Lucilius and Polybius. *Andria* was followed by *Heeyra* 165, *Heaton Timorumenos* 163, *Eunuchus* and *Phormio*, both in 161, and *Adelphi* 160. Terence was supposed to have died in 159 or 158 B.C. of grief at the loss at sea of his translations of Menander. He is a great figure in Roman literature.

TERESA (1515-82). Spanish nun and saint. Of the noble Castilian family of Cepeda, she was born at Avila, March 28, 1515, and in 1534 entered a Carmelite convent. Experiencing a sudden conversion in 1555, she practised extreme austerities and saw many visions. Resolved to reform the order, she founded with a few companions a new convent at Avila in 1562. She secured the foundation of many reformed Carmelite convents both for men and women. These were placed under a separate administration approved by the pope in 1580. Teresa de Jesus, as she



Teresa, Spanish saint After Rubens

called herself, died at Alva, Oct. 4, 1582. She was canonised in 1622.

One of the greatest women Spain has produced, S. Teresa described her own spiritual experiences and life in *The Way of Perfection* and *The Book of the Foundations*.

TERM (Lat. *terminus*, boundary line). Word used in many cognate senses. In English legal procedure the legal year was divided into four terms or periods when the courts at Westminster were open. These were: Michaelmas, Nov. 2-25; Hilary, Jan. 11-31; Easter, April 15-May 8; Trinity, May 22-June 12. In 1873 the judicial terms were abolished, their place being taken by sittings of the courts. At the Inns of Court, however, the terms are still kept by students. School and university years are also divided into terms.

TERMINUS. In Roman mythology, a deity who presided over boundaries and frontiers. When a boundary was fixed, a sacrifice was made and a trench dug, into which the body of the animal, together with other offerings, was put. A fire of pine branches was then lighted in the trench and the stone or emblem of Terminus was erected upon the ashes.

TERMITE OR **WHITE ANT**. Family (Termitidae) of neuropterous insects, natives of all the warmer countries of the world. They are entirely distinct from the ants. There are exceedingly prolific females ("queens") of huge dimensions, smaller males, workers, and "soldiers." They are all pale and soft-bodied, and very sensitive to light. They tunnel underground, cementing the walls of their runs with their excrement, which hardens into a brick-like substance; of this material some species erect tall, conical "ant hills," sometimes 20 ft. high. Termites live mainly upon decaying vegetation.

TERN (*Sterna*). Genus of sea-birds of the gull family (Laridae). Characterised by their long wings, forked tails, and short legs, they feed mainly upon fish, which they snatch from the sea with great skill. They are poor walkers, and when seen on land are mostly resting. Five species—common tern, Arctic tern, roseate tern, little tern, and Sandwich tern—breed in Britain, while several others are occasional visitors.



Tern. Common species of the British long-winged sea-bird W. S. Berridge, F.Z.S.

TERN. River of Shropshire. It rises in the N.E. of the co., and joins the Severn 4 m. S.E. of Shrewsbury, after a course of 30 m. Its chief affluent is the Roden.

TERNI. City of Italy. It stands on the river Nera, near its union with the Velino, 68 m. by rly. N.N.E. of Rome. The 13th century cathedral has been much altered and restored. Among ancient relics are an amphitheatre, theatre, baths, temple, sculptures, and a necropolis. In the vicinity are the Velino waterfalls, which descend about 650 ft. in a series of leaps. In 1928 a scheme was completed for using the water to generate electric power. Pop. 71,442.

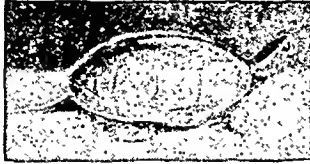
TERPANDER (fl. c. 700 B.C.). Greek poet and musician. A native of Lesbos, he wrote lyrics, of which only scanty fragments have survived, and is said to have been the first to set poetry to music.

TERPENES. Hydrocarbons which form the chief constituents of the essential oils obtained from plants. They are colourless

volatile liquids with the exception of camphene, which is a solid resembling camphor. Pinene, one of the group, is a constituent of American and French oil of turpentine. From it an artificial camphor is obtained. Limonene, another terpene, occurs in lemon, orange, bergamot, and caraway oil.

TERRA COTTA (Ital. baked earth). Unglazed earthenware of fine fired clay, either red or yellow. In English use the term is rarely applied to pottery. The ancient Greeks employed terra cotta extensively in architecture and statuary. In the 14th century architectural decoration in terra cotta revived in Germany and N. Italy, and much use was made of it in the Renaissance age. In the second half of the 19th century the material was favoured for facing and decorating important buildings, partly because of its resistance to the corrosive action of the atmosphere peculiar to great cities.

***TERRAPIN.** Name applied to various water tortoises of the family Testudinidae, but attaching specially to *Malacoelemmys terrapin*, a native of the salt marshes on the E. coast of N. America. The terrapin is an omnivorous feeder and of amphibious habits. See Tortoise.



Terrapin. Species of water tortoise, used as food in the U.S.A.
W. S. Berridge, F.Z.S.

TERRIER. Group of domestic dogs. Its name (Fr. terrier, a rabbit burrow) indicates the original use of these dogs for unearthing game, and is used to include dogs such as the bull terrier, and others whose relation to the true terriers is rather remote. All terriers have short, arched skulls and alert appearance, and possess a high degree of intelligence. See Airedale; Fox Terrier; Griffon; Irish Terrier; Skye Terrier.

TERRISS, WILLIAM (1847-97). Stage name of the British actor, William Charles James Lewin. Born in London, Feb. 20, 1847, he made his first appearance in London in T. W. Robertson's comedy, *Society*, in 1865, and scored his first considerable success as Squire Thornhill in Wills's *Vicar of Wakefield* at The Court, March 30, 1878. He was in Irving's company at The Lyceum, 1880-85. He was stabbed to death by a madman outside the Adelphi theatre, Dec. 16, 1897. His daughter Ellaline (Mrs. Seymour Hicks), has won many successes in musical comedy. See Hicks, E. S.

TERRITORIAL ARMY. Second line of defence of the British military organization, formerly called the Territorial Force. The country was divided into districts and the counties taken as units, each having a Territorial Force Association, under the lord-lieutenant. Men from 17 to 35 years of age were eligible for enlistment, serving for four years. They were expected to attend a training camp each year, and also certain drills and musketry exercises. They undertook to serve in any part of the U.K. in case of invasion, but not abroad. The Force dates from 1907.

The strength of the force on July 1, 1914, was 255,864, and recruits enlisted between then and June 28, 1916, totalled 888,989. The Territorial casualties in 1914-18 (excluding officers) were 115,576 killed, and the grand total, killed, wounded, and missing, was 541,245. In 1921 the name was changed to the Territorial Army. In 1930 its strength was 3,226 officers and 79,869 other ranks.

TERRITORY (Lat. terra, earth). Land belonging to a city or state. It is used in the U.S.A. for a district which has not received state rights. Canada and Australia use the word in the same sense; Canada has the North-West Territories and Australia Northern Territory. See Federalism; Sovereignty; State.

Territorial waters is a term for the sea within a distance of three miles of a country's coastline, regarded as belonging to it.

TERROR. Volcano on Ross Island, South Victoria Land, Antarctica. lat. 77° 30' S., and reaches an alt. of about 11,000 ft. It was discovered by Sir J. Ross, 1841, and was named after his vessel. It is situated in

TERRY, EDWARD O'CONNOR (1844-1912). British actor. Born in London, he went on the stage in 1863, and from 1868-75 was principal comedian at the Strand Theatre, London, making a special success in 1874 as Paul Pry in Poole's comedy of that name. He played at the old Gaiety Theatre, 1876-85, and in 1888 produced at the theatre called after his name *Pincro's sentimental comedy*, *Sweet Lavender*. Terry died April 3, 1912.



Edward Terry, British actor
Elliott & Fry

TERRY, DAME ELLEN ALICIA (1848-1928). British actress. Daughter of Benjamin and Sarah Terry, popular provincial actors, she was born at Coventry, Feb. 27, 1848, and at the age

of eight made her first appearance, as Mamilins, at the Princess's Theatre, London, in Kean's revival of *The Winter's Tale*. In 1864 she married the painter, G. F. Watts. This marriage was soon dissolved, and Ellen Terry returned to the stage in 1867, acting with H. Irving. In 1868 she married E. A. Wardell (Charles Kelly), and retired from the stage for six years. She joined the Bancrofts in 1875, and following this she became leading lady to Henry Irving, and began a long series of triumphs in Shakespearean and other characters. In 1902 Ellen Terry and Mrs. Kendal appeared in *The Merry Wives of Windsor*, under Tree, at His Majesty's. In 1907 she married an American actor, James Carew. In 1925 she was created G.B.E. She died July 21, 1928.



Dame Ellen Terry, British actress
Histed

TERRY, FRED (b. 1863). British actor. Born in London, Nov. 9, 1863, the brother of Ellen Terry, his first stage appearance was at the Haymarket Theatre in 1880. The next few years he toured with Ben Greet's and other companies, visiting America in 1885. Two years later he settled in London, and was successively in the companies of Tree, Forbes-Robertson, Alexander, and Irving. In 1900 he and his wife, Julia Neilson, produced *Sweet Nell of Old Drury* at The Haymarket. One of his greatest successes was as Blakeney in *The Scarlet Pimpernel*.

TERTIARY. Name of a period of geological time. It is sub-divided into the Eocene, Oligocene, Miocene, and Pliocene systems, and rocks of this period lie below the Quaternary, Pleistocene, and Glacial deposits, and above the Cretaceous. During the Tertiary period the climate over the world was comparatively mild, and even sub-tropical in N. latitudes, and huge animals, fishes, and amphibians flourished, more closely resembling existing species than those of the Cretaceous.

TERTULLIAN (c. 155-c. 230). Christian theologian, whose full name was Quintus Septimius Tertullianus. The son of a Roman centurion, he was born at Carthage, was well educated, and probably became an advocate.

Converted to Christianity about 190, he was ordained priest, and devoted his life to the defence of the faith. About 202 he adopted the Montanist heresy, and became the leader of this sect in Africa. Of his many works the chief is the *Apologeticum*.

TESCHEN. Town of Poland. It is known to the Poles as Cieszyn, and to the Czechs as Tesin. It stands on the right bank of the Olsa, a tributary of the Oder. Originally an independent principality, the duchy and town fell in 1625 to the crown of Bohemia, and to Austria in 1722. The treaty of peace which ended the war of the Bavarian succession was signed here, May 13, 1779. In 1920 the Teschen dist. was divided between Poland and Czechoslovakia, the town being given to Poland. Pop. 23,336. See Silesia.

TESLA, NIKOLA (b. 1857). American inventor. Born at Smiljan, Yugoslavia, in 1884 he went to America, became naturalized, and for a time worked for Thomas Edison. He discovered the rotary magnetic field which resulted in the multi- and polyphase systems of electric current transmission. Tesla invented a large number of electrical appliances and improvements, including the Tesla coil, oscillators, arc lamps, etc., and carried out some remarkable experiments.

TEST. River of Hampshire. It rises near Upton and flows S. past Stockbridge and Romsey into Southampton Water, near Totton. Near Fullerton it is joined by the Anton, and the united stream is sometimes known by that name.

Tetanus. Infective disease caused by the bacillus tetani. See Lockjaw.

TETANY. Spasmodic contraction of the muscles, most often of the hands and feet. It occurs in children suffering from rickets, and less frequently in adults after removal of the thyroid gland, or in the course of certain diseases. Treatment is directed towards curing the underlying cause.

TETBURY. Market town and urban dist. of Gloucestershire. Situated 10 m. S.W. of Cirencester, on the G.W. Rly., it marks the site of an ancient British camp. The church of S. Mary Magdalene replaced a Norman church. Market day, Wed. Pop. 2,146.

TETRADYMITE. In mineralogy, name given to a mineral, bismuth telluride. It is usually mixed with sulphur and selenium, and is found in Scandinavia, the U.S.A., etc. The mineral, which has a metallic, steel-grey lustre, is often associated with gold-bearing quartz.

TETRARCH (Gr. tetrates, four; archon, to rule). Ruler of one of four parts of a region. Losing its original meaning, the word came to be applied to minor rulers, and especially to the princes of Syria under the Roman emperors. Herod Antipas, to whom Christ was sent by Pilate, was tetrarch of Galilee (Luke 3, 1). See Herod.

TETRAZZINI, LUISA (b. 1874). Italian soprano singer. Born in Florence, she there made her first appearance in *L'Africaino* in 1895. Her first London appearance was in 1907. She sang at the Manhattan Opera House, New York, 1908, and thereafter her career was triumphal, both on stage and concert platform. Her voice was of extraordinary range and tone. In 1921 she published a volume of recollections, *My Life of Song*.



Luisa Tetrazzini, Italian singer

TETTENHALL. Urban dist. and parish of Staffordshire. Situated 2 m. W. of Wolverhampton, it possesses a fine church, S. Michael's, with monuments of the Wrottesley family. In the neighbourhood is Wrottesley Hall, the seat of Lord Wrottesley. Tettenhall College is a Nonconformist public school. Pop. 5,489.

TETUAN. Town on the N.E. coast of Morocco. It is about 6 m. from the bay of Tetuan, and is connected with its port, at the mouth of the Rio Martin, by a short rly. A rly. has been constructed from Tetuan to Ceuta, 25 m. Tetuan is the capital of the Spanish zone and the headquarters of the Moroccan khalifa, who rules under the control of the Spanish high commissioner. Pop. 24,000, of whom 4,500 are Jews and 6,500 Europeans.

TETZEL, JOHANN (c. 1460-1519). German friar. Born at Leipzig, he became a Dominican. He was employed in 1517 by the elector of Mainz as a seller of indulgences, half the proceeds being remitted to the pope as a contribution towards the cost of building St. Peter's. Luther denounced this sale of indulgences in his theses, Oct. 31, 1517. To these Tetzel replied, but with such extravagance as to involve himself in obloquy and disgrace, and he retired to the Dominican convent at Leipzig, where he died July 4, 1519. See Luther.

TEUCER. In Greek legend, first king of Troy. Teucri was an alternative name for the Trojans. Another Teucer was the half-brother of Ajax who fought on the Greek side at the siege of Troy. See Troy.

TEUTON. Name denoting a group of peoples, of the Caucasian or white race, whose languages constitute the Teutonic sub-family of Indo-European speech. The word Teutonic, used by the late Roman writers as synonymous with Germanic, is preferred in modern English because Germanic is liable to confusion with German, which has a narrower implication. It is derived from the tribal name of the Teutones, who lived probably in or near Jutland in the 2nd century B.C.

The Teutonic languages form one of the great divisions of the Indo-European family, also called the Germanic languages. Their chief characteristics are the sound-shiftings known as Grimm's and Verner's laws, the development of the weak and strong adjectival forms and of the preterite of weak verbs. Like other Indo-European languages, the Teutonic are inflexional.

TEUTONIC ORDER. Order of knight-hood established in 1198. Originating in the charity of some German merchants who established a hospital during the siege of Acre, 1190, it was formally constituted in Jerusalem, 1198. Membership was confined to Germans of noble birth. Although its headquarters for a century (1191-1291) were at Acre, the order carried out its greatest work in Germany, where it undertook the conquest of Prussia.

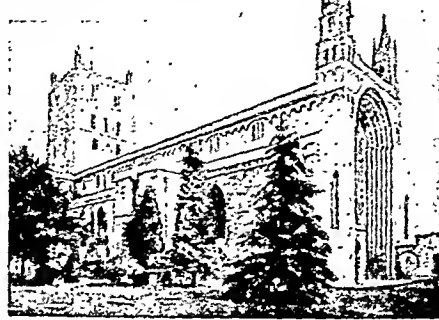
Acquiring political importance, the order ruled large districts on the borders of Poland and Russia, owing allegiance to no power save the pope. Its seat was moved to Marienburg in 1308, and for another hundred years the grand masters there held their court and ruled extensive territories. In 1526 its grand master Albert of Brandenburg became a Protestant and made the territories an hereditary grand duchy. The order continued to exist, with headquarters at Mergentheim, until 1809. See Knighthood; Prussia.

TEVIOT. River of Scotland, in Roxburghshire. It rises near the eo. boundary and joins the Tweed near Kelso, after a course of 37 m. There are salmon and trout fisheries. The valley is known as Teviotdale.

TEWFIK PASHA (1852-92). Khedive of Egypt. Son of Ismail Pasha, he was born Nov. 15, 1852, and in 1879 succeeded his father, who had been deposed. The confusion into which Ismail's policy and extravagance had thrown the country necessitated the intervention of Britain and France. This foreign influence occasioned the rising in 1882 of Arabi Pasha, who was defeated at Tel-el-Kebir (q.v.). In 1884, at Baring's persuasion, Tewfik evacuated the Sudan. He died Jan. 7, 1892.

TWESKESBURY. Mun. bor. and market town of Gloucestershire. On the Avon, near the Worcestershire border and 10 m. N. of Gloucester, it has a station on the L.M.S. Rly. Its church, once the church of the great Benedictine abbey here, is one of the finest Norman buildings in England. The central tower, N. porch, and W. front are perfect examples of the style. Other buildings of interest are the grammar school, founded in 1576, the town hall, corn exchange, and Tolsey Hall. There are also many fine old houses in the town, which figures as Nortonbury in John Halifax, Gentleman. Market day, Wed. Pop. 4,704.

The battle of Tewkesbury was fought May 3, 1471.



Tewkesbury. Church of the old Benedictine Abbey, a notable example of Norman architecture

during the Wars of the Roses. In it the Lancastrians were routed and their cause lost, and Queen Margaret was captured and her son Edward was killed.

TEXAS. Largest state of the U.S.A. In the S. of the country, it has about 400 m. of coastline on the gulf of Mexico. Its area is 265,900 sq. m. A series of low, sandy islands lie along the coast. The chief rivers are the Red, Sabine, Trinity, Brazos, Colorado, Guadalupe, Pecos, and Grande, the last named separating the state from Mexico. Agriculture and stock-raising are the staple industries, and as a cotton growing state Texas takes the lead. The forests, about 47,000 sq. m. in extent, yield yellow pine and oak. Austin is the capital. Pop. 5,487,000.

Texas was settled in the 17th and 18th centuries by Spaniards, taking its name from an Indian tribe. When Mexico declared itself an independent state in 1821, Texas was included therein. Texas was a republic from 1836 until 1845, when the Texans entered the union. The question of the boundary between the new state and Mexico led to the Mexican war of 1846.

TEXEL. Island of the Netherlands, in the West Frisian group. To the N. of the island is the dist. called Eijerland, or Land of Eggs, from the large numbers of sea-birds' eggs. De Burg is the chief town. Off Texel the English fleet, under Monk, defeated Tromp, July 31, 1653. Its area is 71 sq. m. Pop. 7,378.

THACKERAY, WILLIAM MAKEPEACE (1811-63). British novelist. He was born at Calcutta, July 18, 1811, and was educated at Charterhouse from 1822-28, and later at Trinity College, Cambridge. In 1833 he purchased The National Standard, which he edited for the few months it survived, and in 1836 he went to Paris as correspondent for the short-lived Constitutional. He wrote a good deal in those early days for Fraser's Magazine, to which he contributed stories, essays, verses, caricatures, art criticism, and reviews.



W. M. Thackeray, British novelist. After Samuel Laurence

Somo of these appeared in volume form, notably The Paris Sketch Book, 1840. He became known to a wider public by his contributions to Punch, especially the sketches on snobs and on Jeames.

Fame in the broader sense came to Thackeray with the publication of Vanity Fair, which was issued in monthly parts during 1847-48. Pendennis appeared 1848-50, and Esmond was published in three vols. in 1852. In 1852 Thackeray went to the U.S.A. to deliver lectures on The English Humourists of the 18th Century, which he had already given in England. On his return he published The Newcomes, 1853-55. In 1855, in which year was issued The Rose and the Ring, he went again to America to lecture on The Four Georges, which series he presently gave in London and the provinces. He then wrote The Virginians, 1857-59. The Cornhill Magazine was founded in 1860, and to it he contributed Lovel the Widower, 1860, Philip, 1861-62, and many delightful Roundabout Papers, 1860-63. The fragment, Denis Duval, appeared posthumously. 1864. Thackeray died on Christmas Eve, 1863.

THAIS. Athenian courtesan. She is said to have accompanied Alexander the Great on his Eastern campaigns, and to have persuaded him, during a drunken bout, to set fire to the old palace of the Persians at Persepolis, by way of reprisal for the destruction of Athens by Xerxes. Dryden's ode, Alexander's Feast, 1697, describes the event.

THALER. German silver coin. First struck at Joachimsthal, Bohemia, about 1519, it was current in Germany until the 19th century, and was the unit of the German monetary union until 1873, when it was replaced by the mark. The word dollar is a modern corruption.

THALES (640-550 B.C.). Greek philosopher, one of the seven wise men of ancient Greece. Born in Miletus, Asia Minor, and supposed to be of Phoenician descent, he was the first human being, so far as is known, to suggest a scientific as opposed to a mythological explanation of the universe. Thales held that water was the all-pervading principle of the universe, and that all material substances were variants of water. He also held that the universe is a living creature. Thales is regarded as the pioneer in the sciences of geometry and astronomy among the Greeks.

Thalia. In Greek mythology, one of the nine Muses, whose province was pastoral poetry and comedy. See Muse.

THALLIUM. One of the rare metallic elements. Its chemical symbol is Tl, atomic weight 204.39; atomic number 81. It is found in small quantities in iron and copper pyrites, in copper and silver ores as thallium selenide, and in certain mineral waters and rare earths. It is a soft, lead-like metal which oxidises easily on exposure to the atmosphere. All the compounds are extremely poisonous.

Thallophyta. Division of plant life which includes the two sub-divisions the algae and the fungi. See Algae; Fungus.

THAME. Market town and urban dist. of Oxfordshire. It stands on the Thame, 12 m. from Oxford, on the G.W. Rly. The chief building is the church of St. Mary the Virgin, mainly Early English, with some remarkable tombs and other monuments. There is a town hall and a grammar school founded by Lord Williams of Thame (d. 1559). Thame Park is a fine house standing in a large park. Market day, Tues. Pop. 2,918. Pron. Tame.

THAMES, THE (Lat. Tamesis or Tamisis). Longest and most important river in England. It rises on the E. side of the Cotswolds in four headstreams: Thames or Isis, Churn,

however, the Thebans ejected their Spartan masters and entered on the struggle for independence, and Epaminondas led her troops to victory over Sparta at Leuctra in 371 B.C.

Though Thebes could not maintain her supremacy, she joined with Athens in resisting Philip of Macedonia, but the allied troops were crushed at Chacrona in 338 B.C. After Philip's death she revolted against Alexander the Great, bringing on herself final destruction in 336 B.C. Nothing was left standing except the temples and the house of Pindar the poet.

THECLA. Saint and virgin of Asia Minor. A member of a noble family, she lived in Iconium, Lycaonia, and was there converted by S. Paul. She was much persecuted for her faith, but is said to have lived to the age of 90, dying in Seleucia.

THEEBAW (d. 1916). King of Burma, 1878-85. Son and successor of Mindon, Theebaw inaugurated his reign by murdering all his relations who might jeopardise his power. Bad government and neglect of obligations soon strained his relations with Britain, and war was declared, Nov. 9, 1885. An expeditionary force entered Burma, and on Nov. 26 Theebaw submitted, the country being annexed by Great Britain, Jan. 1, 1886. The ex-king was sent to India, where he died Dec. 16, 1916. See Burma; Mandalay.

THEFT. Compendious term which covers many forms of acquiring property dishonestly. It is properly confined to the taking of money or goods, or securities for money or goods, feloniously. The most common form of theft is the taking away of the property of another.

Another form is where a person has property committed to his possession and, with intent to defraud, appropriates it to his own use. When a servant takes his master's property out of his master's premises (e.g. money out of the till) it is larceny; but where, having received money on behalf of his master, he fraudulently appropriates it, it is embezzlement. See Larceny.

THEISM. In the widest sense, a term denoting a belief in the existence of a Divine Being or Beings. Theism may thus include both polytheistic and pantheistic conceptions of religion. In modern usage, however, the word has acquired a much more definite connotation. It is not only restricted to monotheism, but it implies as well a certain relationship between God and the universe. In this technical sense, theism is the belief in an infinite eternal spiritual Personality who is perfect in goodness and beauty, who is immanent in the universe yet infinitely transcends it. There are only three types of pure theism in the history of religion—Judaism, Christianity, and Islam. See Christianity; Deism; Theology.

THEISS, TISZA, or TISA. River of Central Europe, formerly entirely within Hungary. It rises in Ruthenia, Czechoslovakia, flows S. and then W., and then passes into Hungary to form, at its bend at Csap (Cap), part of the boundary between Hungary and Czechoslovakia. It then flows past Senta (Zenta) to join the Danube below Titel. The river has a very tortuous course, estimated to exceed 800 m. in length. Pron. Tice.

THELUSSON, PETER (1737-97). British merchant. Born in Paris, June 27, 1737, son of the envoy of Geneva, he settled in London in 1762, and was naturalised. He acquired an immense fortune in trading with the Continent and the West Indies, and died July 21, 1797. His son Peter Isaac was created Baron Rendlesham in 1806.

Thellusson, after making some provision in his will for his wife and children, left instructions for the residue of his estate to accumulate during the lives of his three sons and of their sons, and for the fortune thus accumulated to go to the eldest male descendant of his sons.

This will was established, but the public disadvantage inherent in its principle led to the passing of the Accumulations Act of 1800. Pron. Tel-lus-on.

THEMIS. In Greek mythology, daughter of Uranus and Ge, the wife of Zeus before Hera. Among her children by Zeus were the three Horae or Hours and the Fates. Themis was the personification of law and order and presided over the oracle at Delphi before Apollo. Pron. Themmis.

THEMISTOCLES (c. 514-449 B.C.). Athenian statesman. Realizing the capacity of Athens for maritime development, he foresaw that imperial ascendancy would follow upon naval supremacy. Themistocles procured the ostracism or exile of the conservative leader Aristides in 483, and secured the direction of Athenian policy.

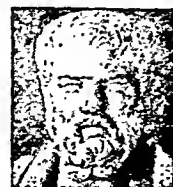


Themistocles, Athenian statesman

When the Persians invaded the Greek peninsula in 480 their fleet was annihilated at Salamis by the Greek fleet under Themistocles. In 479 the diplomacy of Themistocles compelled Sparta to advance to the protection of Attica and fight against the Persians at Plataea (q.v.). He carried through the re-fortification of the Piræus before Sparta could prevent it; and from this time the Athenian naval supremacy was assured. In 471 B.C. he was charged with peculation, and was expelled from Athens. In his exile he was accused of treasonable intrigues with Persia. In Athens it was believed that he took poison through despair at the failure of his schemes. See Greece. Pron. Themiss-tokleez.

THEOBALD'S PARK. Mansion and park in Hertfordshire, England. The mansion, of red brick, built 1765-70, is 1 m. W. of Waltham Cross, and at one of the park entrances old Temple Bar (q.v.) was re-erected in 1888. The famous palace of Theobalds, built by Burghley, stood 1½ m. N.W. The remains of the palace disappeared in 1765. It gave its name to Theobald's Road, which runs from Southampton Row to Gray's Inn Road, London. Pron. Tibbalds.

THEOCRITUS (c. 270 B.C.). Greek poet. Born at Syracuse, he lived for a long time at Alexandria at the court of Ptolemy Philadelphus. A rude poetry in the Dorian dialect had been characteristic of the shepherds and rustics of his native Sicily, but Theocritus was the first to raise such poetry to the dignity of literary form. His poems abound in passages of exquisite beauty, and show much dramatic skill. Some 30 extant poems known as Idylls (Gr. eidyllia, little pictures) are attributed to Theocritus. He has had many imitators, Virgil's Eclogues being closely modelled on the Idylls. Among later imitators are Spenser and Milton. There is a prose translation by Andrew Lang; also one by Edmonds, in the Loeb Classical Library.



Theocritus, Greek pastoral poet From a bust

THEODOLITE. Instrument for measuring horizontal and vertical angles, although some of the simpler forms measure only horizontal angles. It is commonly employed in surveying to obtain a system of triangles in a horizontal plane and the positions of objects within the triangles. When altitudes are measured separately, they are generally applied to give corrections by calculation to chain or other actual measurements upon the surface.



Theodolite, Instrument used by surveyors By courtesy of Negretti & Zambra

The instrument consists of a small telescope mounted to turn about a vertical axis passing through the centre of a horizontal graduated circle, and also about a horizontal axis, so that it may be set at any elevation. If fitted with a vertical graduated circle in which the telescope can be rotated, it is called a transit theodolite. See Surveying; Transit Circle.

THEODORA. Name of two Byzantine princesses. (1) Wife of Justinian I. Born in Cyprus or Constantinople, she was in turns actress, courtesan, then mistress and wife of Justinian. She had great influence over her husband and took a prominent part in politics and religious affairs.

(2) Wife of the East Roman emperor Theophilus. After his death, 842, she administered affairs for her infant son Michael III. In opposition to her husband, she was a supporter of the worship of images, which was definitely restored at a synod convened by her at Constantinople.

THEODORIC (c. 454-526). King of the Ostrogoths, called the Great. He was born



Theodora (centre), wife of Justinian I. From contemporary mosaic in the church of S. Vitale, Ravenna

in Pannonia, the son of Theodemir, by whom he was sent at an early age as a hostage to Constantinople. On succeeding his father as king of the Goths in 473 he received signal marks of favour from the East Roman emperor Zeno, who gave him permission to attack Odoacer in Italy. The treacherous murder of the latter left Theodoric master of that country, which he ruled nominally as Zeno's viceregent, but in reality as an independent sovereign. During his 33 years of rule Italy was at peace, and consequently prospered exceedingly. He died Aug. 30, 526, and was buried at Ravenna in a splendid mausoleum, which is still to be seen.

THEODOSIUS. Names of Roman emperors of the East. Theodosius I was born

in Spain, the son of Theodosius, a general of Valentinian I. He served under his father in Britain, and as commander-in-chief in Moesia defeated the Sarmatians in 374. In 379 he was called to the eastern throne by Gratian, the emperor of the West, just after the disastrous defeat of the Romans by the Goths at Adrianople. Theodosius was equal to the emergency, and by 382 had cleared the Balkan peninsula of the Goths. The reign of Theodosius was marked by the complete triumph of orthodox Christianity. Both Theodosius and Gratian were dominated by S. Ambrose, and the result was seen in the many enactments prohibiting both pagan and heretical worship in both sections

of the empire. Theodosius, by punishing with unnecessary severity a riot in Thessalonica, incurred the displeasure of the great churchman, and had to do penance. Theodosius died at Milan, Jan. 17, 395.

Theodosius II succeeded his father Arcadius at the age of seven, being placed under the guardianship of his sister Pulcheria. His name is chiefly associated with the code of laws, *Codex Theodosianus*.

THEOGNIS (c. 540-500 B.C.). Greek elegiac poet. He was a native of Megara, in Attica. A collection of some 1,400 verses to which his name is attached contains a bitter attack upon the bad citizens, the democrats, who are contrasted with the good, the aristocrats. Most of the poems are addressed to a young Megarian noble named Cynus and in addition to a number of *gnomes* or sententious maxims, sing the praises of wine and club life. Much of the collection is of later date.

THEOLOGY. Science which deals with our knowledge of the nature of God and His relation with the world. There may be deep religious experience without any highly developed theology, but some kind of belief about the meaning of the world and the character of the Divine is implied in all forms of religion. Every religion, therefore, has a theology, explicit or implicit. The aim of theology is to give a coherent account of religious beliefs, to indicate their relations with one another, and to bring them into harmony with the general knowledge and thought of the time.

There is a close connexion between theology and philosophy. Both agree in attempting to interpret the meaning of the world as a whole. Theology, however, although it pursues rational methods, lays stress on the importance of revelation, in which it finds its most significant material for the solution of the problems which it has in common with philosophy, and a large part of its task consists in interpreting revelation and vindicating its claim.

A common distinction is made between natural and revealed theology. The truths of natural theology are those which are attainable by the human reason and may be reached by philosophy. Other truths which, though not contrary to reason, are not discoverable by its unaided power are said to belong to revealed theology.

THEORBO. Large lute with a double neck, having two sets of tuning pegs. The lower set applied



Theorbo of the 17th century

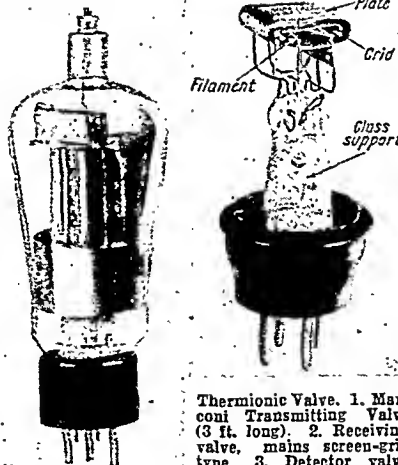
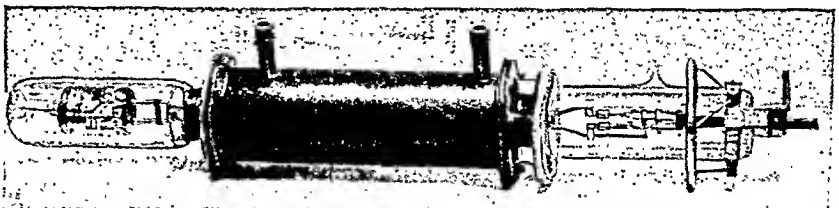
onwards are in part derived. Paracelsus, Giordano Bruno, and above all Jacob Boehme, were prominent theosophists.

In a narrower sense the term is generally applied to a system propagated by H. P. Blavatsky and H. S. Olcott, who founded the Theosophical Society in 1875 in the U.S.A.

It aims at establishing a universal brotherhood by showing the unity of all religions, especially in their esoteric teaching, manifested by occult phenomena. See *Besant, A.*

THEOTOCOPULI, DOMENICO, known as *El Greco* (c. 1547-1614). Greco-Spanish painter. Born at Candia, Crete, he studied at Venice under Titian, and painted portraits and religious pictures in Rome. Settling in Spain about 1577, he worked at Toledo as painter, architect, and sculptor until his death in that city, April 7, 1614. *El Greco* anticipated modern impressionism by his use of cold white, blue, and grey colour-schemes, and by his sacrifice of truth of drawing to emotional effect. The *Burial of the Count of Orgaz*, painted 1578, is considered his masterpiece. See *illus. p. 203.*

THERM. In physics, name given to the British thermal unit of heat, generally abbreviated B.T.U. It is the amount of heat required to raise one pound of water at its maximum density through 1° F. The calorie (q.v.) is the corresponding metric unit of heat. A therm equals nearly 252 calories. The gas therm, by which gas is charged to consumers, is equal to 100,000 B.T.U. See *Gas; Heat.*



Thermionic Valve. 1. Marconi Transmitting Valve (3 ft. long). 2. Receiving valve, mains screen-grid type. 3. Detector valve with outer wall removed

THERMIONIC VALVE. Instrument largely used in telegraphy and telephony, especially wireless. The triode or three-electrode valve consists of an exhausted glass bulb containing (a) a metal wire, the filament, (b) a metal plate, the anode, and (c) a wire network, the grid, placed between the anode and the filament. When the filament is heated (e.g. by current from a battery) electrons are given off, and if another battery is connected between filament and anode a current can then be sent from the anode through the bulb to the filament. This electron stream has to pass through the grid, by varying the potential of which as regards the filament the strength of the anode current can be controlled. Valves are employed as transmitters and receivers in wireless telegraphy and telephony, and as sensitive relays in the ordinary telegraphy and telephony systems.

The diode, or two-electrode valve, was invented by Fleming in 1904. It contained

a filament and a plate. The three-electrode valve was patented by Lee de Forest in 1906. In 1907 de Forest patented his amplifying circuit, in which the incoming signal impulses were caused to vary the grid potential of the valve, and so to cause much greater changes in the strength of the anode current. In 1913 Franklin coupled grid circuit and plate circuit, making use of regeneration or reaction, energy thus being fed back from anode circuit to grid circuit. Meissner (1913) utilised a similar arrangement to obtain continuous oscillations from the valve, so that it functioned as a generator. See *Amplifier; Grid; Reaction; Wireless.*

THERMIT. Mixture of magnetic iron oxide and aluminium powder used for the production of high temperatures. The mixture is placed in a crucible and the reaction started by means of a priming of barium peroxide and aluminium powder, into which a piece of magnesium ribbon is inserted and fired. A very violent reaction takes place, and a temperature of about 3,000° C. is obtained. The compound is used for welding iron or steel rails together, and can be employed in situ. It is also employed for repairing steel castings which have defects in them.

THERMODYNAMICS (Gr. *thermē*, heat; *dynamis*, power). Science which deals with the relations between heat and work. There are two fundamental laws of thermodynamics. The first states that a definite quantity of heat is absorbed for each unit of work produced, and conversely that a definite quantity of heat is produced by a given quantity of work. The second law states that it is impossible to convey heat from one body to another at a higher temperature by the agency of a purely self-acting machine. In other words, heat energy of itself always passes from high to low temperature. See *Carnot, L.N.M.; Heat; Joule; Specific Heat.*

THERMO-ELECTRICITY. Study of electric currents caused by heat. Seebeck, in 1822, noticed that when a circuit was formed of two or more different conductors and the junctions of the conductors were at different temperatures, an electric current was produced varying in strength with the differences in temperature. Such a junction is called a thermo-couple. By coupling up alternate strips, say, of antimony and bismuth, an instrument known as the thermopile is formed, enabling very small temperatures to be measured.

THERMOGRAPH. Self-registering thermometer. The movements of the thermometer are registered on a clockwork revolving drum, sometimes by a pen which traces a curve, and sometimes photographically.

THERMOMETER. Instrument for measuring temperature. Its invention is probably due to Galileo. Fahrenheit introduced the alcohol thermometer in 1709. In 1714 Fahrenheit used mercury, and fixed the freezing point of water and its boiling point as two points in his scale, dividing the distance between them into 180 degrees. This is the thermometer now most commonly used in Great Britain, the U.S.A., etc. Réaumur, in 1731, divided the difference between the freezing and boiling points of water into 80°, and this type of thermometer is still in use on the Continent. The centigrade thermometer,

due to Celsius in 1742, calls the freezing point of water 0° and the boiling point 100°, and is the thermometer most used by scientists.

The ordinary mercurial thermometer consists of a long capillary sealed glass tube terminating in a glass bulb. The bulb and the lower part of the tube contain mercury, the upper part of the tube being a vacuum.

CONVERSION OF SCALES. To convert centigrade readings into Fahrenheit, multiply by 9 and divide by 5. Then add or subtract 32, according as the degrees are positive or negative. To convert Réaumur to Fahrenheit, multiply by 9 and divide by 4. Then add or subtract 32 as above. See Bolometer; Heat; Hygrometer; Pyrometer; Temperature.

THERMOPYLAE. Pass in Greece, leading into Thessaly. It afforded the only passage for an army from N. to S. Greece, and an heroic effort was made to hold it in 480 B.C. against the Persians by a small Greek force of some 1,000 men under Leonidas, king of Sparta. As the result of treachery, the Persians were enabled to take the Greeks in the rear, who were all killed. Pron. Ther-moppy-lee.

THERMOSTAT. Automatic apparatus or instrument for regulating temperatures, or for giving warning of an undue rise of temperature. It is particularly a device in which the expansion of a metal or a volume of gas acts directly or indirectly through an electric circuit upon an alarm, or, in another type of apparatus, to control a source of heat. It is used in conjunction with fire alarms, for regulating the positions of furnace dampers, controlling steam pressures, etc. In some types of incubator the temperature is regulated by a thermostatic capsule. See illus. p. 764.

THERSITES. In Greek legend, the ugliest man in the Greek army before Troy. He is represented as a man of the people who delighted in disputing with his superiors. Pron. Ther-sight-eez.

THESEUS. In Greek legend, the great hero of Attica and Athens. The unacknowledged son of Aegeus, king of Athens, he was brought up at Troezen by his mother, Aethra, who gave him his father's sword and sent him to Athens. Acknowledged by Aegeus as his son and successor, he slew the bull of Marathon, went to Crete and, helped by Ariadne, killed the Minotaur. On the death of Aegeus, Theseus became king of Athens. He led an expedition against the Amazons, married their queen, Hippolyte, who bore him Hippolytus. Failing to carry off Persephone from Hades as a wife for Peirithous, Theseus was confined in Hades until released by Hercules. On returning to Athens he found that Helen's brothers, Castor and Pollux, had recovered their sister. Theseus retired to Seyros, and was there murdered by Lyeomedes. His alleged bones were brought to Athens in 469 B.C., and a temple was built to receive them. See illus. p. 965.

THESPIA (6th century B.C.). Founder of the Greek drama. He was born at Icaria in Attica, an early seat of the religious worship of Bacchus, in the drunken festivals connected with which Athenian tragedy and comedy originated. In order to give the Dionysian chorus some rest Thespis introduced an actor into these exhibitions, devising a linen mask so that the actor might sustain more than one character. He invented the prologue and the dialogue of Greek drama, while by placing the actor upon a table so that he might be on an

equal elevation with the chorus ranged upon the steps of the altar of Bacchus, he introduced the earliest form of stage. See Drama.

THESSALONIANS, EPISTLES TO THE. Two of the Epistles of S. Paul, usually grouped by themselves as being the earliest of his writings. S. Paul visited Thessalonica, the modern Salonica, on his second missionary journey, and made many converts there; but the opposition of the Jews necessitated a hurried withdrawal to Berea. Later he sent Timothy to Thessalonica, and on his return the apostle wrote from Corinth the First Epistle to the Thessalonians. The Second Epistle was written from the same place, not long after the first, which it resembles closely, and both belong to the year A.D. 52 or 53.

THESSALY. District of N. Greece, between Epirus and the Aegean Sea. It consists mainly of the basin of the river Salambria (Peneus), a depression roughly circular in shape and about 70 m. across, almost entirely surrounded by mts. The central plain produces much grain, and was famous in antiquity for horse-breeding. In the S.E. the peninsula of Magnesia encloses the land-locked gulf of Volo. Most of Thessaly was ceded by Turkey to Greece in 1881, and in 1897 it was the chief scene of the Greco-Turkish War.

THETFORD. Borough and market town of Norfolk. It lies at the junction of the Thet and the little Ouse, 14 m. N. of Bury St. Edmunds, on the L.N.E. Rly. Formerly the capital of the kingdom of East Anglia and the seat of a bishop, it has ruins of a Cluniac priory, 1104, and a Dominican friary, 1340. The principal trades are brewing and tanning; there are also an iron foundry and agricultural machinery works. Market day, Sat. Pop. 4,706.

Thetford Mines. City of Quebec. It is 76 m. S. of Quebec. There are asbestos and chrome iron mines. Pop. 7,886.

THETIS. In Greek mythology, one of the Nereids, or sea-nymphs. She was the wife of Peleus and the mother of Achilles. See Achilles; Paris; Peleus.

THEYDON. Name of three parishes in Essex, all near Epping. A fourth Theydon has long been known as Coopersale. Theydon Bois (pron. Boys) has a station on the L.N.E. Rly. Theydon Garmon (or Theydon Gernon) church, All Saints', has a brick tower dating from 1552. Theydon Mount church, S. Michael's, was built in 1600.

THIEPVAL. Village of France. It is on the Ancre river, 4½ m. N.N.E. of Albert. The village, destroyed during the Great War, was prominent in the battles of the Somme (q.v.). A lofty stone tower was dedicated here as a war memorial to the Ulster Division.

THIERS, LOUIS ADOLPHE (1797-1877). French statesman and historian. Born at Marseilles, April 16, 1797, he studied law at Aix, and becoming an advocate made his way to Paris. After the revolution of July, 1830, Thiers proposed Louis Philippe as successor to Charles X. Taking office under his friend Lafitte, the banker, he made his mark as a debater and financier, and from 1832-36 as minister of the interior took drastic measures against the revolutionaries. President of the



Adolphe Thiers, French statesman
After Bonnat

council for short periods in 1836 and 1840, when his foreign policy brought Europe to the verge of war, he was in active opposition till the revolution of 1848. In Dec., 1851, he was arrested and exiled, but though he returned to Paris in Aug., 1852, he did not re-enter politics till 1860. After

the fall of the empire, Sept., 1870, Thiers was elected to the Assembly by 26 departments.

As president of the executive government he faced the tremendous task of reorganizing France. Virtual dictator, he used his power wisely in the true interests of peace, but in May, 1873, he was driven from office by a coalition. Thiers died Sept. 4, 1877. As an historian Thiers won a high reputation by his *History of the French Revolution*, followed by his *History of the Consulate and Empire*.

THIRD PARTY. Term used in English law. Where there are two persons in a definite relation to each other, and someone else is brought on the scene, the latter is spoken of as the third party. Thus, if a principal and his agent are the two parties spoken of, and the agent introduces someone to do business with his principal, this last person is a third party.

An Act of 1930 making important changes in the law about motor vehicles enacted compulsory insurance against third party risks.

THIRLMERE. Lake of Cumberland. Lying under Helvellyn, 5 m. from Keswick, it is a narrow sheet of water about 3½ m. long. The lake is the source whence Manchester obtains its water. The aqueduct is 106 m. long. See Cumberland; Lake District.



Thirlmere. The Cumberland lake after it had been made the reservoir for Manchester

THIRLWALL, CONNOP (1797-1875). British divine and historian. Born at Stepney, Jan. 11, 1797, he was educated at the Charterhouse and Trinity College, Cambridge. A precocious child, his university career was very brilliant. Having been ordained, he became, in 1832, a tutor at Trinity; but he resigned in 1834 because he had expressed himself in favour of the removal of religious tests. In 1840 he became bishop of St. David's, and remained in Wales for 34 years. He died July 27, 1875, and was buried in Westminster Abbey. Thirlwall's *History of Greece, 1835-47*, is a standard work.

THIRSK. Market town of Yorkshire (N.R.). It is 22 m. from York, on the L.N.E. Rly. S. Mary's church is a beautiful Perpendicular building. There is an agricultural trade and works for making agricultural machinery; also flour mills and tanneries. Market day, Mon. Pop. 2,755.

THIRTY-NINE ARTICLES, THE. Colloquial term for the Articles of Religion printed at the end of the Anglican Book of Common Prayer. They constitute a formulary of faith such as was found necessary by all Protestant bodies in the 16th century, and were accepted by Parliament in 1571. They have to be subscribed by all candidates for ordination, are regarded as binding on the lay members of the Church of England, and form part of the statute law of England. Until 1871 subscription to them was obligatory on all taking degrees at Oxford and Cambridge.

The declaration which precedes the Thirty-Nine Articles was drawn up by Laud in 1628, and enjoins their interpretation in a literal and grammatical sense. See Church of England.

THIRTY YEARS' WAR. THE European war which raged over almost all Germany from 1618 to 1648. In 1618 Bohemia rejected the succession of the emperor Ferdinand to its crown, which it offered to Frederick, the elector palatine, who was a Protestant. His acceptance opened the war. In its first phase it was a contest for the crown of Bohemia. The Protestants failed to combine in support of Frederick, who suffered a heavy defeat in Bohemia, Nov. 8, 1621, and was driven out of the Palatinate.

James I of Great Britain made an attempt to assist Frederick, who was his son-in-law, but no good came either of his diplomacy or of the expedition of 1625. The king of Denmark then intervened to save the Protestant cause, but he was defeated by the emperor's army led by Tilly. Wallenstein raised an army which acted independently of the one led by Tilly, and together the two dominated the land. In these circumstances Ferdinand felt able to issue the edict of restitution ordering all land taken by Protestant princes to be restored to the Church.

In 1630 Wallenstein was deprived of his command, and in the same year Gustavus Adolphus, king of Sweden, landed in Pomerania to champion the Protestant cause. For a time he was held inactive by the persistent abstention of Saxony and Brandenburg; he was thereby prevented from saving the city of Magdeburg, which was sacked, May 20, 1631. At last Brandenburg and Saxony joined him and Gustavus defeated Tilly, who was killed a little later, at Breitenfeld, and Ferdinand was compelled to call Wallenstein from his retirement. Gustavus met Wallenstein at Lützen, Nov. 16, 1632, and fell there, but the Swedes won the victory.

From this time the war became a chaos. The Swedes, no longer led by an idealist, were mainly concerned with the acquisition of territory; France joined the combatants and sought to turn the German war to account by the extension of her own borders. German princes, great and small, were more interested in personal aggrandisement than in the common cause, whether of Protestantism or of Roman Catholicism.

In 1648 the war was ended by the treaty of Westphalia, which left German lands in the possession both of Sweden and of France, and to some extent redistributed the territories of German princes. One of its effects was to weaken greatly the Holy Roman Empire.

Thïsbe. In Babylonian legend, heroine of the love tragedy of Pyramus (q.v.) and Thïsbe.

THISTLE. Common name applied to many prickly plants, but more strictly to those of the genus *Carduus* of the order Compositae.



Thistle. Flower of the red musk thistle.

These are perennial or biennial herbs, forming large rosettes of spiny leaves the first year, and developing prickly stems the second year.

The most striking species are the musk thistle, with large, drooping, musk-scented crimson flowers, and the spear thistle (*C. lanceolatus*), with long spines to the large, lance-shaped leaves and purple flowers. The field thistle (*C. arvensis*), with thick creeping underground stem and dark purple flowers, is one of the greatest pests of agriculture. See Carline Thistle; Cotton Thistle.

THISTLE, ORDER OF THE. Scottish order of knighthood. It was founded in 1687, and consists of the sovereign and 16 knights. The knights wear a collar of thistles, alternating with double sprigs of rue in saltire in their proper colours and pendant therefrom a golden star of eight rays, called the glory. Thereon is

the figure of S. Andrew. The ribbon is green and the motto is *Nemo me impune lacessit* (No one attacks me with impunity). The order has a dean and a chapel in S. Giles's Cathedral, Edinburgh. See Knighthood.

THOMAS. One of the twelve apostles. His name, which, like his Greek designation Didymus, means twin, is really an epithet, and his proper name is said to have been Judas. He showed courage in calling on the other apostles to follow Our Lord into Judaea (John 11, 16), and although he would not believe the resurrection without ocular demonstration, yet, when that was granted, he made a confession of faith (John 20, 19-29). According to tradition he preached in Parthia and was buried at Edessa. Later stories make him the founder of a church in India. His day is Dec. 21.



Albert Thomas, French politician

L'Humanité on the foundation of that paper in 1904. In 1910 he was elected to the chamber of deputies. On May 21, 1915, he was made under-secretary of state for artillery and munitions.

After the armistice, Thomas steadfastly opposed the interference of French troops in the internal affairs of Russia, but recommended economic intervention. He was one of the earliest advocates of the League of Nations, and in 1920 he was appointed head of the labour section of the League.

THOMAS, ARTHUR GORING (1850-92). British composer. Born near Eastbourne, Nov. 20, 1850, he studied music in Paris and at the Royal Academy of Music, London, 1877-80. His operas include *Esmeralda*, produced at Covent Garden, 1883; *Nadeshda*, 1885; and the comic opera, *The Golden Web*, posthumously produced in 1893. His choral ode, *The Sun Worshippers*, was first performed in 1881, and his lyric gift was well displayed in a number of successful songs. Thomas committed suicide, March 20, 1892.

THOMAS, BRANDON (1849-1914). British playwright. Born in Hull, he worked as a clerk in Liverpool and Hull before going on the stage in John Hare's company in 1879. He acted in comedy parts in England and the U.S.A., but was more successful as a playwright. His greatest triumph was with his farce, *Charley's Aunt*, produced in 1892. Among his other plays were *Comrades*, 1882; *The Colour-Sergeant*, 1885; *Women Are So Serious*, 1901; and *A Judge's Memory*, 1906. He died June 19, 1914.



J. H. Thomas, British politician

THOMAS, JAMES HENRY (b. 1875). British politician. Born in Wales, Oct. 3, 1875, he was educated in elementary schools, and entered the service of the G.W. Rly. Having made himself a leader among his fellows,

he was elected organizing secretary of the amalgamated society for railway servants, from which he passed to be general secretary of the national union of railwaymen.

In 1910 Thomas was chosen M.P. for Derby in the labour interest, and in 1917 he was made a privy councillor. He took a leading part in all the negotiations about railway strikes, actual or threatened. In 1920 he was president of the trades union congress. In 1924 Thomas was colonial secretary, and in 1929 he was chosen lord privy seal and minister to deal with unemployment. In 1930 he became secretary for the Dominions.

THOMAS, PHILIP EDWARD (1878-1917). British poet and nature writer. Born in London, he was educated at St. Paul's School and at Lincoln College, Oxford. In 1897 appeared his first book, *The Woodland Life*. His volumes of essays include *Horae Solitariae*, 1902; *Rest and Unrest*, 1910; and *Light and Twilight*, 1911. Among his biographies are those of Richard Jefferies, 1909; Swinburne, 1912; and Walter Pater, 1913. Later works are two remarkable volumes of verse, *Poems*, 1917; and *Last Poems*, 1918; a collected edition appearing in 1920. Thomas was killed in France, April 9, 1917.

THOMAS THE RHYMER OR THOMAS RYMOUR (fl. c. 1270). Scottish seer and poet. He lived at Erceuldoune, now Earlsdon, in Berwickshire, whence he is also called Thomas of Erceuldoune. He is supposed to have foretold the death of Alexander III.

According to legend, Thomas was beloved of an elf queen, by whom he was carried off to Elfland, returning with the gift of prophecy.

THOMOND. Ancient dist. of Ireland. It covered the N. part of Munster. It gave its name to the earldom of Thomond, a title dating from 1543 and borne by the family of O'Brien. On the death of Henry, 8th earl, in 1741, the title became dormant. Revived in 1756, the line again failed in 1774, and the marquessate of Thomond, created in 1800, died out in 1855. See Munster.

THOMPSON, FRANCIS (1859-1907). British poet. Born at Preston, of Roman Catholic parents, Dec. 18, 1859, he was educated at Ushaw College.



Francis Thompson, British poet
Elliot & Fry

He then studied medicine in Manchester, but, failing to qualify, he settled in London, where for some time he was in great straits. Two poems written on scraps of paper were accepted by Merrie England, whose editor, Wilfred Meynell, set himself to rehabilitate the poet. Further poems appeared, and Thompson also wrote a considerable amount of literary criticism. His poems include *The Hound of Heaven*, which achieved wide popularity, *The Mistress of Vision*, and *Anthem of the Earth*, all three of very high order. He died Nov. 13, 1907.

THOMPSON, SIR HENRY (1820-1904). British surgeon. Born at Framlingham, Suffolk, Aug. 6, 1820, he was apprenticed to a doctor at Croydon, and in 1844 entered University College, London, as a medical student. In 1850 he was made house surgeon at University College Hospital, and in 1851 started as a medical practitioner in London. He became professor of surgery at University College Hospital in 1866, and Hunterian professor at the College of Surgeons in 1883.

Thompson was an astronomer, and built an observatory at Molesey. He wrote novels and



Sir Henry Thompson, British surgeon

magazine articles. He was an authority on diet, and one of the earliest advocates of cremation. Knighted in 1869, he was made a baronet in 1899, and died April 18, 1904.

THOMPSON, SIR JOHN SPARROW DAVID (1844-94). Canadian politician. Born at Halifax, Nova Scotia, Nov. 10, 1844, he became a harrister. In 1877 he entered the legislature of the province, and in 1878 was made attorney-general. For a short time in 1881-82 he was premier of Nova Scotia, after which he was for three years a judge. In 1885 Thompson left the bench to become minister of justice in the cabinet of the Dominion and a member of the Dominion House of Commons. He remained at that post for seven years, and in 1892 became premier. He died Dec. 12, 1894.

THOMPSON, LYDIA (1836-1908). British actress. Born in London, Feb. 19, 1836, she made her first appearance as a stage dancer at Her Majesty's Theatre in 1852, and the following year scored a success in the Haymarket pantomime, *Little Silverhair*. After a Continental tour she took a company to America in 1868, touring the U.S.A. with great success. In 1874 she returned to the London stage in Farnie's burlesque, *Bluebeard*. She retired in 1904, and died Nov. 17, 1908.



Lydia Thompson.
British actress

THOMSON, CHRISTOPHER BIRDWOOD THOMSON, BARON (1875-1930). British politician. Son of Major-General David Thomson, he was born April 13, 1875, and educated at Cheltenham and the R.M.A., Woolwich. He joined the R.E. in 1894



Lord Thomson.
British politician

and served in the Mahdaland and S. African campaigns, and was on the war office staff, 1911-14. He went to France in 1914; in 1915 became military attaché to Rumania, and later served in Palestine. Later he was at Versailles as military representative on the supreme war council. Military adviser to the Labour party's commission which visited Ireland in 1920, he became secretary for air in the Labour government of 1924 and again in 1929. His peerage dated from 1924. He was killed in the wreck of the airship R101, Oct. 5, 1930.

THOMSON, HUGH (1860-1920). British artist. Born June 1, 1860, in Ireland, he went to London about 1885, and at once found work on *The English Illustrated Magazine*. His work was immediately successful, and specialising in the 18th and early 19th centuries, he illustrated *The Vicar of Wakefield*, Cranford, *Quality Street*, and the works of Jane Austen, Thackeray, Austin Dobson, etc. He also did distinctive topographical drawings in black and white series. He died in London, May 7, 1920.

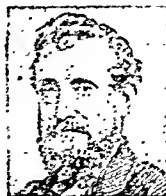
THOMSON, JAMES (1700-48). British poet. Born at Ednam, Roxburghshire, Sept. 11, 1700, son of the minister of the parish, he entered Edinburgh University, and in 1725 settled in London. In 1726 appeared his famous poem in blank verse, *Winter*. It was followed during the next four years by companion poems, *Summer*, *Spring*, *Autumn*; the quartette being published as *The Seasons* in 1730. The *Masque of Alfred*, 1740, written in conjunction with Mallet, is



James Thomson,
British poet

notable only as containing the lyric, *Rule Britannia*. His only other poem of value is *The Castle of Indolence*, 1748. He died at Richmond, Aug. 27, 1748.

THOMSON, JAMES (1834-82). British poet. He was born at Port Glasgow, Nov. 23, 1834, and educated at the Royal Caledonian Asylum. After some years as an army schoolmaster, he was befriended by Charles Bradlaugh and wrote for *The National Reformer*, in which journal appeared, in 1874, *The City of Dreadful Night*, the gloomy but impressive poem upon which Thomson's fame chiefly rests. A pessimist by temperament, Thomson lived a lonely life, the wretchedness of which was aggravated by his habit of intemperance. He died June 3, 1882. His other works include *Vane's Story*, which has been styled an autobiographical phantasy; some lyrics of beauty, and some prose essays and criticisms.



James Thomson,
British poet

THOMSON, SIR JOHN ARTHUR (b. 1861). British scientist. Born July 8, 1861, he was educated at the universities of Edinburgh, Jena, and Berlin. He became a lecturer at the school of medicine in Edinburgh, and in 1899 was made regius professor of natural history at Aberdeen, a post he held until 1929. Thomson became known owing to the lucid way in which he wrote on scientific subjects for the general public. His books include *The Bible of Nature*, 1909; *Darwinism and Human Life*, 1910; *Introduction to Science*, 1911; etc. In 1930 he was knighted.

THOMSON, JOSEPH (1858-1895). British explorer. Born at Penpont, Dumfriesshire, Feb. 14, 1858, he worked in his father's quarry before studying science at Edinburgh. In 1878 he went with an expedition to Africa, where he did valuable work as an explorer. In 1885 he headed an expedition to Sokoto, and in 1888 explored part of Morocco. His last work was done in Rhodesia for the Chartered Co., and he died in London, Aug. 2, 1895. Thomson wrote several books.

THOMSON, SIR JOSEPH JOHN (b. 1856). British scientist. Born at Manchester, Dec. 18, 1856, he was educated at Owens College, Manchester, and Trinity College, Cambridge. He was a fellow of Trinity in 1880, and Cavendish professor of experimental physics, 1884, a position he retained until 1918. He was appointed professor of physics at the Royal Institution, London, 1905, and awarded the Nobel Prize for physics, 1906. Sir Joseph was appointed master of Trinity College, Cambridge, in 1918. In 1908 he was knighted, and in 1912 was given the O.M.



Sir J. J. Thomson,
British physicist
Russell

THOR. Norse god of thunder, son of Odin (the heavens) and Jord (the earth), husband of Sif (the cornfield); the friend of man and foe of giants. His red beard flaming, he drove to battle in a goat-drawn car. There are numerous stories of his dealings with the giants. His home is Bilskirnir, containing 540 halls. Thursday comes from Thor's dag. See *Mythology*; *Norse*.

THORAX (Gr. breastplate). Anatomical name for the chest. The thorax in man is conical in shape, the front being formed by the breastbone and cartilages of the ribs, the sides and back by the ribs, the back being completed by the dorsal vertebrae of the spine.

THOREAU, HENRY DAVID (1817-62). American author and naturalist. Born at

Concord, Mass. July 12, 1817, and educated at Harvard, he became a teacher and a surveyor; but in 1845 took up his abode in a hut on the shores of Walden Pond. Providing for his wants by casual manual labour, he remained there until, in 1847, he made his home with Emerson. He died at Concord, May 6, 1862. In his *Walden, or Life in the Woods*, 1854, he described his experiences. He also wrote *Excursions*, 1863; *The Maine Woods*, 1864; and *Letters and Poems*, 1865.



H. D. Thoreau,
American author

Thorianite. In mineralogy, a mineral containing thorium, uranium, cerium, and other rare earths. It is found in Ceylon.

THORIUM. Rare earth metal. Its chemical symbol is Th, atomic weight 232.15; atomic number 90. Discovered by Berzelius in 1828 it is found in the monazite sands of Norway, N. and S. Carolina, Brazil, etc. It is a grey metallic powder. A radioactive element, it forms a number of compounds, the most important of which is thorium.

THORN. General term applied to shrubs or trees whose branches are armed with spines or have some of their shoots hardened into thorns, e.g. blackthorn, hawthorn, and furze (q.v.).

THORN. Town in Poland. Known also as Torun, it stands on the Vistula, 90 m. S. of Danzig. Founded in the 13th century, it was annexed to Poland in 1454. At the partition of 1793 it reverted to Prussia. Napoleon added it to his new grand duchy of Warsaw, but Prussia recovered it in 1815. By the treaty of Versailles it was given to Poland. In the market place stands a colossal bronze statue of Copernicus. Pop. 39,424.

THORNABY-ON-TEES. Borough of Yorkshire (N.R.). It is on the Tees, opposite Stockton, and is served by the L.N.E.R. There are shipbuilding yards, flour and saw mills, potteries, iron foundries, and engineering works. Pop. 19,831.

THORN APPLE

(*Datura stramonium*). Annual herb of the order Solanaceae. It occurs in a semi-wild condition throughout the world. It bears ovate leaves with wavy and toothed margins. The large white funnel-shaped flowers are succeeded by large four-valved, prickly capsules. It is narcotic-poisonous, and the dried leaves are smoked for the relief of asthma.



Thorn Apple. Faded leaves and prickly seed capsule

THORNDIKE, SYBIL (b. 1885). British actress. Born at Gainsborough, she was the daughter of Rev. A. J. W. Thorndike. Her early years were passed in Rochester, Kent. She made her stage debut at Oxford in 1903, and after touring with the Ben Greet Co. she joined Miss Roy Horniman in Manchester. She first appeared in London in 1910, and from 1914-18 played at the Old Vic. In 1912 she played in Houghton's *Hindle Wakes*. This was a great success, but her reputation as a tragic actress was made by her acting in *The Trojan Women* and *Medea* in 1919. Her other successes included *St. Joan* in G. B. Shaw's play, *Lady Macbeth and Jane Clegg*. In 1908 she married an actor, Lewis Thomas Casson, and the two



Sybil Thorndike,
British actress

were associated on the stage and also in the management of several theatres. Her brother, Russell Thorndike, is also an actor.

Thorne. Market town of Yorkshire (W.R.) It is 10 m. from Doncaster on the L.N.E.R. Market day, Wed. Pop. 6,076.

THORNE, WILL (b. 1857). British politician. Born at Birmingham, Oct. 8, 1857, he began work at the age of six in a barber's shop. In 1889 he founded the national union of general workers, of which he became general secretary. A member of the West Ham town council from 1890, he was mayor in 1917-18. He was president of the trade union congress, 1912, and was Labour M.P. for West Ham from 1906. In 1925 he published *My Life's Battles*.



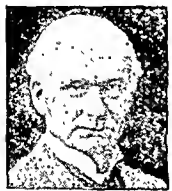
Will Thorne, British Labour leader
Bassano

THORNEYCROFT, ALEXANDER WHITE-LAW (b. 1859). British soldier. Born Jan. 29, 1859, he was gazetted to the Royal Scots Fusiliers at the age of twenty, and at once served in the Zulu War. He saw action in the Boer War of 1881 and the S. African War, at the opening of which he raised the corps named after him, Thorneycroft's Horse. Staff colonel, 1904-5, and commander of the 14th infantry brigade, 1905-9, he retired in 1913.

THORNTON HEATH. District of Croydon. It is largely residential, has a station on the Southern Rly., and is connected with London and Croydon (q.v.) by tramways.

THORNYCROFT, SIR JOHN ISAAC (1843-1923). British naval architect. Born in Rome and educated at Glasgow University, he founded a shipbuilding works at Chiswick in 1866, and obtained a reputation for torpedo-boat construction. He introduced the turbine propeller, water-tube boilers, etc. Knighted in 1902, he died at Bembridge, June 28, 1923.

THORNYCROFT, SIR WILLIAM HAMO (1850-1925). British sculptor. Born in London, Mar. 9, 1850, he was educated at Macclesfield and University College School, London. He gained the R.A. gold medal in 1875; was elected A.R.A. in 1884 and R.A. in 1888. His *Teucer* was bought for the Chantry Collection in 1881. The Gordon statue in Trafalgar Square, London, is his work. Knighted in 1917, Thorneycroft died Dec. 18, 1925.



Sir W. H. Thorneycroft, British sculptor
Russell

THOROUGHbred. Name given to a graceful breed of horses of mainly Eastern descent. With long, slender head and legs and short back, they all trace their ancestry to one or other of three sires, the Darley Arabian, imported in 1706; the Godolphin Barb, foaled in 1724; and the Byerly Turk, which carried its owner, Capt. Byerly, at the battle of the Boyne. All the racehorses of the world have been derived from British stock.

THORPE, SIR EDWARD (1845-1925). British chemist. Born near Manchester, Dec. 8, 1845, and educated at Owens College, and Heidelberg and Bonn universities, he was made professor of chemistry in the Andersonian Institution, Glasgow, 1870; at Yorkshire College, Leeds, 1874; Royal College of Science, London, 1885; and emeritus professor of general chemistry in the Imperial College of Science and Technology, S. Kensington. He was knighted in 1909, and died Feb. 23, 1925. His chief research work was concerned with the paraffin hydrocarbons and the derivatives of fluorine and phosphorus.

THORWALDSEN, BERTEL (1770-1844). Danish sculptor. Born at Copenhagen, Nov. 19, 1770, son of a carver of ships' figureheads, in 1793 he gained a scholarship enabling him to pass three years abroad. In 1796 he went to Rome, where in 1809 he produced a Jason which won him reputation. In mythological statuary he reproduced with wonderful success the style and spirit of ancient Greek sculpture. He died on March 24, 1844. See illus. p. 716.



B Thorwaldsen, Danish sculptor

THOTH. Egyptian deity. The name means measurer. As the divine scribe, Thoth recorded the result of the weighing of souls in the underworld. See Amenti.

THOTHMES OR THUTMES. Name of four kings of Egypt of the XVIIIth dynasty. Thothmes I, son of Amenhotep I, reigned for 25 years from about 1539 B.C. The first great Egyptian military commander, in his Syrian campaigns he carried Egyptian arms to the Euphrates. His son Thothmes II reigned for 13 years, from about 1514 B.C., with his half-sister Hatshepsut. Thothmes III apparently became co-regent with his aunt and step-mother Hatshepsut about 1501 B.C., and after his aunt's death reigned alone for 32 years. He established his power from Armenia to the Sudan. Modern scholarship tends to identify him with the Pharaoh of the Oppression. Thothmes IV, son of Amenhotep II, reigned for nine years from about 1447 B.C.



Thothmes II, from his mummy in the Cairo Museum. Right, Thothmes III, from a statue at Karnak

of the tyranny of the Four Hundred in 411 B.C., but when the new oligarchy of the Thirty Tyrants was established by the Spartans after the capture of Athens in 404 he suffered banishment. With the help of the Thebans he re-established the democracy at Athens in 403. He met his death while commanding the Athenian fleet in the Aegean (390-389).

THREADNEEDLE STREET. London thoroughfare. It runs S.W. from Bishopsgate to the Bank of England, by the enlargement of which and the rebuilding of the Royal Exchange its length was curtailed. It contains in addition to the Bank (called The Old Lady of Threadneedle Street) the Sun Fire Insurance office and Merchant Taylors' Hall. South Sea House stood on its N. side.

THREADWORM OR NEMATODE. Low form of animal life found in water, damp earth, and decaying animal or vegetable matter. While some are parasitic all their lives, others are free as larvae and parasitic as adults. Worms in dogs, strangles in horses, cattle, and sheep, gapes in poultry, and trichina in hogs are caused by these parasites, which are also responsible for ear-cockles in corn and the sickness of beet.

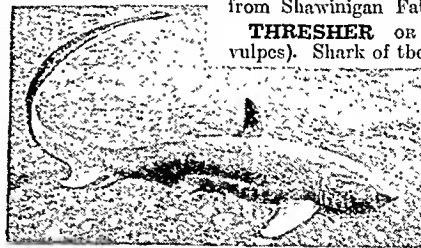
THREAT. Term used in English law for pressure by intimidation. To demand any property by threats, with intent to steal, is a felony. To send a letter threatening to accuse any person of a serious crime is a felony; and even to threaten verbally to accuse

any person of an infamous crime with intent to extort money is a felony. It is a misdemeanour to threaten to publish a libel with intent to extort money, and it is a felony maliciously to send or to cause to be received any letter or writing threatening harm or damage to person or property.

Three-Colour Process. Method of making prints in natural colours by photographic or mechanical printing. See Colour.

THREE RIVERS. City and port of Quebec, Canada. It is 92 m. from Montreal, on the N. side of the St. Lawrence at its junction with the St. Maurice, which has two mouths. There is a fine harbour, much lumber is exported, and pulp and paper are made, power being derived from Shawinigan Falls. Pop. 35,000.

THRESHER OR FOX-SHARK (*Alopias vulpes*). Shark of the family Lamnidae. It is a native of the Atlantic and Pacific, visiting S. and W. Britain during the summer. It is a very dark blue on the upper surface, paling to whitish on the under side; the body is cylindrical, the dorsal fin high, and the pectoral fins are long. The upper lobe of the tail fin is equal in length to the head and body. The total length of the thresher may be as much as 15 ft. See Shark.



Thresher. Shark of the Atlantic and Pacific Oceans, showing the long upper lobe to the tail fin
W. S. Berridge, F.Z.S.

THOUGHT READING. Popular name for a performance also known as the willing game. It was popularised in England in 1881 by the professional entertainers, Stuart Cumberland and Bishop. The thought reader, often blindfolded, performs any simple action decided on in his absence by the spectators, provided his hand after he enters the room is in contact with a person in the secret.

THOUSAND ISLANDS. Group of 1,700 islands and islets at the E. end of Lake Ontario. Wolfe and Howe belong to Canada and Wells and Carlton to the U.S.A.

THRACE (Gr. Thrakē; Lat. Thracia). In ancient geography, a country in the E. of the modern Balkan peninsula. Its boundaries may be roughly stated as on the N. the Danube, E. the Euxine, S. the Aegean and Propontis, W. Macedonia. The Balkan range traversed it from E. to W.; the chief rivers were the Strymon (Struma) and Hebrus (Maritsa). The land was little cultivated, but minerals abounded. In 1919 Thrace was assigned to Greece.

THRALE, HENRY (1728-81). English brewer. Son of Ralph Thrale of Offley, Hertfordshire, he inherited his father's brewery business in 1758, and in 1763 married Hester Salusbury. M.P. for Southwark, 1765-80, he is remembered as the host of Dr. Johnson at Streatham Park. He died April 4, 1781. See Piozzi, H. L.

THRASYBULUS. Athenian statesman and general. He assisted in the overthrow

THRIFT OR SEA-PINK (*Statice armeria*). Summer-flowering hardy perennial herb of the order Plumbaginaceae. A native of Europe, Asia, N. America, and Chile, it is found wild, and forms cushion-like tufts on the rocks of sea-shores and high mountains, and has



Thrift. Rosy flowers of the sea-pink

slender, stiff leaves growing in bundles from the woody branches of the root-stock. The funnel-shaped rosy flowers are massed in bunched heads or spikes.

THRING, EDWARD (1821-1887). British schoolmaster. The son of Rev. J. G. D. Thring, rector of Alford, Somerset. He was born Nov. 19, 1821, and educated at Eton and King's College, Cambridge, of which he became a fellow. In 1846 he was ordained, and after spending some time as a curate at Gloucester and elsewhere, was headmaster of Uppingham from 1853 till his death there on Oct. 22, 1887.

THROAT. In anatomy, the passage from the base of the tongue to the trachea or windpipe. It is the organ for the production of sound, and affords passage to food and drink on their way to the stomach, and air to the lungs. On looking into the mouth, the uvula or little tongue is seen, hanging from the soft palate. On either side the soft palate becomes continuous with the two pillars of the fauces, and below these, again, are continuous with the root or base of the tongue. Between the pillars of the fauces on either side are the tonsils. Above and behind the soft palate is the nasopharynx, into which the posterior ends of the nostrils open.

Projecting upwards in the middle line at the base of the tongue is a leaf-like structure called the epiglottis (q.v.). Food is prevented from entering the larynx by a muscular mechanism that closes the entrance to the larynx and opens the entrance to the gullet. Deep in the larynx are the vocal cords, the organs of sound, enclosed in a more or less rigid box of cartilage. See Larynx; Pharynx.

THROGMORTON STREET. London thoroughfare. It links Lothbury with Old Broad Street, E.C., and was named after Sir Nicholas Throgmorton (1515-71), an English diplomatist. Drapers' Hall is on the N. side, and on the S. is the Stock Exchange.

THROMBOSIS (Gr. curdling). Formation of a clot in a blood vessel, usually a vein. It may result from injury or inflammation of a vein, or thickening of the coats of an artery in old age. Thrombosis of a vessel in the brain may lead to paralysis.

THRONE. Royal or episcopal chair of state. The use of a raised seat as a symbol of authority is almost universal and of great antiquity. The royal throne in the House of Lords at Westminster is only occupied by the sovereign when opening or proroguing Parliament. Episcopal thrones are placed in cathedral chancels, and are occupied by the bishop of the diocese, whose official installation is usually known as his enthronement.

Throttle. In engineering, a valve for regulating the supply of steam, gas, or air to an engine. It is operated by a lever.

THRUMS. Scottish village which figures in several books by Sir J. M. Barrie, e.g. *Auld Licht Idylls* and *A Window in Thrums*. Its prototype is Kirriemuir, Barrie's birthplace. See Barrie, Sir J. M.; Kirriemuir.

THRUSH. Large family of song-birds (Turdidae), of which the song thrush, missel thrush, blackbird, ring ouzel, fieldfare, and redwing occur in Britain. The first three

are to be met with all the year round; the ring ouzel is seen in the summer; while the fieldfare and the redwing are winter visitors.

THRUSH. Inflammatory condition of the mucous membrane of the mouth due to infection by a fungus of the yeast family. It is usually due to improper diet and uncleanliness of the mouth.

THUCYDIDES (c. 461-c. 404 B.C.). Greek historian. His history, in eight books, of the Peloponnesian War, a 27 years' fight to a finish between Athens and Sparta for the hegemony of the Greek world, takes the story to 411 B.C., though the war did not end till 404. The work is characterised by the most scrupulous accuracy and impartiality. The love of Thucydides for Athens did not blind him to her defects and mistakes, and he holds the balance equally between her and her enemies. Furthermore, he endeavours to show the causes that underlay the events he describes. In this respect he is the first, and remains the greatest of philosophical historians. A notable feature of the work is to be found in the speeches he puts in the mouths of prominent men on both sides, such as the funeral oration delivered by Pericles on the Athenians who had died in the first year of the war. The account of the Athenian expedition to Sicily was regarded by Macaulay as the finest prose composition in the world.

Another Thucydides (c. 449 B.C.), was an Athenian statesman. After the death of Cimon he became leader of the aristocratic party, and thus the opponent of Pericles (q.v.).

THUG (Hind. thag, deceiver). One of a fraternity in India who strangled travellers with a noose, handkerchief, or turban, and then robbed and buried them. They were also called phansigars (noosers). Their secret jargon was called Ramasee. The early Thugs were Mahomedans. Gradually Hindus were initiated, and Thuggee became an institution under the protection of the goddess Kali. Thuggee was stamped out, 1830-48.

THULÉ. Name given by ancient writers to a remote island in the northern seas, often called Ultima Thule. It has been identified with the Orkneys, Shetlands, Iceland, and Norway. It is first mentioned by the ancient voyager Pytheas of Marseilles. Pron. Thew-lee.

THULITE. In mineralogy, a variety of zoisite. It is a basic calcium and aluminium silicate, rose-red in colour, and is found in the co. of Telemarken, Norway.

THULIUM. Rare earth element of the yttrium group. Its chemical symbol is Tm; atomic weight 169.4; atomic number 69. Discovered in 1879, but not isolated until 1900, thulium is found in

cuxenite, samarskite, ytterspar, and a number of other minerals.

THUMBSREW or **THUMBKINS**. Instrument of torture for compressing or breaking the thumbs. It was used in Spain during the Inquisition and in Scotland during the persecutions of the Covenanters. See Torture.

THUN (Fr.

Thonne). Lake of Switzerland, in Berne canton. Situated W. of Interlaken, and traversed by the river Aar, it is 11 m. in length, with a breadth averaging 2 m. Its area is nearly 19 sq. m.

The town of this name stands on the Aar, 19 m. by rly. S.S.E. of Berne. Pop. 18,600.

THUNDER. Noise which follows a flash of lightning. It is caused by the vibrations set up in the air by the sudden expansion and contraction which occur along the path followed by the discharge. It is produced in exactly the same way as the crackle which follows the discharge of electric sparks created artificially. A thunderstorm is a violent commotion of the atmosphere, due to unequal distribution of atmospheric pressure, accompanied by thunder, lightning, and rain or hail. Typical thunderstorms are violent and relatively local disturbances of which a peculiar feature is an outbursting gust of wind. They are also marked by certain characteristic types of cloud formations. See Brontometer; Cloud.

THUNDERSTONE. Name given to objects found in the ground and superstitiously regarded as the agents of lightning flashes and thunder-claps. They may be meteorites, nodules of iron pyrites, belemnites and other fossil cephalopods, or prehistoric stone implements, especially arrowheads and axes. As amulets their use is widespread throughout Asia and Africa.

THURIFER (Lat. incense bearer). In ecclesiastical ritual, one who carries the thurible or censer at ceremonial services. He keeps the incense burning by swinging the censer, which he hands to the priest for censuring the altar. In High Mass he censes the priests, choir, and congregation.

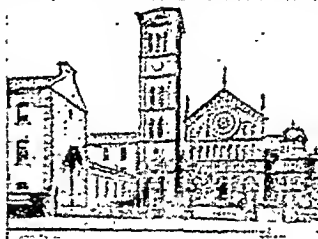
THURINGIA. Republic of Germany. It was formed in 1919, when the seven small Thuringian states united in a single republic. They were Saxe-Weimar-Eisenach, Saxe-Meiningen, Gotha, Saxe-Altenburg, Reuss, Schwarzburg-Rudolstadt, and Schwarzburg-Sonderhausen. The area is 4,669 sq. m. and the pop. 1,607,339. Thuringia is mainly an agricultural area, with a good deal of the land covered with forests. The capital is Weimar. The republic has a constitution adopted on March 11, 1921, which includes a state council and an elected diet.

The Thuringian Forest (Ger Thüringer Wald) is a forested mt. range and tourist resort of Germany. It extends for 60-70 m. N.W. from the Frankenwald to Eisenach. Gross Beerberg is 3,238 ft. in alt. Iron, copper, and manganese are mined.

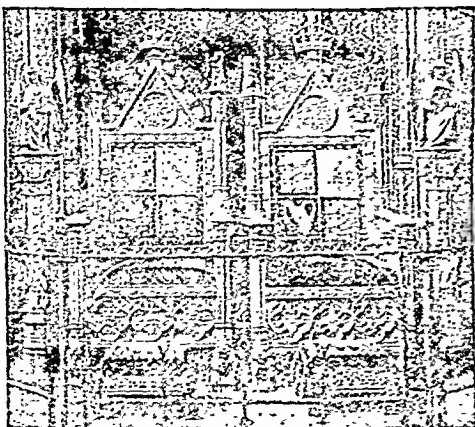
THURLES. Urban dist. of co. Tipperary, Irish Free State. Situated on the Suir, 29 m. N. of Clonmel, on the G.S. Rlys., it is built on



Thucydides.
Greek historian
From a bust



Thurles, Ireland. Roman Catholic cathedral of St. Patrick. See below



Throne. Royal thrones in House of Lords. The queen consort's, right, is one inch lower than that of the king

both sides of the river. The castle was a stronghold of the Butlers. Thurles is the seat of the Roman Catholic bishop of Cashel and Emly. Pop. 4,815. See illus. p. 1329.

THURLOE, JOHN (1616-68). English lawyer and statesman. Son of an Essex clergyman, he helped to raise Oliver Cromwell to the Protectorate, supported Richard Cromwell, and after the Restoration was often consulted by Charles II and his ministers. He died at Lincoln's Inn, Feb. 21, 1668. His papers, preserved in the Bodleian and the British Museum, are our chief authority for the history of the Protectorate.

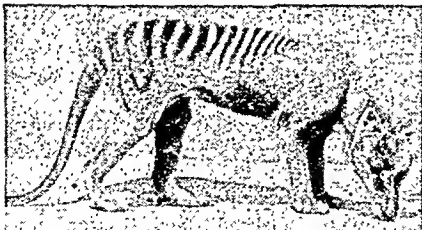
THURLOW, EDWARD THURLOW, 1st BARON (1731-1806). British lawyer and politician. Born near Norwich, Dec. 9, 1731, the son of a clergyman, he was educated at Canterbury, and Gonville and Caius College, Cambridge. Called to the bar in 1754, he made his name in several famous cases, entered Parliament in 1768, and, apart from a short interval, was lord chancellor 1778-92. A staunch Tory, with an ingrained aversion to change, he died at Brighton, Sept. 12, 1806.

THURSDAY ISLAND. Small island in Torres Straits. It is 30 m. N.W. of Capo York, a coaling station and headquarters of the Queensland pearl and tropane fisheries.

THURSLEY. Village of Surry, near Hindhead. In 1928 it was discovered that the earliest part of its church is Saxon, not Norman. The common was once a centre of the iron industry. Pop. 762.

THURSO. Burgh and seaport of Caithness, Scotland. It lies at the mouth of the Thurso river, 21 m. N.W. of Wick, on the L.N.E. and L.M.S. Rlys. There are ruins of an episcopal palace, burnt in 1222; the castle, the old seat of the Sinolairs; and Harold's Tower. Pop. 3,039.

THURSTON, ERNEST TEMPLE (b. 1879). British novelist and playwright. Born Sept. 23, 1879, he issued two books of poems in 1895, and his first play, *Red and White Earth*, in 1902. His first novel, *The Apple of Eden*, came in 1904. His other novels include *The City of Beautiful Nonsense*, 1909; *The Greatest Wish in the World*, 1910; *The Garden of Resurrection*, 1911; and *Jane Carroll*, an Irish revolutionary romance, 1927. He dramatised his first wife's novel, *John Chilcote*, M.P., 1905, and his other plays include *The Greatest Wish*, 1913; *The Wandering Jew*, 1920; *The Blue Peter*, 1924; and *Emma Hamilton*, 1929.



Thylacine. Wolf-like mammal of Tasmania, now almost exterminated as a marauder of flocks
W. S. Berridge, F.Z.S.

THYLACINE or **TASMANIAN WOLF** (*Thylacinus cynocephalus*). Carnivorous pouched mammal of Tasmania. It slightly resembles a wolf, but the fur is close and short, the tail slender and tapering, and the loins bear black stripes on a greyish brown ground. It lives among clefts of rocks. Owing to the havoc it works among sheep, it has been almost exterminated in populous districts.

THYME (*Thymus*). Genus of perennial aromatic plants of the order Labiatae. All the species contain an essential oil and

have very small flowers and leaves. The flowers are generally arranged in whorls, and are purple, reddish, or white. Common thyme (*T. Serpyllum*) is wild on hills in Britain. The dried shoots of lemon thyme, a variety, are powdered and used for sachets. Garden thyme (*T. vulgaris*), a native of the Mediterranean region, is used for flavouring dishes. From the flower-heads of several species a stimulant is obtained which is used for medical purposes. Pron. Time.



Thyme. Sprays of garden thyme

THYMOL. Solid phenol obtained from the essential oils of *Thymus vulgaris* (thyme), *Monarda punctata* (horsemint), and *Carum copticum* (ajowan). The most economical source is the ajowan plant. Thymol forms large colourless translucent crystals with a thyme-like odour. It is an antiseptic.

THYROID GLAND. Gland consisting of two connected lobes, one on each side of the trachea or windpipe. It forms an internal secretion which plays an important part in maintaining the bodily health. Hypothyroidism is reduction of the functions of the gland, and produces cretinism in children and myxoedema in adults. Hyperthyroidism is abnormal activity of the gland and leads to exophthalmic goitre or Grave's disease. When the gland is much enlarged the condition is known as a goitre. Experiments have been made in the application of thyroid gland in certain diseases; and also in changing tadpoles into frogs, control of sex of frogs' eggs, etc.

THYSANURA or **BRISTLE TAIL.** Sub-order of minute wingless insects found on damp earth and in decaying vegetable matter. They are covered with hairs or scales, and the young leave the egg in the adult form. They have long, many-jointed antennae.

Only five species are found in Britain, two of which are probably introductions from abroad. One of the latter is the familiar fish insect, which often swarms in store cupboards. *Campodea staphylinus* is the fragile, white, and eyeless species found on damp earth and decayed wood.

TIAHUANACO. Ruined city of Bolivia, a former centre of Inca culture. It stands on a plain, at an alt. of 12,900 ft., 38 m. S.W. of La Paz. The modern town is close by. Only a few stones of interest have survived. Chief of these is a monolithic gateway of trachytic rock, 18 ins. thick, 13½ ft. high, and 7 ft. 2 ins. wide. It is believed that the builders were Aymaras of the pre-Inca period. See Inca.

TIARA (Gr. a Persian head-dress). Ornate head-dress of various forms. Originally a kind of hat worn by ancient Persian kings, magi, and others, it was worn under the Roman empire by men and women, and became in medieval and modern times a lady's headband. A tiara is worn by the pope as a sign of sovereignty. At first a tall, pointed white cap, it was gradually elaborated.



Tiara. Triple crown worn by the pope

TIBER or **TEVERE** River of central Italy. Called Albula in early times, it is said to have been renamed after Tiberinus, a king of Alba who was drowned in it and as a river god was its patron deity. It rises in the Tuscan Apennines, and flows 245 m. to the Tyrrhenian Sea. Here the river has been canalised for the use of small steamers. The alluvium of its flood waters has given it the name of the 'yellow' Tiber. See Rome.

TIBERIAS. Town of Palestine. Founded by Herod Antipas, it was the chief town of ancient Galilee, and long famous for its school of Jewish teachers. It lies on the W. shore of the Sea of Galilee, or Lake of Tiberias, sometimes called the Lake of Gennesareth. Excavations have revealed remains believed to mark the site of the old town. Pop. 6,950.

TIBERIUS (42 B.C.-A.D. 37). Roman emperor, A.D. 14-37. Born Nov. 16, 42 B.C., he was the son of Tiberius Claudius Nero and Livia Drusilla, whom Augustus married in 38 B.C. In 2 B.C. Augustus formally adopted his stepson as his heir, and in A.D. 14 Tiberius succeeded to the principate. In the ungrateful work of guarding the frontiers on the Rhine and the Danube he had displayed the highest ability, but his character had become morose and embittered.

In 26 he retired to Capreae, and Sejanus was practically given

imperial powers, which he used to institute a reign of terror. In 31, Tiberius awoke to his treasonable designs and put him to death, but the reign of terror continued. Hideous tales were told of Tiberius's life at Capreae, and at last he was murdered in 37.

Tiberius was also the name of an East Roman emperor who reigned 578-82.

Tibesti. Region of the Sahara. Lying about 360 m. N.E. of Lake Chad, it is largely mountainous.



Tiberius, Roman Emperor
From a statue in the Vatican

five ministers) and the spiritual headship of the Tashi Lama at Tashi Lumpo, it has an area of about 750,000 sq. m. and an estimated population of about 3,000,000.

It lies between the Himalaya and Kunlun mts. and China, and contains the highest mass of mts. in the world. A large part of the higher region (mean altitude about 16,500 ft.) is occupied by lakes; most of the soil here is frozen solid for eight months of the year and during the other four is mud. In the central region (mean alt. 15,000 ft.) a few animals feed scantily upon grudging pastures. The S. zone is fairly fertile, and well watered, and suitable for growing varied crops, even peaches and grapes. Among the rivers which rise amongst the mts. are the Yang-tze, the Mekong, the Hwang-ho, and the Salween. Eastern Tibet has a good deal of timber, while farther to the west and south agriculture is carried on with considerable success.

The pursuits of the people are mainly pastoral. Sheep, yaks, buffaloes, camels, and pigs are bred. The manufactures are concerned mostly with the needs of the numerous monasteries. The chief imports are tea and tobacco, cotton and silk goods, sugar, rice, and household requisites. Wool, borax, salt, and musk are exported. Lamaism, a corrupt form of Buddhism, is the prevailing religion, but there are many adherents of the Bon, or Shamanistic, faith. The capital, Lhasa, was

for a long time known as the Forbidden City owing to the efforts which were made to exclude foreigners, but hostility to strangers has been passing away since a British Mission under Younghusband fought its way to the capital in 1904. See India; Lamaism.

TIBIA OR SHIN-BONE. The inner and larger of the two bones of the lower leg. It is attached by ligaments to the fibula at its upper and lower ends. Above, the tibia articulates with the femur to form the knee joint, and below with the foot, forming the ankle joint. The prominence of the lower end is known as the internal malleolus. See Anatomy; Knee Joint; Leg.



Tibetan lady of high rank

TIBULLUS, ALBIUS (53-18 B.C.). Roman poet. Four books of his Elegies are extant, all distinguished by a fastidious delicacy of mind and by a depth of pure emotion perceptible beneath singularly limpid and smoothly flowing verse.

Tic Douloureux. Severe form of neuralgia affecting the side of the face. See Neuralgia.

TICHBORNE CASE. In English law, a celebrated impersonation case. In March, 1853, Roger Charles Tichborne (1829-54), heir to an ancient Hampshire baronetcy, sailed for Valparaiso, whence on April 20, 1854, he sailed in the Bella for Jamaica, and was never seen or heard of again. In Oct., 1865, "R. C. Tichborne" turned up at Wagga Wagga, Australia, in the person of a man locally known as Tom Castro. On Christmas Day, 1866, he landed in England as a claimant to the baronetcy. Roger's mother professed to recognize him, as did others. Finally Castro was identified as Arthur Orton, son of a Wapping butcher. His claim was non-suited, March 6, 1872.

After a trial (April, 1873, to Feb., 1874), Orton was sentenced, on two counts of perjury, to fourteen years' hard labour. He died in London, April 1, 1898, aged 64.

TICINO (anc. Ticinus). River of S. Switzerland and N. Italy. It rises on Mt. St. Gotthard, and joins the Po below Pavia. It is 154 m. long. The chief towns on its banks are Pavia and Bellinzona. Pron. Ticheeno.



Tick. Dog or sheep tick. Top, brown tick. Both enlarged

TICK. Name applied to many genera of Arachnida allied to the mites. Most of them are temporarily parasitic on animals, whose blood they suck by means of the rostrum or beak, swelling sometimes to several times their original size. In the tropics they convey the germs of relapsing or tick fever and spotted fever in man, Texas or red-water fever in cattle, and piroplasmiasis in horses and dogs. The brown tick causes coast fever in cattle in S. Africa.

TICKHILL. Urban dist. of Yorkshire (W.R.). On the Nottinghamshire border, 6 m. S. of Doncaster, it has a large Early Perpendicular church built about 1360, the remains of a hospital of S. Leonard founded about 1225, the ruins of a priory, and a ruined Norman castle. Pop. 2,106.

TICKNOR, GEORGE (1791-1871). American literary historian. Born at Boston, Mass., Aug. 1, 1791, he graduated at Dartmouth in 1807, and from 1819-35 was professor of

Belles-Lettres and of French and Spanish at Harvard. In 1849 he published his magnum opus, *The History of Spanish Literature*, and in 1864 his *Life of Prescott*. Ticknor died Jan. 26, 1871.

TICONDEROGA. Village of the U.S.A., in New York state. It is at the N. end of Lake George. Here, in 1755, the French built a fort, known at first as Fort Carillon, and later by the Indian name Ticonderoga.

TIC-TAC. Method of signalling in use on racecourses. Its object is to communicate the betting movements in Tattersall's to bookmakers in the smaller rings and on the course when outside betting is permitted.

The betting movements in Tattersall's are communicated by one of the operators to someone on the grand stand, who passes on the message to a third person, who, in turn, communicates the information to the bookmaker for whom he works. The signs are made by touching various parts of the body and are varied at times to deceive outsiders.

TIDE. Rhythmic rise and fall of the oceanic waters. The average interval between successive high tides is 12 hrs. 25 mins. Usually the highest, or spring, tides occur at or near the time when the moon is new or full, and the lowest, or neap, tides when the moon is in the first or third quarter.

The mass of the moon attracts the oceanic waters, which make a little peak pointing from the earth's centre to the centre of the moon; this peak is held on the line of centres while the earth rotates beneath it. At the antipodes of this peak, on the side of the earth remote from the moon, a second peak occurs. These peaks are the successive high tides.

The lunar attraction is coupled with a similar attraction due to the sun, but of less magnitude. When the line of centres of the earth and moon approximates to the line of centres of the earth and sun, i.e. at full and new moon, spring tides are produced. When the two lines of centres are at right angles, at the first and third quarters, neap tides occur. The interposition of the great land masses, and the differences in the oceanic depths, cause variations in the tides along the coasts.

TIDAL POWER. Utilisation of the tidal flow to provide power. An enormous amount of energy is represented by the rise and fall of the tides, but, apart from mechanical difficulties, a bar to its utilisation is offered by the fact that it is intermittent and irregular. The time of high and low tide is continually changing, and there is the big difference in level between spring tides and neaps to be reckoned with. Some means of storing power is imperative, so that it can be utilised during the periods when the apparatus is idle.

TIDSWELL. Market town of Derbyshire. In the Peak district, it is 6 m. from Buxton. The church of S. John the Baptist is a beautiful example of 14th century architecture. Near the town are Miller's Dale and other beauty spots. Market day, Wed. Pop. 1,972.

TIDWORTH. Village of Wiltshire. It is 9 m. W. of Andover. The parish church of Holy Trinity was restored in 1882; the tower dates from 1360. There is an important military camp at Tidworth. Pop. 1,997.

TIECK, JOHANN LUDWIG (1773-1853). German critic, poet, and novelist. He was born in Berlin, May 31, 1773, and after studying at Halle, Göttingen, and Erlangen became a leader of the Romantic movement. His *Fairy*

Tales of Peter Lebrecht, 1797, was his earliest work of distinction. His poetic plays, *Genoveva*, and *Kaiser Octavianus*, 1804, perhaps represent the best of his original work. He also published works on Shakespeare. He died in Berlin, April 28, 1853.



J. Ludwig Tieck. German critic

TIENTSIN. Treaty port of China. Meaning the ford of heaven, it lies at the junction of the Pei-ho and the Grand Canal, about 70 m. from the sea and 70 m. from Peking. Railways connect Manchuria, the Kaiping coal mines, and Hankow. The river is frozen from November to April, but the port receives most of the goods destined for Peking, has a great trade in salt, and is the point of departure of the tea caravans for Siberia and Russia. The Chinese city was opened to foreign trade in 1860. It is insalubrious, in striking contrast to the foreign city, 1½ m. downstream, with its fine buildings, well kept streets and electric lighting. Pop. 800,000.



Tientsin. Offices of the Imperial Railways of North China. Above, native shop sign in a typical business street

TIEPOLO, GIANBATTISTA (1692-1769). Italian painter. He began his career in his native Venice, where the bulk of his frescoes and oil paintings (e.g. his Antony and Cleopatra series in the Palazzo Labia) are preserved. From 1750-53 he was at Würzburg, employed with his sons on the decoration of the archbishop's palace. He died in Madrid. Pron. Tee-cpp-olo.

TIERRA DEL FUEGO (Sp. Land of Fire). Island at the S. extremity of S. America, forming part of an archipelago. It was discovered by Magellan in 1520 and is divided between Chile and Argentina. The coasts are deeply indented and the mountainous surface culminates in the twin peaks of Darwin (6,800 ft.) and Sarmiento (7,200 ft.). The chief industries are timber cutting, sheep raising, and seal fishing. The capital of the Chilean portion is Punta Arenas (Magallanes) and that of the Argentine territory is Ushuaia. Its area is about 20,000 sq. m. The original Fuegians number scarcely 1,000.

TIETJENS OR TITIENS, TERESA CAROLINA JOHANNA (1831-77). German operatic singer. Born of a Hungarian family at Hamburg, July 17, 1831, she made her first appearance there, 1849, and by 1856 her mezzo-soprano voice and capable dramatic powers had made her widely famous. Her success in *Les Huguenots* in London, 1858, led her to make England her home. She died in London, Oct. 3, 1877.

TIFLIS. Capital of the Soviet republic of Georgia, also of the Transcaucasian Socialist Federated Soviet Republic. It is on the Kura. The chief industries are goldsmiths' work and

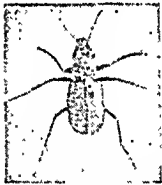
the manufacture of weapons, carpets, cotton goods, soap, and tobacco. Pop. 293,000.

TIGER (*Felis tigris*). Carnivorous mammal. It is the largest of the cats, except the lion. The fur is a reddish fawn with white under parts and white markings on face and ears. The transverse stripes on the body are black. The hair is short in the Indian specimens, but long and woolly in the Siberian or Manchurian variety. A smaller and heavily striped variety occurs in Malaya.

The tiger is found throughout most parts of Central and S. Asia, occurring in most parts of India, but not in Ceylon. Its favourite haunts are the jungles and forests. It preys at night upon cattle, deer, and other animals. Solitary in its habits, it consorts in the breeding season with only one female, and from two to five cubs are born in a litter. They become adult at the age of three years.

TIGER. British battle cruiser. Completed Oct., 1914, her estimated cost was £2,500,000. She is 670 ft. long, 90½ ft. in beam, displaces 28,500 tons, and has engines of 108,000 h.p., giving a speed of about 31 knots. Her guns include eight 13.5-in. and twelve 6-in. She took part in the Dogger Bank action, and in the Jutland. In 1930 it was announced that under the London Naval Treaty this ship was to be scrapped. See Lion.

TIGER BEETLE (Cicindelidae). Extensive family of beetles. Natives chiefly of the warmer regions, five species are British. Of these the green tiger (Cicindela campestris) flies freely in sunshine over heaths in late spring. It is coloured green and blue, with the long thin legs a shining copper colour. See Beetle.



Tiger Beetle. British green species, natural size

in equatorial Africa and Central and S. America. One, found in Africa, is remarkable for the fact that the colour of its coat varies at different ages.

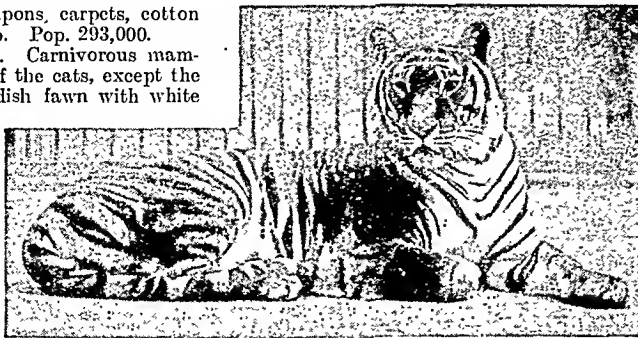
TIGER LILY (*Lilium tigrinum*). Bulbous herb of the order Liliaceae. A native of China, it is much cultivated in Britain. In late summer it bears racemes of orange-red flowers spotted with purplish black. See illus. p. 871.

TIGLATH-PILESER. Name of four Assyrian kings. Tiglath-pileser I, about 1100 B.C., who extended Assyrian power into Armenia, Cappadocia, and Lebanon, rebuilt Asshur. Tiglath-pileser IV, 745-727, subdued N. Syria, holding a court at Damascus attended by Ahaz of Jerusalem (2 Kings 16).



Tiglath-pileser III, from a bas-relief at Nimroud

TIGRANES. Name of several kings of ancient Armenia. Tigranes the Great (121-55 B.C.), succeeded his father Artavasdes II in 95, and reigned for 40 years. Aided by his father-in-law, Mithradates the Great, king of Pontus, he ruled W. Asia from Pamphylia to the Caspian. Arousing Roman enmity, he was defeated by Lucullus in 69 and 68 and subjugated by Pompey in 66. Pron. Tig-ray-noes.



Tiger. Full-grown male specimen of the powerful Indian variety Gambler Bolton, F.Z.S.

TIGRIDIA. Small genus of bulbous plants, of the natural order Iridaceae, natives of Mexico and Central America. It flourishes in a cool greenhouse in a sandy loam, but is not extensively grown in England, as the flowers only last at their best for two days. In the warmer districts of England the tiger flower, as it is called, is hardy out of doors in a warm shady bed or border, but the bulbs should be lifted and stored in autumn, after flowering, in the same manner as dahlias and gladioli. They are about 18 ins. in height.



Tigridia. Leaves and bloom of *T. pavonia*

TIGRIS. River of Iraq (Mesopotamia). It is formed by the union of several streams, including the Shat on the W. and the Bohtan Su on the E., flowing from the mts. of E. Asia Minor (Armenia). Upwards of 1,100 m. in length, it flows to the Shatt al Arab, near Kurna (Al Qurra). The Great and Little Zab and the Diyala join it from the E. The Tigris is the Hiddekel of Gen. 2, 14, Dan. 10, 4. Several of the most famous cities of antiquity stood on or near its banks. During the Great War the navigability of the channel was vastly improved by the Inland Water Transport Service. See Iraq.

TILBURY. Urban district of Essex, on the N. bank of the Thames, about 23 m. from Fenchurch Street, on the L.M.S. Rly. East Tilbury is 1½ m. S.E. and West Tilbury, ¾ m. W. of Low Street station. In 1927 a route from Tilbury to Dunkirk was inaugurated. The docks (extended 1928-30 at a cost of £2,500,000) can now compete with Southampton and Liverpool for big ocean liner traffic. Pop. 15,000.

Tilbury Fort, which stands in marshy flats, 2 m. S.W. of West Tilbury, was built by Henry VIII in 1539. Here Queen Elizabeth reviewed her troops in 1588.

TILDEN, WILLIAM TATEM (b. 1893). American lawn tennis player. Born at Germantown, Pa., Feb. 10, 1893, he became a journalist, and later was connected with the film industry. In 1920 and 1921 he won the singles championship at Wimbledon, and in 1927, with F. T. Hunter, won the doubles. He has won many championships in the United States. In 1928 he lost his amateur status by writing articles on the Wimbledon tournament. He wrote Lawn Tennis, 1920, and The Phantom Drive, 1924.

TILE. Thin plate of various materials, e.g. earthenware, glass, concrete, copper, and other metals, used for roofing, flooring, walls, fire-places, etc. Whether tiles are glazed or unglazed, flat or curved, plain or decorative, they are, when made of clay, manufactured by processes that are fundamentally the same as for brickmaking. In hand moulding

tiles, which, for roofing, commonly take a curved or corrugated surface, the process is naturally more elaborate than that for the production of plain rectangular bricks, and the tools and appliances are varied accordingly.

TILE FISH (*Lopholatilus chamaeleonticeps*). Spiny-finned marine fish of the order Teleostei, native of the Gulf Stream slope off New England. It is related to the perch.

Till. River of Northumberland. It rises in the Cheviots and joins the Tweed below Coldstream. It is 32 m. long.

TILLET, BENJAMIN (b. 1860). British politician. Born at Bristol, he worked in a brickyard at eight, went to sea in a trawler, served in the navy and mercantile marine, organized the Dockers' Union, and became secretary of the Dock, Wharf, Riverside, and General Workers' Union. He was a leader of the dock strike in 1889, and organizer of others in 1911-12. He was one of the pioneer organizers of the General Federation of Trade Unions and the National Transport Workers' Federation. Long an olderman of the L.C.C., he was M.P. for N. Salford, 1917-24, and from 1929.



Benjamin Tillet, British labour leader Elliott & Fry

TILLEY, VESTA (b. 1864). Stage name of Matilda Alice, Lady de Frece, née Powles, British actress. Born at Worcester, May 13, 1864, she won great popularity as a male impersonator on the variety stage and in pantomime, but retired after her husband, Walter de Frece, was knighted in 1919. He was M.P. for Ashton-under-Lyne, 1920-24, and then represented Blackpool.

TILLOCULTRY. Burgh of Clackmannanshire, Scotland. Situated on the Devon river, on the L.N.E.R., it is 5 m. N.E. of Alloa. It is noted for its manufacture of shawls, plaids, tartans, and tweeds. Pop. 3,100.

TILLOTSON, JOHN ROBERT (1680-94). English prelate. Born in Halifax, he was educated at Clare College, Cambridge. At first a Presbyterian, he accepted the Act of Uniformity, and was in turn rector of Kedington, dean of Canterbury, and canon and dean of S. Paul's. He succeeded Sancroft as archbishop of Canterbury in 1691, and died Nov. 22, 1694. A tolerant divine with Puritan sympathies, and a tactful controversialist, he was the author of The Rule of Faith. His published sermons are among the best examples of the pulpit oratory of his age, and he was long admired as a master of English prose.

TILLY, JOHN TZERCLAES, COUNT OF (1559-1632). German soldier. Of a Walloon family, he was born at Tilly, in Brabant. He served with distinction in the Netherlands and in Hungary, commanded the army of Maximilian of Bavaria, and was commander-in-chief of the Imperial forces in the Thirty Years' War. The most notable of his victories were those of Wimpfen, May 6, 1622, and Lutter, Aug. 27, 1626. Gustavus routed his forces at Breitenfeld, Sept. 17, 1631, and at the passage of the Lech, April 15, 1632, where the old soldier was wounded, dying at Ingolstadt, April 30.



John Tillotson, English prelate After Kneller



Count John Tilly, German soldier After Van Dyck

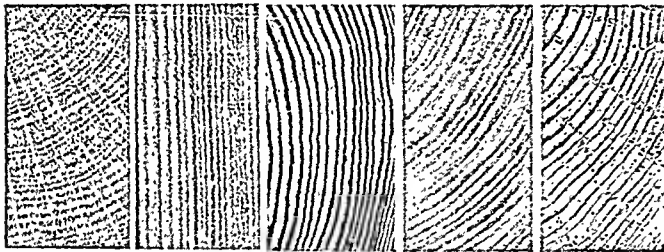
TILMANSTONE. Village of Kent. It is 5 m. from Deal and has an old and interesting church. It is now a colliery centre, as coal mines have been sunk in the district and many houses built for the workers.

TILSIT. Town of Germany in E. Prussia. It stands on the Memel, or Niemen, 60 m. N.E. of Königsberg. There are iron foundries and machine shops, oil mills, sugar refineries, and shoddy factories. Pop. 50,834.

By the treaty signed here June 25, 1807, between France, Russia, and Prussia, after the defeat of the Russians at Friedland, Russia was given a free hand in Sweden and Turkey, provided she maintained the continental system; but Prussia lost her possessions west of the Elbe, submitted to a heavy indemnity, and had her standing army reduced to 42,000.

TIMBER. General term for wood when of size sufficient for building purposes, furniture making, pulp making, etc. Trees grown closely in woods are the most valuable, the trunks being uniformly straight. Coniferous trees lend themselves especially to this method of growth; the wood is soft and easily worked, and, being permeated with resin cells, does not decay readily. Roughly speaking, the structure of timber is fibrous and elastic, capable of resisting great strains, and of being split with ease in the line of growth.

Timbers whose fibres do not run straightly are valuable for engraving, carving, and the firm holding of driven nails. Woods of this character include box, maple, lime, elm, and poplar. Among British trees oak and Scots pine afford the most useful timbers.



Timber. Sections showing graining of British trees used commercially. Left to right, oak, elm, larch, ash, Scots pine

Timbrel. Ancient percussion instrument of the tambourine type. Instead of always being round, it was often square or oblong.

TIMBUKTU or **TOUMBOUCTOU.** City of the French Sudan. Situated on the S. edge of the Sahara, it is on one of the most important trade routes in W. Africa. It is in communication, by means of small steamboats on the Niger, with Koulikoro, the terminus of the rly. from Ambididi and Kayes. It was occupied by the French in 1894. Pop. 6,118.



Timbuktu, French Sudan. One of the market places

TIME. Conception of the sequence of events; or the duration of anything. The measurement of time is, in some respects, easier than its definition, and originally depended upon the constant recurrence of certain phenomena, e.g. the rising and setting of the sun, stars, etc. The day, month, and year are natural units of time on the earth,

the second, minute, and hour artificial, but the former are difficult to determine precisely.

The earth makes a complete rotation W. to E. in 24 hours, or 15° in 1 hour. Since the earth rotates from W. to E., a place 30° E. of Greenwich will have noon 2 hours before Greenwich, and a place 30° W., 2 hours later. The difficulty is overcome by the establishment of standard times according to longitudinal belts. As the time changes one full hour for a difference in longitude of 15°, each meridian or longitude divisible by 15 is taken, and the belt bounded by meridians 7½° on each side takes its time from the central meridian. There are five standard time belts in Canada (corresponding to the meridians 60°, 75°, 90°, 105°, and 120° W long.) having noon 4, 5, 6, 7 and 8 hours after Greenwich. In Europe, standard time is taken from the meridians 0°, 15° E., 30° E., and in Australia from those of 120° E., 142½° E. (the 135° passes through an area of sparse population), and 150° E. See Calendar; Clock; Daylight Saving; Relativity.

TIME. In music, the measurement based on the periodicity of the accents and classified according to the subdivision of the beats. If the accent occurs on every other beat, the time is duple; if once in three, triple; and if once in four, quadruple. A bar-line is drawn through the stave or staves immediately before the accented beat, and hence it is commonly said that the accent falls on the first of the bar. If each beat is divisible into two lesser values, the time is simple; if into three (the beat being dotted), it is compound. See Beat; Harmony; Music.

TIMES, THE. British newspaper. Founded, Jan. 1, 1785, by John Walter and for a time known as The Daily Universal Register, its greatness began under John Walter II, who made it the principal source of information about international affairs throughout the world, and appointed the most famous editor the paper has had, John T. Delane (q.v.). John Walter III was the first to print by steam. In 1908 Lord Northcliffe acquired a controlling interest, and after his death in 1922 the control passed to Major J. J. Astor, who created a trust to prevent the paper from being sold as a commercial undertaking. From The Times office are issued Weekly Law Reports, a Weekly Edition Illustrated, and a literary and other supplements. See Walter J.

TIMGAD. Ruined city of Algeria. It is 24 m. from Batna, at the intersection of six Roman roads, the Thamugas of the Romans. Excavations have uncovered the forum, the theatre, baths, temple of Jupiter, and numerous other buildings. The arch of Trajan is one of the best preserved of existing Roman triumphal arches.

TIMOLEON (c. 411-337 B.C.). Greek soldier, the liberator of Sicily. Born at Corinth, of noble family, he freed Syracuse from the tyrant Dionysius, the younger, and the Carthaginians, and re-established democratic government. He then turned his attention to other Sicilian cities oppressed by tyrants. In 338 the boundary of the Carthaginian dominion was fixed at the river Halycus. Thereafter Timoleon divested himself of all authority, and became a private citizen of Syracuse.

TIMON. Athenian misanthrope of the 5th century B.C. He was so disgusted with the conduct of his friends when he lost his fortune that he retired into seclusion, shutting him-

self up in a tower, into which nobody was admitted except Alcibiades. His life story is the theme of a tragedy by Shakespeare.



Time. Map showing position of international date line

TIMOR. East Indian island, one of the Sunda Islands. The N.E. half is Portuguese, the remainder being Dutch. Portuguese territory covers 7,450 sq. m.; the Dutch area is 6,000 sq. m. The people are said to be Belonese, with affinities to the Papuans in the centre and E., and Timorese, related to the Malays, in the W.; in Portuguese Timor they number 395,000, and in Dutch Timor probably an equal number. Dili and Kupang are the respective capitals. Crops are maize, rice, sugar cane, bread fruit, and bananas.

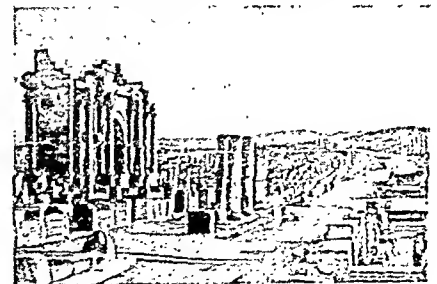
Timor Laut is the name of a Dutch group of coralline islands in the Malay Archipelago. The area is 2,060 sq. m. Pop. 25,000.

Timor Sea is the name given to that portion of the Indian Ocean lying between the island of Timor and the N. coast of Australia.

TIMOTHY or **TIMOtheus.** Companion of S. Paul. The son of a Gentile father and of Eunice, a Jewess of Lystra, he accompanied S. Paul to Europe, was with him at Athens and Corinth, on his third missionary journey, and shared his imprisonment at Rome. He became bishop at Ephesus.

TIMOTHY, EPISTLES to. Two N.T. epistles ascribed to S. Paul, and belonging, with the Epistle to Titus, to a group known as the Pastoral Epistles, because they are addressed to pastors and deal with matters relating to the ministry. Many scholars consider that while the Epistles may contain genuine fragments of S. Paul's writings, on the whole they appear to have been written in the name of the apostle, rather than by him. On the other hand it is contended that the difference in style between the Pastoral Epistles and the other Pauline writings is due to the circumstance that, while the earlier epistles were addressed to churches at an early stage of their development, the pastorals were written to individuals who presided over well-established Christian communities.

Timothy Grass. Alternative name for the perennial grass known as cat's tail (q.v.).



Timgad. Part of the ruined city; on the left is the Arch of Trajan, once the western gateway

TIN. Metallic element. Its chemical symbol is Sn (Lat. stannum, tin); atomic weight 118.7; atomic number 50; melting point 232° C. It is a silver-white, lustrous metal, highly ductile and malleable, takes a high polish, is a poor conductor of electricity, and is not easily acted on by the air. Known from prehistoric times, it occurs native in small

quantities, chiefly associated with other metals. The principal source of the metal is the ore cassiterite, or tin oxide, SnO_2 , also known as tinstone. Tin pyrites or stannite is the sulphide. Tin ores are found in Cornwall and in many parts of Europe, N. America, Bolivia, Dutch E. Indies, W. Africa, etc. It occurs as veins in granite, and in alluvial deposits as lode tin, black tin, etc. The tin is extracted by concentration processes, and roasted to remove sulphur and arsenic. The ore is then melted in a reverberatory furnace, the reduced tin being cast into ingots.

Tin is largely used in the manufacture of tinplate (q.v.); in many alloys, as bell metal, Britannia metal, bronze, gun metal, pewter, etc. It forms a number of compounds.

The world's production of tin averages about 199,000 tons, of which the Federated Malay States contribute 67,000, Bolivia 43,000, the Dutch East Indies 35,000, and Nigeria 10,500 tons. The average price of tin for the year 1900 was £133 per ton; for 1910, £155; for 1918, £329; for 1920, £165; and for 1929, £204. During 1930 the price fell steadily, and in Nov. it was £112 per ton. To remedy the situation a restriction of output was put into operation by a number of producers.

TINAMOU (Tinamus). Genus of S. American birds belonging to the small order Tinamiformes. They are related to the game birds, but are thought to have affinities with the Ratitae or flightless birds. In general appearance they are rather like partridges, and are usually found among the long grass in the plains. They are valued for the table.

TINPLATE. Sheets of wrought iron or mild steel which have been given a thin coating of tin. This coating serves to prevent the iron or steel from rusting. Tinplate is used in the manufacture of containers for preserving foodstuffs, for kitchen utensils, etc. A cheaper form of tinplate uses a mixture of tin and lead for the tinning. These plates, which are calledterne, are largely used in the U.S.A. and Canada for roofing purposes.

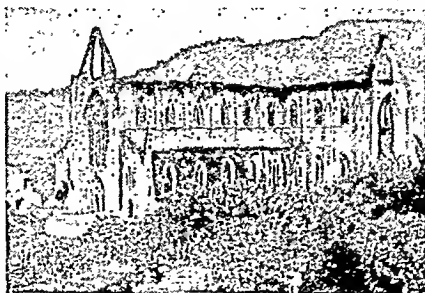
The Tinplate Workers' Company is a London city livery company. It was granted a charter in 1671, and has offices at Bakers' Hall, Harp Lane, E.C.

TINTAGEL. Village of Cornwall. On the coast, 5 m. N.W. of Camelford, it is one of the most picturesque places in the co.

Tintagel Castle, the reputed birthplace of King Arthur, stands on a ridge of rock connecting Tintagel Head to the mainland. The 13th century walls remain in parts, and near by is a small chapel of the same period. Parts of the castle have been restored. Pop. 1,307.

TINTERN ABBEY. Ruined abbey on the Wye, in Monmouthshire. It is beautifully situated 5 m. N. of Chepstow. A Cistercian house was founded here by Walter de Clare about 1131. The magnificent building was mainly erected between 1269 and 1287 by Roger Bigod, earl of Norfolk. The cloisters were added about 1470. The chief remains are the ruins of the cruciform church, 228 ft. long by 150 ft. broad. The abbey was long the property of the duke of Beaufort, but in 1900 it was acquired by the crown, and extensive repairs were undertaken. See illus. above.

TINTORETTO. Popular name of Jacopo Robusti (1518-94), Italian painter. Born in Venice, he studied under Titian, and was influenced by Michelangelo. His first important work was the Miracle of S. Mark, 1548. Venice possesses the most famous of his paintings. These include over 60 works in



Tintern Abbey. Remains of the 13th century Cistercian house. It is now crown property. See below

the Scuola di San Rocco, the church of San Rocco, the Collegio, and the Doge's palace. There are examples in the National Gallery, London, and at Hampton Court. The great Crucifixion in the Scuola has been acclaimed as illustrating at their best his extraordinary draughtsmanship, resonant colour, and sense of dramatic composition; but his Presentation in Madonna dell' Orto, and many more, are hardly less arresting. His last work of importance was the Paradise (74 ft. by 30 ft.), in the Doge's palace, considered by Tintoretto the crowning work of his life. Tintoretto died in Venice, May 31, 1594.

TINWORTH, GEORGE (1843-1913). British artist. Born at Walworth, London, Nov. 5, 1843, the son of a wheelwright, he became a skilled artist in terra-cotta. His works include panels in the cathedrals of York and Wells, and the Fawcett memorial in Victoria Park, London. Tinworth wrote From Sunset to Sunset, 1907. He died Sept. 10, 1913.

TIPPERARY. Co. of Munster, Irish Free State. An inland co., its area is 1,662 sq. m. The centre is mainly level and fertile, but on the borders are hills. The chief river is the Suir, while along the W. flows the Shannon. Agriculture is the chief industry, the most flourishing branch being dairy farming, but coal and copper are worked. The G.S. Rlys. serve the co. In the S.W. are interesting stalactite caverns. The co. is divided into the north and the south riding, the respective capitals being Nenagh and Clonmel. Pop. 141,015.

TIPPERARY. Urban dist. of Co. Tipperary, Irish Free State. It is 110 m. from Dublin, on the G.S. Rlys., and has trade in farm and dairy produce, and works for making condensed milk. It grew up around a castle built by the English. Pop. 5,555.

Tipperary is the short name for a popular song. It's a long, long way to Tipperary, written and composed by Jack Judge in 1911. It had an extraordinary vogue during the Great War. The chorus runs—

It's a long way to Tipperary, it's a long way to go; it's a long way to Tipperary, to the sweetest girl I know: Good-bye, Piccadilly—farewell, Leicester Square; It's a long, long way to Tipperary, but my heart's right there.

TIPPERMUIR, BATTLE OF. Fought Sept. 1, 1644, on a plain three miles from Perth, between the Scottish Covenanters and a Royalist force commanded by Montrose. Some 2,000 Covenanters were slain, many were taken prisoners, and Montrose was able to occupy Perth. See Montrose, Marquess of.

TIPPOO SAHIB (1749-99). Sultan of Mysore. Son of Haider Ali (q.v.), whom he succeeded in 1782, he planned vast schemes for the expulsion of the British. The plot was discovered, Wellesley made a rapid advance on Seringapatam, and Tipoo was slain in the capture of the city, May 4, 1799.

TIPSTAFF. Official of the English high court of justice. The name is derived from the staff of office, which is tipped with metal or with a small crown. His duty is to make arrests, in the precincts of the court, of persons committed for contempt or other offences.

TIPTON. Urban dist. of Staffordshire. One mile from Dudley, it is served by the L.M.S. and G.W. Rlys. In the heart of the Black Country, it manufactures iron goods, cement, and bricks. In and around the town are coal mines. S. Martin's is the chief of several churches. Pop. 34,131.

TIRAH. Dist. of India, in the N.W. Frontier Province. It comprises all the glens on the S. side of the Safed Koh Range. The natives, Afridis and Orakzais, cultivate the lower slopes and valley floors.

The Tirah Campaign is the name given to a British expedition against the Afridis and Orakzais, 1897-98. British posts in the Khyber Pass garrisoned by Afridi ruffians having been overwhelmed by Afridi insurgents, a force of 35,000 men under Sir William Lockhart captured the Dargai heights, Oct. 20, 1897, stormed the Sempagha Pass, Oct. 29, and the Arhanga Pass, Oct. 31. The force returned to India by two routes and, a junction having been effected near Peshawar, the Khyber forts were retaken. The Afridis then sued for peace. Terms were imposed, and the expeditionary force was dispersed, April, 1898.

TIRE. Hoop, band, or air-filled tube on the rim of a wheel. The steel tire of a wooden carriage or cart wheel binds the felloes and spokes tightly together and takes the wear of usage. The tire is made rather smaller than the wheel, is expanded by heat till it will pass over the felloes, and is then allowed to cool. The rolled-steel tire of a railway locomotive, carriage, or car wheel is shrunk on to the cast-iron or steel centre in a similar way.

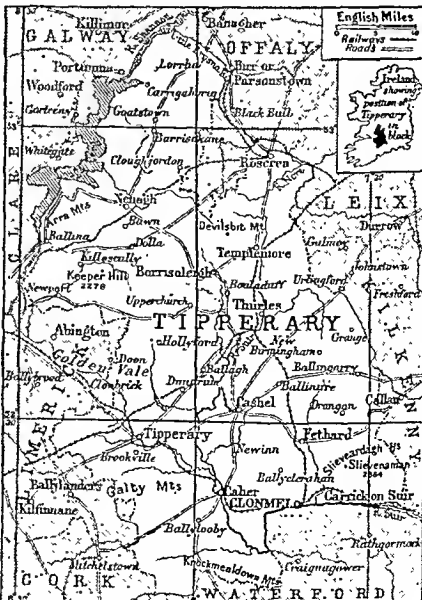
The invention of the bicycle led to the introduction of solid rubber tires, which are still used for light carts and heavy automobiles.



Tintoretto, Italian painter. Self-portrait

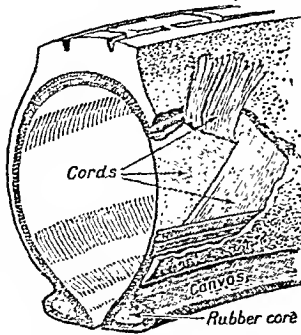


Tintagel. Ruins of the castle, the reputed birthplace of King Arthur



Tipperary. Map of the Irish agricultural county

The pneumatic tire, now universal for cycles and for motor cars of up to 2 tons weight, and used to an increasing extent for heavy motor vehicles, appears to have been invented in 1846 by T. Thomeon, but the credit for first making practical use of the idea is due to J. B. Dunlop (d. Oct. 23, 1921) in 1888. It consists of an inner air-tube of rubber, and an external cover of cotton threads embedded in rubber with a thick coating of that material, which is often protected by steel studs.



Tire. Section of beaded edge cord tire showing four diagonal layers of cord.

TIREE OR **TYREE**. Island of the Inner Hebrides, Argyllshire, Scotland. It is 14 m. from N. to S., and averages 3 m. in breadth. Cattle and poultry are reared. Pop. 1,716.

TIRESIAS. In Greek legend, a soothsayer of Thebes. He was blind from childhood. Athena, having been asked to restore his sight, gave him the gift of prophecy.

TIRIDATES. Name of several Parthian and Armenian kings. (1) King of Parthia, 32 B.C. (2) Grandson of Phraates IV, set up as king of Parthia by Tiberius, A.D. 35. (3) Brother of Vologases I, by whom he was made king of Armenia about A.D. 54. (4) King of Armenia in the 3rd century. A.D., twice expelled by the Persians and definitely restored by the emperor Diocletian after the peace of Nisibis, 298.

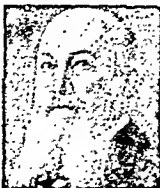


Tiridates, King of Parthia. From a coin.

TIRNOVO OR **TENOV**. Town and former capital of Bulgaria. It stands on the Jantra (Yantra), N. of the Balkan Mts., on the rly. from Ruschuk (Ruse) to Stara Zagora, 35 m. S.S.E. of Sistova (Svishtov). Pop. 12,067.

TIROL. Province of the republic of Austria. With an area of 4,882 sq. m., it lies between Bavaria on the N. and Italy on the S., and between the Austrian provs. of Salzburg and Vorarlberg. Before the Great War the prov. extended S. to Lake Garda, but the treaty of Saint Germain-en-Laye gave the Trentino district to Italy. The Brenner route is almost the sole way S. into Italy. Innsbruck is the capital. Pop. 313,885.

TIRPITZ, ALFRED FRIEDRICH VON (1849-1930). German sailor. Born at Küstrin, March 19, 1849, he entered the Prussian navy, April 24, 1865. Made Prussian minister of state in 1898, he devoted his energy to the creation of a navy capable of challenging that of Great Britain. In 1903 he became grand admiral of the German navy and head of the naval staff. Shortly after the outbreak of the Great War he announced the submarine campaign against the Allies, but disputes as to the value of this campaign brought about his fall in March, 1916. He published *My Memories, 1919*, and died on March 6, 1930.



A. F. von Tirpitz, German sailor.

TIRYNS. Ancient Greek city of Argolis, in Peloponnesus. According to legend, its massive walls, still standing, were built for Proetus, king of Argos, by masons from Lycia in Asia Minor called Cyclopes, whence the term Cyclopean architecture. Tiryns was destroyed by Argos (468 B.C.). Schliemann and Dörpfeld in 1804 discovered the ruins of a large palace, which in general structure exhibits a remarkable correspondence with the descriptions in the Homeric poems. See Aegean Civilization.

TISSOT, JAMES JOSEPH JACQUES (1836-1902). French painter. Born at Nantes, Oct. 15, 1836, he passed his early years in Paris, but after the Franco-Prussian war removed to London, where he produced some clever etchings and worked as a portraitist and caricaturist. About 1884 he set out for Palestine to collect materials for illustrating the life of Christ. Returning to Paris in 1895, he exhibited some 350 watercolour drawings of N.T. subjects marked by over-scrupulous historical realism. They were also shown in London. He died Aug. 8, 1902. See Ark.

TISZA, ISTVAN, COUNT (1861-1918). Hungarian statesman. Born April 22, 1861, he entered the Hungarian chamber in 1886, and became a leading force in political life. He was premier, 1903-5 and 1912-17. His aim was to Magyarise Hungary, and to promote her ascendancy within the Dual Monarchy. He collaborated with Count Berchtold (q.v.) in framing the ultimatum to Serbia, in July, 1914. He was assassinated Nov. 1, 1918.

TIT OR **TITMOUSE**. Family of small, rather long-tailed arboreal birds (Paridae), of which seven species occur in Great Britain. Of these the blue tit (*Parus caeruleus*), often called the tomtit, is the best known. The bearded tit (*Panurus biarmicus*) only occurs in the neighbourhood of the Norfolk Broads. The long-tailed tit (*Acredula caudata*), one of the smallest of British birds, occurs freely in England and Ireland. The great tit (*P. major*), or ox-eye, occurs locally in woods and orchards, but is nowhere abundant. The marsh tit (*P. palustris*) is common in England, rare in Scotland, and absent from Ireland. The crested tit (*P. cristatus*) is only found in certain pine forests in the N. of Scotland.

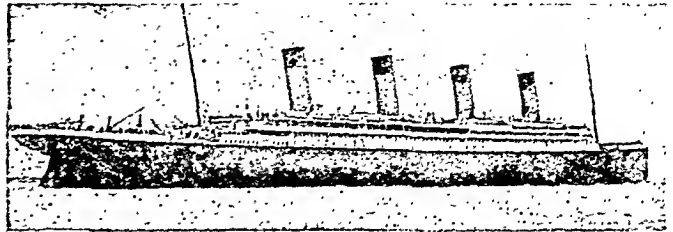


Tit. The small long-tailed species. Above, great tit or ox-eye. W. S. Berridge, F.Z.S.

TITAN. Sixth Saturnian moon in point of distance from the planet. It was the first to be discovered, being detected by Huygens in 1655. Its diameter is a little over 3,000 m. It varies slightly in brightness between the 8th and 9th magnitudes, and it is believed that its period of rotation is equal to its period of revolution about the planet.

TITAN. In Greek mythology, a family of giants, the progeny of Uranus and Ge. They were 12 or 13 in number, and the best known are Oceanus, Hyperion, Cronos, Rhea, and Themis. At the instigation of their mother, Ge, the Titans rose against their father, Uranus, and made Cronos ruler of the universe in his stead. When Zeus became king of the gods the Titans refused to acknowledge his authority and carried on a struggle with him.

TITANIC. British steamship of 46,328 gross tonnage, sunk in the Atlantic, April 15, 1912. Belonging to the White Star Line, she was at the time the largest ship in the world and reputed unsinkable. While on her maiden voyage from Southampton to New York she collided, it is believed, with a sunken iceberg at 11.40 p.m. on April 14, 1912, and sank at 2.20 a.m. next morning, over 1,500 lives being lost. Among those who perished were W. T. Stead, Col. J. J. Astor, and G. D. Widener. The Carpathia picked up about 700 survivors.



Titanic. The White Star liner, the largest vessel of her time, as she appeared before her maiden voyage to New York, during which she sank, with a loss of over a thousand lives.

TITANIUM. Metallic element. Its chemical symbol is Ti, atomic weight 48.1; atomic number 22. A lustrous, steel-like white metal which has a melting point of 1,825° C., it is found as the oxide TiO₂ in rutile, brookite, and anatase; in titanous iron ores; and in various titanates. It is used to increase the brilliancy of the light in carbon arc lamps and in the manufacture of the filaments for incandescent lamps. With steel it forms a hard and tough alloy. Various titanium salts are used in dyeing.

TITCHFIELD. Village of Hampshire. It stands on the river Meon, 2 m. from Fareham. The eldest son of the duke of Portland bears the title of marquess of Titchfield.

TITHE (A.S. teohta, a tenth). Originally the tenth part of an income payable for maintenance of the parish priest. They included predial tithes, produce of the soil; personal tithes, profits of handicraft or merchandise; and mixed tithes, including butter and eggs. Where the income from tithes exceeded local needs, the tithes were often

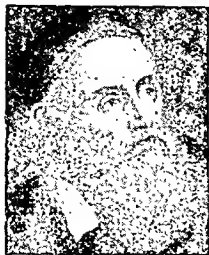
inappropriated to cathedrals and monasteries, and later came often into secular hands. By the Tithe Commutation Act of 1836, and subsequent amending Acts, tithes were commuted to an annual tithe rent charge. In 1925 an Act fixed the annual value at £105 and provided, by means of a sinking fund, for its extinction in 85 years. In 1928 a further Act fixed the date when incumbents receive payment.

A tithe barn was a medieval store-house for grain and fodder payable to the church in kind. There are notable examples at Bradford-on-Avon, Tisbury, and Glastonbury.

TITHONUS. In Greek mythology, the son of Laomedon, king of Troy, by a river nymph. Tithonus begged of Eos to give him immortality. His request was granted, but he forgot to ask for perpetual youth. On his begging Eos to revoke her gift, the goddess changed him into a grasshopper.

TITIAN. Anglified name of Tiziano Vecelli (c. 1477-1576), Italian painter. He was born at Pieve, learned painting in Venice,

and studied under Gentile Bellini and Giorgione. One of his earliest allegorical compositions, Sacred and Profane Love, exemplifies his skill as a colourist and his strength in composition. In 1516 he was made official painter to the council in Venice, where the greater part of his life was spent; but he was heard of at Ferrara, Mantua, Bologna, Augsburg, Milan, and Rome. His portrait of Charles V is one of the noblest works of the 16th century, and he also painted several portraits of Philip II of Spain. Titian died of plague, Aug. 27, 1576.



Titian, Italian painter
Self-portrait at Windsor

Titian's art is the highest perfection of sensuous beauty, frankly materialistic, frankly decorative. As a portrait painter he is regarded as in certain respects the greatest of all time. His work can best be studied in Venice and Madrid. The Louvre, Paris, also possesses many works, and others of almost equal importance are to be seen in Florence, Dresden, the Villa Borghese, Rome, and Vienna, while the galleries of Milan, Munich, London, and Antwerp contain fine examples. See illus. pp. 21, 124, 944, 1073, 1092, etc.

TITICACA. Lake of S. America. It lies on the boundaries of Peru and Bolivia, between the main Andean range and the Cordillera Real, at an alt. of 13,000 ft. It has a length of 130 m. from N.W. to S.E., an average width of 30 m., a maximum depth of 700 ft., and an estimated area of 3,200 sq. m. Its shores are indented by numerous bays.

Titlark (*Anthus pratensis*). Name applied to the meadow pipit. See Pipit.

TITLE. In English law, the right of ownership, especially in regard to property in land.

In England land can be registered at the land transfer office, and after a time an absolute title is secured for it. In Australia practically all titles are registered. In the U.S.A. a number of societies guarantee titles to land on payment of a fee. Title deeds embrace all deeds and documents by which the owner proves his ownership, a mortgagee his mortgage, and the like. See Mortgage.

TITRATION (Fr. titre, standard). Method of chemical analysis. It consists in ascertaining the strength of a chemical substance by noting the quantity of a standardised solution, i.e. a solution of a known strength, that is required to complete a definite chemical reaction.

TITUS. Companion of S. Paul. A Greek by birth, he is first mentioned as accompanying S. Paul from Antioch to Jerusalem (Gal. 2, 1). On three occasions he was working in Corinth. S. Paul, who addressed a short epistle to him, left him in Crete, where he had charge of the Church (Tit. 1, 5). He was with S. Paul in his second imprisonment at Rome (2 Tim. 4, 10). See Paul, S.

TITUS, FLAVIUS SABINUS VESPASIANUS (b. d. 40-81). Roman emperor, A.D. 79-81. He was the son of Vespasian, he was born in Rome, Ma.

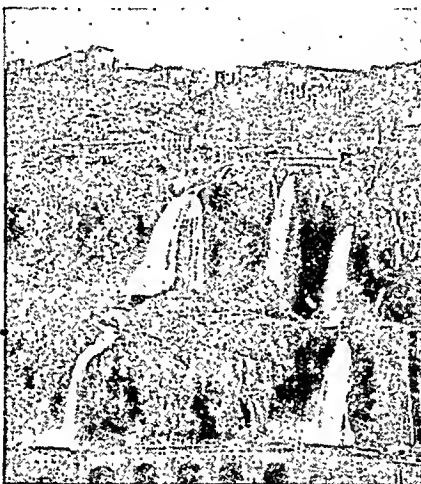
Dec. 30, 40, and served as military tribune in Britain and Germany. He ended the war with the Jews by taking Jerusalem in 70, an event celebrated by the arch at Rome which bears his name. He

TINTORETTO. roved in his short reign Robusti (1518-94). It was two years to be one of Venice, he studied in most popular of all influenced by Michelangelo. He died important work was the Mt. St. See Rome. 1548. Venice possesses the bology, a giant his paintings These include ovo the goddess

Artemis. For this he was killed by Apollo, brother of Artemis, or by Zeus. Consigned to Tartarus, he lay on the ground with two vultures perpetually tearing his liver.

TIVERTON. Mun. bor. of Devonshire. It is 14 m. from Exeter, on the G.W.R. The town lies on both sides of the Exe. S. Peter's church has some fine brasses and a Norman doorway. The castle, built about 1100, has been largely rebuilt. Here is Blundell's School, and a free school dating from 1611. There is a trade in agricultural produce. Pop. 9,715.

TIVOLI (anc. Tibur). City of Italy, in the prov. of Rome. Situated on the Sabine Hills, on a rocky eminence 750 ft. high, by which flows the river Teverone (Anio), Tivoli has been a celebrated summer resort from antiquity. The chief Roman remains are the beautiful circular Temple of the Sibyl, the temple of Tiburtus, and the villas of Hadrian and Maecenas. The Villa d'Este (q.v.) dates from 1549. The castle of Pius III, built about 1460, is now a prison. The falls of the Anio, which are famous for their beauty, supply electric power for Rome. Pop. 16,389.



Tivoli, Italy. General view of the Sabine town, showing the waterfalls of the Anio

TLEMSEN OR TLEMEN. Town of Algeria. In the Oran div., and the Pomaria of the Romans, it was occupied by the French in 1842. It exports olive oil, alfa, and blankets. It was once the Moorish capital of N.W. Africa. There are fine mosques dating from the 12th-13th centuries, a fortress, and a museum of local antiquities which contains the epitaph of Boabdil, king of Granada. Pop. 26,758.

T.N.T. Abbreviation for the high explosive trinitrotoluene (q.v.).

TOAD (*Bufo*). Large genus—over 100 species—of batrachians. Closely related to the frogs (*Rana*), they differ from them in their flatter upper side, broader head, shorter limbs, and in the skin being dry and pimply, with glands which secrete an acrid fluid. In addition, toads are toothless, and the tip of the tongue is not divided. They pass through a larval ("tadpole") stage similar to that of the frog, the eggs being extruded in a double chain enclosed in a string of jelly, which is wound around water plants. The tadpoles are smaller and darker than those of the frogs.

The genus is represented in Britain by two

species: the common toad (*B. vulgaris*) and the natterjack. The common species seeks drier situations than the frog, is inactive during the day, and feeds upon insects, worms, and snails. See Natterjack; Surinam Toad.

TOADFLAX (*Linaria*). Genus of herbs of the order Scrophulariaceae. Natives of Europe and W. Asia, the flowers are tubular, with a hollow spur, and the mouth is closed by a couple of lips, which can only be opened by strong insects, like bees. The best known species are the yellow toadflax (*Linaria vulgaris*) and the ivy-leaved toadflax. The first named is common in dry wastes, and the dense clusters of bright yellow flowers are very much similar to those of the snapdragon.



Toadflax. Sprays of *Linaria vulgaris*

TOADSTOOL. Term popularly applied to mushroom-shaped fungi to indicate their supposed poisonous character. As a matter of fact, few of this order of fungi (the Hymenomycetaceae) are known to be poisonous, and a fair percentage are known to be as wholesome as the common mushroom (*Psalliota campestris*).

TOAST. Term used for drinking a health and for the health drunk; originally applied only to a lady, who was known as "a toast."

A toastmaster is an official at public banquets who announces the healths. A loud, clear voice is essential, and toastmasters are usually selected from those officials of such institutions as Lloyd's whose duty it is to "call" members.

TOBACCO. Narcotic plant of the genus *Nicotiana*, prepared for smoking, chowing, and as snuff. Its name is derived from the Mexican word *tabaco* or from the tobacco, a Y-shaped instrument used by the old inhabitants of Santo Domingo for inhaling tobacco smoke through the nostrils.

The tobacco plant was first brought to Europe in 1558 by Francisco Fernandez, a Spanish physician; but the smoking of tobacco in Europe was started by English example. In 1586, Ralph Lane, the first governor of Virginia, and Sir Francis Drake brought smoking materials and implements to Sir Walter Raleigh, who rapidly popularised the custom.

The tobacco plant is a coarse, rank-growing annual. Its stem is unbranched and grows to a height of about six or seven feet, terminating in a bunch of yellow or rose-coloured flowers. It is grown in British gardens for the sake of its flowers. Clayey, moist soils produce tobaccos which are dark brown or reddish in colour when cured. Bright and yellow tobaccos are grown on sandy soils, and the leaf of this variety is thinner. The bright tobacco of Virginia and N. Carolina is all grown in loose sandy soil with a clay subsoil.

Syria produces and manufactures a smoking tobacco known as Latakia. Tobacco for pipe-smoking is mostly grown in Kentucky, North Carolina, and Virginia. Cigarette tobaccos are principally imported from Virginia. The Egyptian cigarette is made from Turkish leaf. The best cigar tobaccos are grown in Cuba, but a good cigar leaf is produced in Jamaica, Sumatra, and North Borneo. Canada, Australia and S. Africa (especially Rhodesia) are increasing their output. Japan has extensive tobacco plantations.

Since the introduction of tobacco into England, it has been subject to import duties, but Empire grown tobacco is admitted at a reduced rate of duty. In Great Britain in 1929 tobacco and snuff contributed £59,194,861 to the national revenue.



Toad. *Bufo vulgaris*, the common species

TOBAGO. Island in the British W. Indies, a dependency of Trinidad. It lies 21 m. N.E. of Trinidad, and has an area of 114 sq. m. The cultivation of rubber, cotton, and tobacco is established, and the production of cocoa and copra is being developed. Scarborough (pop. 1,588) is the port and chief town. Discovered by Columbus in 1498, it was successively Dutch, British, and French, finally becoming British in 1814. Pop. 23,390.

TOBERMORY. Seaport and burgh of Argyllshire, Scotland. It is 30 m. from Oban, and has a good harbour. After the defeat of the Armada in 1588 a Spanish galleon put into Tobermory Bay, and sank in about 66 ft. of water. She was believed to contain treasure to the value of over £300,000. In 1912 Colonel Foss conducted salvage operations, and, by means of divers, recovered silver goblets, dishes, and coins. Pop. 850.

Tobias. Character in the book of Tobit. Of Hebrew origin, it means God is good.

TOBIT, BOOK OF. One of the O.T. Apocrypha, composed probably by an Egyptian Jew in Aramaic in the 3rd century B.C. It tells the story of a pious Jew named Tobit, who with his wife Anna and his son Tobias had been carried captive to Nineveh by Shalmaneser.

TOBOGGANING. Snow sport. The word represents the American Indian odahaggan, which was used by the Indians of N. America for transporting goods across the snow. The Canadian and American toboggan is a sled with a flat bottom, sometimes fitted with low iron runners from 4 to 8 ft. long and about 2 ft. wide, accommodating up to six persons. The runs, or slides, in Canada and the U.S.A., are straight and divided into chutes or slides by low banked walls of snow, so that several toboggans can descend side by side.

The most modern form of tobogganing is obtained in the Engadine, Switzerland, during the winter season, notably on the Buol run at Davos Platz, and the Cresta run at St. Moritz.



Toby Jug,
by Wedgwood

TOBY JUG. Small jug or mug. It is shaped like a stout man wearing a cocked hat, the three corners of which form the spouts. Toby jugs were introduced in England early in the 18th century and were used for holding beer.

TOC H. British social organization. In 1915 there was established in Poperinghe, a church institute known as Talbot House, in memory of a fallen officer, G. W. L. Talbot, son of the bishop of Winchester. Soon the name was universally known as Toc H.

After the war the Toc H. association was formed, and a fellowship created of young men pledged to help one another. There are three London centres, one in Manchester, and over 70 branches. Headquarters are at 47, Francis Street, London, S.W.1. The guild church is All Hallows, Barking.

TOCQUEVILLE, ALEXIS CHARLES HENRI MAURICE CLÉREL DE (1805-59). French politician and writer. Born at Verneuil, Seine-et-Oise, July 29, 1805, he was called to the bar, 1826, and became a judge, 1830. He visited the U.S.A., 1831, and published his famous *La Démocratie en Amérique*, 1835. Deputy for Valognes, 1839-48, he was elected to the constituent assembly 1848, and was minister of foreign affairs in 1849. He died April 14, 1859.

TODDY PALM (*Caryota urens*). Tree of the order Palmae, a native of India and Ceylon. It grows to a height of 50 or 60 ft., with a crown of curving, much-divided leaves, which are 12 to 20 ft. long. The flowers are in drooping spikes, 10 or 12 ft. long, and the fruits are small, yellow-skinned berries.



Toddy Palm. Crown of leaves and drooping flower spikes

The juice of the flower spike is known as palm wine or toddy, and when boiled it yields jaggery, or palm sugar, and sugar candy. The central parts of the stem yield a kind of sago, and the fibres of the leaf-stalk constitute kuttal fibre, which is used for brooms, brushes, and ropes.

TODMORDEN. Mun. hor. and market town in Yorkshire (W.R.). It is on the river Calder, 19 m. by rly. from Manchester, on the L.M.S. Rly. The chief industries are cotton spinning and weaving, and there are also machine works and foundries. There is coal in the dist. Market day, Wed. Pop. 23,892.

TOGA (Lat. *tegere*, to cover). National outer garment of men in ancient Rome. A woollen cloak, of elliptical, or in later times crescent shape, with pointed ends, about four or five yards long, it was worn over the tunic and wrapped round the body, generally with one end hanging in front to the ankles, and the other drawn round the back under the right arm and thrown over the left shoulder. Its use was forbidden to slaves and foreigners, and it remained a ceremonial and official robe until the 5th century A.D.

TOGO, HEIHACHIRO, COUNT (b. 1847). Japanese sailor. Coming of a Samurai family, he trained in the Japanese navy from 1863-73, seeing action in the Civil War of 1868, and then entered the British training ship Worcester and spent some time in the R.N. college at Greenwich. Distinguishing himself in the Chinese war of 1894, he became rear-admiral. Promoted vice-admiral in 1900, he was commander-in-chief at the outbreak of the Russo-Japanese War, and destroyed the Russian fleet in Port Arthur, Feb. 8 and 9, 1904, and defeated Rozhdestvensky's fleet at the battle of Tsushima, May 27, 1905. He was given the British Order of Merit in 1906.



Count Togo,
Japanese sailor

TOGOLAND. District of W. Africa, administered under a mandate by Great Britain and France. Bounded W. by the Gold Coast Colony, N. by French Sudan, E. by Dahomé, and S. by the Gulf of Guinea, it extends about 320 m. from N. to S. and 140 m. from W. to E. in the broadest part, with a coastline of about 33 m. The area is 34,493 sq. m. and the pop. about 743,000. Teak and mahogany are the chief timbers. With the exception of the Volta, most of the rivers are without water during the dry season. The deadly tsetse fly abounds.

Numerous roads, unsurpassed in West Africa, serve as feeders to the rlys. The products are palm oil and kernels, cocoa, maize, rubber, coconuts and

copra, cotton, and rice. Lomé is the seat of administration and the chief port.

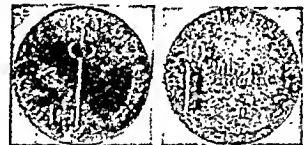
A German protectorate from July 5, 1884, Togoland surrendered to the Allies Aug. 26, 1914. After the war the portion bordering upon Dahomé, including Lomé, was allotted to France, while the districts bordering the Gold Coast fell to Great Britain. British Togoland covers 12,600 sq. m. and has a pop. of about 188,000. French Togoland covers 21,893 sq. m. and has a pop. of about 560,000.



Toga. Statue of M. Maximus, a Roman senator, wearing the toga
Naples Museum

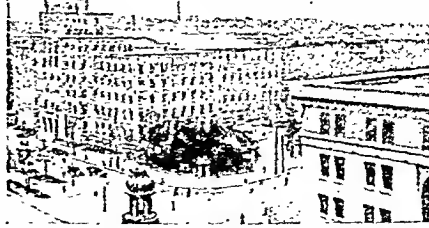
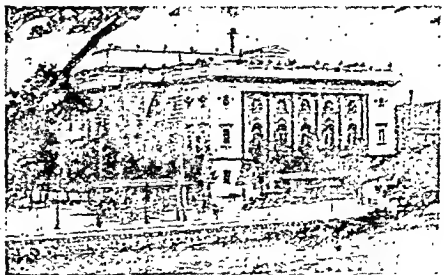
TOKAY OR **TOKAJ.** Town of Hungary. It stands at the confluence of the Bodrog and Theiss (Tisa), 43 m. N.N.W. of Debrecen (Debreczin). Pop. 5,073. Tokay is the market for the celebrated Tokay wine, produced on the vine-clad slopes of a hill ridge to the N.W. A sweet, delicious white wine, it owes its qualities to the hot climate and to the mode of preparation.

TOKEN. Numismatic term for any redeemable coin circulated at a higher value than that of the metal it contains. All silver and bronze coins now minted in Great Britain are tokens protected from depreciation. Lack of legal small change in England caused the use of illegal leaden tokens early in the 15th century. Elizabeth licensed the city of Bristol to issue copper tokens. Leaden tokens were again in use during the reign of James I, but the mass issues by tradesmen and others took place in the three periods 1648-72, 1787-99, and 1811-15, including latterly silver and gold tokens. The Token Acts of 1817-18 finally stopped the private minting of currency.



Token. Swansea halfpenny,
issued in 1796

TOKYO. Capital of the Japanese empire. Situated on the S.E. of Honshu Island, it occupies both banks of the river Sumida, and is the terminus of several rly. lines. Formerly called Yedo or Jeddo, it was renamed Tokyo,



Tokyo. View in the Hibiya Central Park district: left, City Public Hall; right, Japan Hypothec Bank. Above, the newly completed Imperial Theatre

meaning Eastern capital, in 1868. The river divides the city into two parts, Honjo, on the E., and Tokyo proper, on the W. The former is entirely surrounded by water, and is divided into several districts by canals. It contains many temples.

The palace of the emperor, a handsome

modern structure in Japanese style, occupies the centre of the ward of Kojimachi, which contains the mercantile quarter, the government buildings, educational establishments, factories, mills, and workshops. The Midzi or suburbs are noteworthy for the number of their temples. Here is the imperial university, taking rank with the principal universities in the world. In the W. and S.W. are located the foreign embassies and legations and the barracks. Uyeno Park contains the zoological gardens and the imperial museum. Printing and publishing are important industries. There are extensive libraries. The pop. in 1922 was 2,200,000. The city was almost destroyed by an earthquake on Sept. 1, 1923. It has since been rebuilt.

Tokyo Bay, or Yedo Bay, is an inlet on the S.E. coast of Honshu Island.

TOLBOOTH. Term originally applied to the hooth at a fair in which dues were collected and offenders against fair regulations were detained. From the latter use it came to mean a town prison. The most famous tolbooth was the former prison of Edinburgh, described in Scott's *The Heart of Midlothian*.

TOLEDO. City of Spain. It stands on the Tagus, 47 m. by rly. S.S.W. of Madrid. Situated on a rocky bluff and defended by lofty Moorish-Gothic walls, and dominated by the cathedral and the Alcázar, it is one of the most imposing and romantic cities of Spain, full of churches of great age, interest, and beauty. It manufactures cloth, cutlery, and church vestments. Toledo sword blades, famous from Roman times, are still highly esteemed. Pop. 21,670.

TOLEDO. City of Ohio, U.S.A. It stands at the head of Maumee Bay, at the W. end of Lake Erie, has an excellent harbour, and carries on an active trade in grain, lumber, and soft coal. Its products include motor vehicles, bottles, glass, wagons, bicycles, and electrical appliances. Pop. 315,464.

TOLERATION. Term applied to state recognition of the right of private judgement, especially in regard to religion. Its spirit is dated from the protest made by a Frenchman, Châtillon, who, writing under the name of Martin Bellius, protested against the act of Calvin in burning Servetus for his opinions on the Trinity. Its growth was due to the gradually increasing influence, in France, of the writings of Montaigne, Descartes, and Bayle, and, in England, of the works of Milton, Roger Williams, Jeremy Taylor, Berkeley, Chillingworth, Robert Barclay, John Locke, and John Stuart Mill.

The Toleration Act was passed by the English Parliament in 1689. It permitted Protestant Nonconformists who accepted the doctrine of the Trinity, and were willing to take the oaths of allegiance and supremacy, to hold religious services with open doors.

TOLL. In general, duty paid in consideration of certain privileges or services. The term is applied particularly to the charges levied by local authorities for the use of certain roads or bridges, the proceeds being devoted to their construction, improvement, or upkeep. Toll gates remained a familiar feature of main road travel until well on into the 19th century.

Tollerton. Village of Nottinghamshire, 4½ m. S.E. of Nottingham. Here is the city's airport, opened in June, 1930.

TOLSTOY, COUNT LEO NIKOLAEVITCH (1828-1910). Russian novelist, social reformer, and religious teacher. He belonged to an ancient family ennobled under Peter the Great. He was born at Yasnaya Polyana, in the prov. of Tula, Aug. 28 (O.S.), 1828.



Count Leo Tolstoy.
Russian novelist.

In 1843 he entered the university of Kazan. As a student he shared in the frivolous life of his class. In 1851 he went to the Caucasus, took a commission in the army, and began writing his first story, *The Cossacks*, published in 1863. His first published work was *Childhood*, largely biographical. It was followed by *Boyhood* and *Youth*. The *Sevastopol Stories*, the first instalment of which appeared in 1854, were based on Tolstoy's personal impressions of the Crimean War. Two great novels, *War and Peace*, written in 1865-69, and *Anna Karenina*, 1875-76, represent his highest achievements in art.

Tolstoy did his utmost to make his own life simple and adjust it to the life of the peasant. In his last year he carried out a long-cherished dream of abandoning his comfortable home and disappearing among the peasants. He set out to go away on Oct. 28, 1910, but fell ill and died at a railway station on Nov. 7. His widow died on Nov. 4, 1919.

TOLTEC. Name denoting an ancient culture anterior to the Aztec domination on the Mexican tableland. The existence of an advanced pre-Aztec culture is attested by remains at Tollan, Cholula, Teotihuacan, and elsewhere. See Aztec; Maya.

TOLUENE. Liquid resembling benzene, obtained as one of the products on distilling coal-tar. It was discovered by Pelletier and Walter, two French chemists, and so called from tolu balsam, from which it may be distilled. Toluene is used in the manufacture of explosives and aniline dyes. See Trinitrotoluene.

TOLUIDINE. Colourless oily liquid prepared by reducing nitrotoluene in the same way that aniline is made from nitrobenzene. The toluidines are employed in the manufacture of aniline dyes. See Aniline.

TOMAHAWK (Cree, hammer). Name applied to various ceremonial implements and weapons of the Algonquian tribes of N. America. Horn or polished stone celt hatchets were fitted into holed clubs, closely resembling those belonging to the European Stone Age.

TOMATO (*Lycopersicon esculentum*). Annual plant of the order Solanaceae. A native of S. America, it was introduced into Britain in 1596. It was originally grown as a greenhouse climber for the sake of its red and yellow berries, as they were termed. As the Solanaceae include poisonous species, its edible properties were not at first appreciated.

Tomatoes for out-of-door culture are raised from seed sown in pots in rich soil in early spring and forced on in gentle heat. When about two months old, the plants are removed to a cold frame for hardening off before planting out, which takes place in June. Out of doors they require a position against a warm S. wall, and a soil which has

not been recently manured. For indoor culture the seed is sown in January in the stove house, and the seedlings transferred in March to the intermediate house.



Tomato. Fruits of a cultivated English variety.
Sutton & Sons

dates from 1888.

TOMBOLA. Lottery game. It is popular in France and the Southern states of the U.S.A. Each entrant is provided with a card containing certain numbers, prizes being awarded to the holders of cards all of whose numbers have been drawn.

TOMSK. Town of Siberia. It is on the Tom, a tributary of the Ob, and on a branch line of the Trans-Siberian Rly. Candles, soap, vehicles, and spirits are manufactured, and there is a carrying trade in metals and agricultural products. The university Pop. 92,418.

TOM THUMB. Title of a fairy story by Charles Perrault (q.v.). The name has frequently been given to dwarfs the best known being

Charles Sherwood Stratton (1838-83), or General Tom Thumb. He was exhibited in England in 1844, and again in 1857, at the time of his first exhibition being only 2 ft. in height. He subsequently grew to 40 ins. In 1863 he married Lavinia Warren, another dwarf, and died in 1883. His widow (d. 1919) married Count Magri, the Italian "Tom Thumb," 37 ins. high, who died Nov. 1, 1920. See Dwarf.



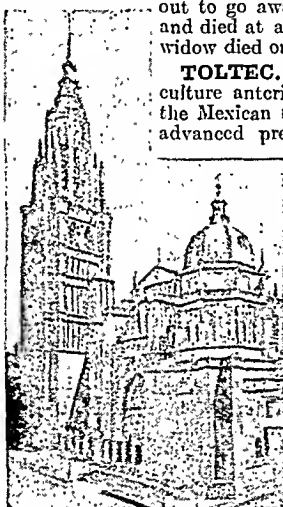
Tom Thumb, Charles S. Stratton and his bride, Lavinia Warren

TON. Measure of weight and capacity. The British ton is 20 cwt., or 2,240 lb. avoirdupois. The U.S.A. ton, or the short ton, weighs 2,000 lb. and the corresponding hundredweight is 100 lb. The British ton is also used, and is known as the long ton. The metric ton is 2,204.6 lb. The term is also used to express a given amount of timber, gravel, coke, lime, etc., e.g. a load or cubic yard of gravel is a ton. The word is the same as tun, a cask or harrel, and from that meaning is derived tonnage (q.v.).

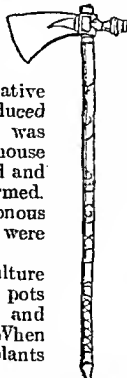
TONALITE. In geology, group of rocks consisting chiefly of quartz, orthoclase, plagioclase, hornblende, and biotite. Apatite, magnetite, zircon, iron oxides, etc., are also often present in the rocks of this group. Tonalite resembles dark granite in general appearance, and is so called for its occurrence at Monte Adamello, near Tonale, in the E. Alps. The rocks occur also in Scotland, Ireland, etc.

TONBRIDGE. Market town and urban dist. of Kent. It stands on the Medway, 29 m. S.E. of London, on the Southern Rly. The gateway of the castle remains, and the Chequers Inn is a timbered building of the 16th century. The chief building is the church of SS. Peter and Paul, restored in 1880. There is a cricket ground where Kent holds an annual cricket week. Market day, Tues. Pop. 15,947.

Tonbridge School was founded in 1553 by Sir Andrew Judd, in 1550. The governing body is the Skinners' Company.



Toledo. Gothic cathedral, with its graceful 16th century tower



TONE, THEOBALD WOLFE (1763-98). Irish patriot. Born in Dublin, June 20, 1763, the son of a cnamaker, he was educated at



T. Wolfe Tone,
Irish patriot

Trinity College, Dublin. Under the influence of the ideas of the French Revolution he was instrumental in forming the society of United Irishmen in 1790. Arrested for treason and liberated, he made his way from America to Paris, where in 1796 he persuaded the French government to undertake an Irish expedition, which ended in failure. In 1798 Tone again persuaded the French government to send several small raiding expeditions. The ship which he was aboard was compelled to surrender near Lough Swilly. Tone was taken prisoner, and sentenced to be hanged, but he committed suicide, dying Nov. 19, 1798.

Tonga Islands. British protectorate in the S. Pacific Ocean, usually known as the Friendly Islands (q.v.).

TONGALAND, AMATONGALAND, OR MAPUTALAND. Dist. in the N. of Natal. It borders on Zululand, Swaziland, and Mozambique (Portuguese East Africa). In 1890 it was proclaimed part of Zululand; in 1895 a British protectorate was declared, and in 1897 it was annexed to Natal. Its area is about 600 sq. m. Pop. about 13,500. See Natal.

TONGKING. Northern portion of French Indo-China. Formerly a province of the kingdom of Annam, it became a French protectorate in 1883-85. It lies between China and Annam, and has an area of 40,530 sq. m. The N. is mountainous, and here the virgin forest yields teak; the S., comprising the shores of the gulf of Tongking, is flat, marshy, and frequently flooded. Rice, sugar, tobacco, ramie, tin, coal, and silk are among the products. Hanoi is the capital. Pop. 7,401,912.

The gulf of Tongking is 300 m. long, and receives the waters of the Hong-Kiang.

TONGUE. Muscular organ placed on the floor of the mouth. The base of the tongue is connected with the hyoid bone, the epiglottis, the pillars of the soft palate, and the pharynx. The organ is covered with a mucous membrane with many papillae distributed over the anterior two-thirds of the upper surface.

The tongue is supplied by three nerves: the lingual, which conveys tactile sensation; the glosso-pharyngeal or nerve of taste; and the hypoglossal, which is distributed to the muscles. The mucous membrane on the under surface of the tongue is smooth and thin. In the central plane it forms a fold, the frenum linguae. The tongue has important functions in connexion with mastication, swallowing, and articulation. See Anatomy; Taste.

TONIC SOL FA.

System of writing music in a letter notation. It was first employed in teaching sight reading to children by Elizabeth Glover of Norwich. John Curwen, a non-conformist minister, devoted his life to improving and systematising the method.

It takes as its basis the major scale and the tonal relationships of the notes thereof. These are named Doh, Ray, Me, Fah, Soh, Lah, Te, and Doh, the key being stated. The minor scale is taught as an adjunct of the major, and is called the Lah mode. Sharpened notes always have the vowel "e," thus the raised fourth is called Fe; flattened notes have the

vowel "a" (pron. aw), thus the lowered seventh is Ta. In modulation, bridge tones are used, and the Doh changed according to circumstances. A chart called the modulator shows all these bridge tones. All measures are made of equal spacing.

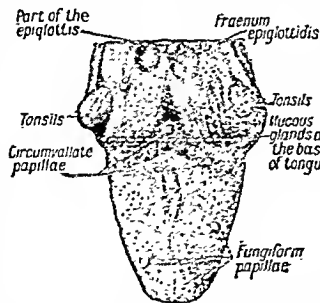
The Tonic Sol Fa College was founded in 1863 by the Rev. John Curwen to conduct examinations and to provide music teaching on Tonic Sol Fa lines. Its offices are at 26, Bloomsbury Square, London, W.C.

TONKA BEAN or **TONQUI BEAN** (Dipteryx odorata). Evergreen tree of the order Leguminosae, native of Guiana. It is about 60 ft. in height, and has alternate leaves divided into five or six leaflets. The violet-purple flowers are clustered, and are succeeded by short pods containing a single fragrant bean, which is used for scenting.

TONNAGE. Nautical term used to describe the size of a ship. Gross tonnage means the total cubical interior space of a merchant vessel. Net tonnage means the cubical space actually available for carrying cargo. The word ton used in this connexion indicates a space of 40 cubic ft. But when speaking of a warship's tonnage the actual weight (displacement) of the vessel in tons is meant.

Tonnage dues are charges paid by vessels on entering a port. They are calculated upon the registered net tonnage of a ship, this being its gross tonnage less allowances for the space occupied by the machinery, etc. They are devoted to the upkeep of the harbours and the maintenance of buoys, lights, etc. Tonnage dues are also charged upon ships passing through the Suez, Panama, and other canals.

TONSIL (Lat. tonsilla, a stake). Name of two prominent rounded glandular organs situated between



Tongue. Upper surface of the human organ, showing papillae and component parts

the pillars of the soft palate at the back of the mouth. They may consist mainly of lymphoid tissue, and are covered with mucous membrane. They are often removed when the seat of septic infection, especially in children, some medical men believing that this process is beneficial to health.

TONSILLITIS. Inflammation of the tonsils. Acute tonsillitis may result from cold or inhalation of impure air. When accompanied with suppuration within and around the tonsil, the condition is known as quinsy. Treatment consists in the

administration of a purge with inhalations of steam from hot water to which eucalypti or carbolic acid has been added. Hot fomentations on the neck and throat often give relief to the sufferer. When suppuration occurs, incision is necessary.

Chronic hypertrophic tonsillitis occurs in weakly children, often in association with

adenoids. The tonsils are enlarged, breathing through the nose is restricted, and the child usually breathes with the mouth open. In mild cases, change of air, administration of iron and cod-liver oil, and painting the tonsils with glycerin or tannic acid are usually beneficial; if not, it may be necessary to remove the tonsils. See Adenoid.

TONSON, JACOB (c. 1656-1736). English publisher. He started business in Chancery Lane, London, in 1678, moved later to Gray's Inn Gate, and then to the Shakespeare's Head in the Strand. He was secretary of the Kit-Cat Club, and is remembered as publisher of Milton's *Paradise Lost*, Rowe's *Shakespeare*, and works by Dryden, Addison, and Steele. Retiring in 1720, he died April 2, 1736. His nephew, Jacob Tonson (d. 1735), was his partner after 1712, and his great-nephew, also named Jacob Tonson (d. 1767), carried on the business.



Jacob Tonson,
English publisher

TONSURE (Lat. tonsure, to shear). In eccles. usage, the ritual shaving of the head, or a part of the crown, as a sign of admission to the clerical state and preliminary to taking holy orders. The Roman, or St. Peter's, tonsure was of the whole head except a narrow circle of hair; the Eastern, or St. Paul's, of the whole head; the Celtic, or St. John's, of the head in front of a line drawn from ear to ear. In practice, it is usual for only a small circle on the crown of the head to be shaven.



Tonsure of old Roman type

TONTINE. Method of life insurance. It owes its name to an Italian banker, Lorenzo Tonti. The main idea is that a number of persons contribute to a fund with which property is bought; the income is portioned between them, but as each one dies his share is divided between the others until the whole is enjoyed by the last survivor. In Great Britain and other countries the governments have raised money by tontines, and R. L. Stevenson used the idea in *The Wrong Box*.

TOOKE, JOHN HORNE (1736-1812). British politician. Son of John Horne, a London tradesman, he was born, June 25, 1736, and educated at Westminster, Eton, and St. John's College, Cambridge. Ordained in 1759, he held the cure of New Brentford, 1760-73.



John Horne Tooke,
British politician

Entertaining strong political views, he became an adherent of John Wilkes, with whom, however, he quarrelled in 1771. In 1777 his acknowledged sympathy with the N. American colonists was punished by fines and imprisonment. He assumed the name of his friend and patron, William Tooke, in 1782. He was elected M.P. for Old Sarum in 1801, but was excluded by an Act passed immediately afterwards, disqualifying clergy from sitting in parliament. He died March 18, 1812.

TOOLE, JOHN LAWRENCE (1832-1906). British actor. Born in London, March 12, 1832, it was in 1852 that he first appeared on the regular stage, his part being one in *The Spitalfields Weaver* at Dublin. In 1854 he made his debut in London—St. James's Theatre—and soon won a reputation by his presentation of humorous parts,

especially after 1859, when he was made the leading comedian at The Adelphi. From 1869-74 he was at The Gaiety, and later became proprietor of the Polly Theatre, which, as Toole's, had a successful period from 1882-93. Toole retired in 1893, and died at Brighton, July 30, 1906.



J. L. Toole,
British actor

TOOTH. In architecture, a tooth ornament is a decorative design consisting generally of a row of small sculptured four-leaved flowers, in a hollow moulding. See Dog Tooth; Moulding.

TOOTHACHE. Pain associated with disease of the teeth, most often due to caries or decay. When only the dentine, which lies beneath the enamel or hard exterior covering of the tooth, is involved, the pain is not very severe, but if the decay is extended to the deeper pulp of the tooth, the pain is often intense. Inflammation and swelling of the gums are often present in addition. The only satisfactory treatment is to have the tooth stopped, with or without killing the nerve, or if the decay is too far advanced, to have it extracted. The pain may be relieved by placing a small piece of cotton wool in the cavity of the tooth, soaked in camphorated chloroform, or, in severe cases, a strong solution of carbolic acid. If the latter is used, care must be taken to avoid touching the lips or gums with the carbolic acid. See Caries; Dentist; Teeth.

TOOTHWORT (*Lathraea squamaria*). Perennial root-parasite of the order Orobanchaceae, native of Europe and Asia. It has a thick fleshy white root-stock whose rootlets are attached to those of its victim, chiefly hazel. The stout whitish stems are from four to ten ins. high, clothed with broad scales in lieu of leaves, which are folded back upon themselves, enclosing several chambers whose walls are studded with stalked glands. See Root Parasites.

TOOTING. District of S.W. London, in the bor. of Wandsworth. It is divided into Upper Tooting or Tooting Bee, and Tooting Graveney, or Lower Tooting. Tooting Graveney and Tooting Bee commons form a large open space under the control of the L.C.C. In the dist. are Lambeth and Streatham cemeteries, Tooting Bee mental hospital, Grove fever hospital, and Wandsworth infirmary. Part of the dist., which is served by the Southern Rly., belonged to Bee abbey, Normandy.

TOOWOOMBA. Town of Queensland. On the Darling Downs, 100 m. W. of Brisbane on the main line to Sydney, it is an agricultural centre, with butter, condensed milk, and bacon factories, and contains foundries and government rly. works. Pop. 25,150.

TOPAZ. In mineralogy, a mineral aluminium fluosilicate. Yellow, green, blue, or red in colour with a glassy lustre, fine varieties of the mineral are valued as gem stones. It is found in gneiss or granite, and is frequently associated with tinstone, tourmaline, mica, beryl, etc. The deep orange yellow varieties of the mineral are most valued, and the finest stones have been found in the Ural Mts. and Brazil. Many so-called topazes are yellow varieties of quartz. See Gem.

TOPE (*Galeus canis*). Species of small shark. It is found in most of the tropic and temperate seas, and often occurs round the British coasts. It is about 6 ft long, and is grey on the back and whitish beneath. It spends most of its time on the bottom of the sea, feeding on fish, crustaceans, and echinoderms. See Shark.

TOPE. In Buddhist architecture, a dome-shaped monument, solidly built, for the

preservation of relics. Topes have either a polygonal, round, or square base, and are generally crowned by a finial called a tee. Those in Ceylon are called dagobas; the Ambustella Dagoba, Mihintala, is one of the most famous. When a dagoba has a definite commemorative purpose, it is known as a stupa. They are generally enclosed within a stone railing or other barrier.

TOPHETH or **TOPHET.** Word allied in sense to the Heb. Sheol and the Gr. Gehenna and Hades. It is applied to the valley of Hinnom (2 Kings 23, 10), where idolatries were practised, and where later the refuse of Jerusalem and the bodies of animals and criminals were burned. An expression of abhorrence, it means literally spittle or spitting, and it is frequently employed as a synonym for Hell (q.v.).

TOPIARY (Lat. *topiarius*, landscape gardener). In horticulture, the practice of clipping and cutting trees and shrubs into regular forms, human figures, animals, cups and saucers, peacocks, etc. Modern custom confines topiary work to solitary specimens, often grown in tuhs, and specially trained; but at some country mansions, notably Levens Hall, in Westmorland, and Elvaston in Derbyshire, whole topiary gardens of mature trees, in some instances over a hundred years old, are maintained. The trees which lend themselves to clipping are box, yew, and holly.

TOPLADY, AUGUSTUS MONTAGUE (1740-78). English hymn writer. Born at Farnham, he was educated at Westminster School and Trinity College, Dublin. He was ordained in 1762, and in 1768 he exchanged the living of Harford with that of Broad Hembury, Devonshire. He is remembered for his hymns, these including Rock of Ages, first published in The Gospel Magazine in 1775. He died August 14, 1778.

TOR. Striking and sometimes fantastic tabular or pillow-shaped rocky elevation. Tors often occur in granite regions which have been long exposed to weathering. There are some 170 on Dartmoor, the highest being High Willhays and Yes Tor (over 2,000 ft.).

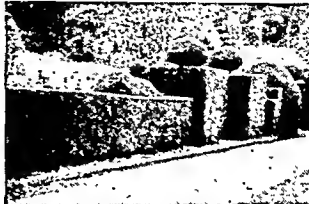
TOR BAY. Inlet on the S. coast of Devonshire. It is $4\frac{1}{2}$ m. across between Hope's Nose and Berry Head, and runs $3\frac{1}{2}$ m. inland. On its shores are Torquay, Paignton, and Brixham.

TORC or **TORQUE** (Lat. *torquis*, necklace). Personal ornament of one or more metal bars or bands, spirally twisted. Devised by the early Persians and Scythians, twisted necklets come sparingly from bronze age lake-dwellings; similar gold armlets occur in Scotland. In the early iron age they became a national ornament of the Celts. T. Manlius removed one from a Gaul, whence the family name Torquatus. The common Gaulish necklet was linged at the back, with ornamented terminals in front. The finest and most varied examples are Irish.

TORCELLO. Italian islet of the Adriatic Sea. It is 6 m. N.E. of Venice in the Venetian Lagoon. In the town is the former Byzantine cathedral of Santa Maria. Founded in the 7th century and rebuilt in the 9th century, it contains 12th century mosaics. Another interesting building is the 12th century church of S. Fosea, octagonal in shape, with colonnades. Pop. 223. See Venice.

TORMENTIL (*Potentilla erecta*). Perennial herb of the order Rosaceae. A native of Europe, West Siberia, and the Azores, it has a stout, almost tuberous root-stock, which is of an astringent quality and used for tanning. The stems are long, very slender, and hairy. The leaves are divided into three or rarely five oval wedge-shaped leaflets.

TORNADO. Destructive local whirlwind of great energy, usually developed within thunderstorms. A characteristic feature is the funnel-shaped cloud which hangs from the under-surface of the greater thunder cloud above. This funnel, which is created around the axis of a violent ascending vortex of whirling winds, advances with a deafening roar in an easterly direction at a rate varying from 20 to 40 m. an hour. The destructive activity of a tornado lasts from half an hour to an hour, its path varying in length from 5 to 30 m., and in breadth from a few hundred feet to a quarter of a mile or more. Tornadoes, like thunderstorms, almost invariably originate in the S. or S.E. part of a

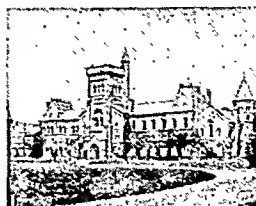


Topiary. Clipped hedge and shrubs at Compton Wynates

cyclonic depression. Tornadoes are especially abundant in the Mississippi and Ohio basins, where the open plains in close association with the warm gulf of Mexico provide the physical conditions necessary for their formation. They are not found in arid countries. Over the ocean tornadoes are called waterspouts.

TORONTO. City of Canada, capital of Ontario. It stands on a bay of Lake Ontario, 333 m. by rly. from Montreal. It is served by the C.P.R. and C.N. Rlys., and from here steamers go regularly to various Canadian and American ports. Notable buildings include those of the government of Ontario, the city hall, Union Station, opened by the Prince of Wales in 1927, and the Royal York Hotel. The legislature has a fine block in Queen's Park. There are Roman Catholic and Protestant cathedrals. The educational institutions include the university of Toronto, which originated in 1827, and in 1887 was reorganized as a teaching university.

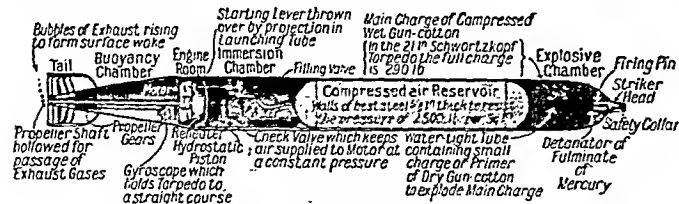
The business and older part of Toronto centres around Yonge Street, while suburbs have grown up on the slopes rising from the lake. The city is a banking and distributing centre. There is a harbour with a good deal of shipping, but almost all of it is import trade. For many of its industrial establishments power is obtained from the hydro-electric undertakings at Niagara Falls. There are several public parks. Centre Island is a pleasure resort.



Toronto, Canada. 1. Main Arts building of the University. 2. Buildings of the Provincial Legislature, which stand in Queen's Park. 3. Anglican cathedral of St. James, built in 1858

Toronto was founded in 1794, its first name being York, on the site of a fort erected by the French in 1749. Since 1797 it has been the capital of Ontario. Its population increased enormously between 1871 and 1930. Pop. 569,899. See Canada.

TORPEDO. Cigar-shaped vessel of steel or bronze carrying a charge of high explosive, and used as a weapon by aircraft and all naval warcraft. It was devised by Whitehead about 1870, and is a small submarine in itself, in three main sections: the head, which contains the charge and the firing gear; the main body, which contains a chamber for compressed air to drive the engines; and the engines astern. It is fired from a special kind of gun



Torpedo. Longitudinal section of a Whitehead torpedo

(torpedo tube), and travels under its own power in the water. The charge of T.N.T. or wet gun-cotton is exploded by a rod or trigger in the nose striking the target. The engines, two in number, drive two propellers which revolve in opposite directions. The steering is controlled by a gyroscope.

TORPEDO BOAT. This is a small vessel built to carry the torpedo. The earliest type, constructed in 1873, were small launches. Rapid increase in size and speed followed, but such craft were always defective in their sea-keeping qualities. The modern equivalent is the destroyer (q.v.).

TORPEDO TUBE. Type of gun from which a torpedo is discharged by means of compressed air or a charge of high explosive, just sufficient impulse being given to throw the torpedo well clear of the ship. These tubes are of two kinds: those mounted on deck, usually in pairs or in threes, as in destroyers, and so constructed that they can be trained; and those built into the hulls of ships, which usually do not admit of training.

TORPHICHEN. Colliery centre of Linlithgowshire, Scotland. It is 4 m. S.W. of Linlithgow, and grew round a hospital or preceptory of the Knights of S. John of Jerusalem. Pop. 4,000.

TORQUAY. Borough, seaport, and watering place of Devonshire. On the S. coast, it stands on hills above Tor Bay and is 26 m. from Exeter, on the G.W.R. Its mild climate attracts many visitors. There are theatres, gardens, and other attractions, as well as facilities for yachting, golfing, and bathing. Interesting ruins include those of Tor Abbey. In Kent's Cavern have been found remains of prehistoric man. There is trade in coal, stone, etc., and marble and terra-cotta are worked. Pop. 39,432.

TORQUEMADA, TOMÁS DE (1420-98). Spanish inquisitor. Born at Valladolid, he entered the order of S. Dominic, and became confessor to Isabella, afterwards queen, and later to her husband Ferdinand. Prior of the monastery at Segovia for 22 years, he obtained in 1478 the establishment of the Inquisition in Spain, and in 1483 was made inquisitor-general. The extreme severity of the regulations laid down by him led to murmurings, even among the clergy and in Rome itself, but he maintained his position until 1494. He was one of the chief instigators of the conquest of Granada and the expulsion of the Jews. Torquemada was in daily danger of his own life, but he died a natural death, Sept. 16, 1498, at Avila. See Inquisition.

TORRENS. Lake of S. Australia. It occupies the N. portion of the Great Valley of S. Australia, 90 m. N. of Spencer Gulf, and is 130 m. long, 20 broad, and 80 ft. above sea level. It was discovered by Eyre in 1840.

TORRENS, SIR ROBERT RICHARD (1814-84). Australian statesman. Born at Cork and educated at Trinity College, Dublin, he emigrated to South Australia in 1840. Collector of customs the following year and colonial treasurer in 1852, he was elected to the first parliament three years later, and became prime minister in 1857. He then introduced the Torrens Act, and spent the next few years travelling through Australia to explain its working. On retiring in 1863, Torrens returned to England and was M.P. for Cambridge, being knighted in 1872. He died at Falmouth, Aug. 31, 1884.

The Torrens Act provided for the conveyance of property by registration instead of the cumbersome methods then in vogue, the owner holding a certificate instead of deeds, and having his title guaranteed by the state.

TORRES STRAIT. Sea passage between Cape York Peninsula, Queensland, and New Guinea. It is about 90 m. in width, and contains numerous islands, chief of which is Thursday Island (q.v.). About 1890 the strait became celebrated as a pearling ground. It also yields *bêche de mer* (q.v.).

TORRES VEDRAS. Town of Portugal. It is 24 m. N.W. of Lisbon, is the centre of a vine-growing dist., and has hot sulphur baths and a Moorish castle. It was from here that Wellington's famous lines stretched to the Tagus. Pop. 8,413.

The threefold lines consisted of over 100 forts, linked together by entrenchments and inundations, covering some 500 sq. m. of mountainous country between the Tagus and the sea into a gigantic entrenched camp.

TORRIDGE. River of England, in Devonshire. It rises 4 m. S.E. of Hartland Point and flows S.E., E. and N.W. to join the Taw estuary at Barnstaple Bay. See Bideford.



Torquay, Devonshire. Town and harbour from Vane Hill, looking towards Tor Bay and Brixham

TORRIDON, LOCH. Fiord inlet on the W. coast of Scotland, in Ross and Cromarty. Torridon village is at the head of the loch, and near it is Torridon deer forest.

TORRINGTON, GREAT. Borough and market town of Devonshire. Standing on a hill above the Torridge, 7 m. S.S.E. of Bideford, it has a station on the Southern Rly. The ruins of the castle, built in 1340, were demolished in the 18th century, and near the spot stands a Waterloo column, erected in 1816. Glove making and agriculture are the principal industries. Market day, Sat. Pop. 3,011.

TORRINGTON, GEORGE BYNG, VISCOUNT (1663-1733). English sailor. Born Jan. 27, 1663, he entered the navy in 1678 and saw

considerable service before he sailed in 1684 to the East Indies. In 1688, as an agent of the prince of Orange, he won many of the senior captains of the fleet to the prince's cause. He commanded the naval operations at the capture of Gibraltar and took part in the battle of Malaga, 1704. In 1708 he dispersed the attempted invasion of England. He was sent to the Mediterranean to prevent a Spanish invasion of Italy, and totally destroyed the Spanish fleet off Cape Passaro, July 30, 1718. Returning to England in 1720, he was created Viscount Torrington, made first lord of the admiralty, 1727, and died Jan. 17, 1733.



Viscount Torrington, English sailor

TOR ROYAL. Royal residence situated near Princetown, Devonshire, under the tor of the same name. Once the residence of one of the agents of the duchy of Cornwall, it has been partly rebuilt and converted into a residence for the prince of Wales.

TORSION (Lat. *torquere*, to twist). In mechanics, the strain produced in a solid body when parallel planes are turned relatively to one another round an axis perpendicular to them. If one end of a cylindrical wire is kept fixed and the other end is twisted by a mechanical force, and if under this twisting stress the wire turns through an angle, then it is found that, so long as the angle is not too great, it is proportional to the applied force, e.g. if this applied force, or couple, is doubled, the angle through which the end of the wire is twisted is also doubled. The ability of substances to recover from torsion varies; quartz, steel, glass, etc., will suffer a considerable torsion and when it is removed regain their original forms. Copper or lead, on the other hand, will not recover from even small twists.

TORT (Fr. *tort*, wrong). Term in English law to express a wrongful act, other than a breach of contract or a crime, for which an action for damages will lie at the suit of the person wronged.

Torts may be classified in many ways, but it is most convenient, if not most scientific, to divide them into (1) wrongful acts which in themselves give rise to an action; (2) wrongful acts which are only actionable if actual pecuniary loss and damage are proved. In (1) damages are not, and in (2) damages are, of the essence of the cause of action. An infant is liable for his torts, though not on his contracts; and in England a husband is responsible for his wife's torts.

TORTOISE. Name given to the land species of the order Chelonina of the reptiles, the aquatic species being known as terrapins and turtles. The skeleton is partly external and forms a bony box or shell for the animal's protection. None of the tortoises has teeth, but the jaws are cased with horn to form a cutting beak. In most species the carapace is covered with bony plates, often finely mottled: the tortoiseshell of commerce is the production of the hawksbill turtle.

Tortoises are found in the warmer regions of the world, some six species occurring in S. Europe. They feed mainly on plants. In the cooler districts they hibernate in the ground during the winter. They are renowned for their longevity, especially the giant tortoises, now confined to the Galapagos Islands in the S. Pacific, and to certain islands in the Indian Ocean. These are sometimes between four and five feet long. The Greek tortoise of S. Europe (*Testudo graeca*) is from 6 to 10 ins. long, and has the carapace mottled with yellow and black. It is used for food in Italy and Sicily. See Terrapin; Turtle; also illus. p. 1342.



Tortoise. 1. Species in the London Zoological Garden, the giant being *Testudo elephantina*, from the Seychelles. 2. Common European tortoise. See p. 1341

TORTOISESHELL BUTTERFLY. Popular name for two species of butterfly, natives of Europe (including Britain) and Asia. The large tortoiseshell has scalloped wings, which are dull orange-brown, blotched and spotted with black and margined with black: on the hindwing five blue crescents unite with the black border. The small tortoiseshell (*Aglais urticae*) is a much more plentiful and a brighter insect, and the blue crescents margin all the wings. See Butterfly.



Tortoiseshell Butterfly. *Vanessa urticae*, a hibernating species
John J. Ward, F.E.S.

TORTURE (Lat. *tortura*, torture). Infliction of unduly severe bodily pain to force persons to confess, or to give some information. In early times torture was the recognized punishment meted out by the conqueror to his captives. In Greece and Rome slaves were tortured almost as a matter of course to obtain from them evidence in trials. In Europe during the 14th century and in England in the 15th torture was rampant in its worst forms. It became part of the common law of most European countries, but was never recognized by English common law, though made use of as a kind of royal prerogative. State prisoners in the Tower were often put to the torture, but in 1628 the English judges laid it down that torture as such was illegal. Torture methods in state trials existed till the 17th century in England, and later in France and Germany. The instruments of torture included the rack, the thumbcrew, the boot, and pincers. See Inquisition; Rack; Thumbcrew.

TORY. Name given in Great Britain to a political party. Although the word was used in the time of the Commonwealth, its present use dates from about 1678. The supporters of Charles I and II in Ireland were known as Tories, from an Irish word meaning "come, O king," and, during the debates on the Exclusion Bill, someone applied the term contemptuously to those who opposed that measure.

Like Whig, it soon became the designation of a party in the state. Under the influence of Peel and Disraeli the Tory party became the Conservative and then the Unionist. See Conservative; Unionist; Whig.

TOSTI, SIR FRANCESCO PAOLO (1846-1916). Italian-British composer. Born at Ortona, April 9, 1846, he studied music at Naples, and also taught

there until 1869. Encouraged in his early composition by Sgambati, he secured a court appointment in Rome, and in 1875 paid his first visit to England. In 1880 Tosti became singing teacher to the royal family, and settled in London. He became a naturalized British subject, and was knighted in 1908. He composed numerous songs which enjoyed great popularity, e.g., Good-Bye, Ask Me No More, and died in Rome, Dec. 2, 1916.

TOSTIG (d. 1066). Anglo-Saxon noble. A younger son of Earl Godwin, he was made earl of Northumbria in 1055. His unpopularity, largely due to severity, led to a revolt in 1065, and the earl was declared an outlaw his brother Harold concurring in this sentence. For some months he lived abroad, taking part in raids on the west of England. He joined Harold Hardrada in invading England, and was killed at Stamford Bridge, Sept. 25, 1066.

TOTALISATOR. Machine used for betting on horse races and other sporting events. In 1928 its use was legalised in Great Britain, and a number were then installed on the racecourses. They are worked by electricity, and automatically record the number of bets on a given horse with the amount of money due to the successful backers. They are controlled by the Betting Control Board. See Betting.

TOTEMISM. Term used in anthropology. It is employed in two senses, viz.: (1) A specific magical relation between a group of people, called a totem kin, or sept, and a species of animals, plants, or other objects, individual members of which are called by Europeans totems. (2) A form of social organization in which a tribe is divided into exogamous kins or clans, each believed to consist of blood relatives tracing their descent from a single ancestor.

Some features of totemism are (1) the totem must not be touched, killed, eaten, kept in captivity, or even looked at; (2) the kin claims that its ancestors were transformed totem animals, that its members are reincarnated totem animals, or that the totem has a claim on its gratitude; (3) carvings of totemic animals are set up, or their forms are tattooed on the body of the kinsman; (4) the totem is called a brother; (5) dead members of the animal species are solemnly buried; (6) captive members are bought and freed.

TOTHILL FIELDS. Formerly an open space of Westminster, part of which extended S. from Victoria Street towards the Thames. Its name derives from a mound or hill of outlook near Regency Street. Royal solemnities and jousts, fairs, markets, and duels took place here, and the fields served as a playground for the boys of Westminster School.

TOTNES. Borough and market town of Devonshire. On the Dart, 9 m. W. of Torquay, it is an old town, with a long High Street, many of the houses overhanging to form covered footways. The parish church contains a fine rood screen. There is a fine example of a ruined Norman castle, which retains its original battlements, and one of the old gates. In 1928 Mr. S. P. Adams, a stockbroker, left £100,000 to Totnes, his native town. Market days, Tues. and Fri. Pop. 3,982.

TOTTENHAM. Urban dist. of Middlesex. It has Upper Edmonton N., Finsbury Park and Stamford Hill S., Wood Green W., and the E. London waterworks E., and is served by

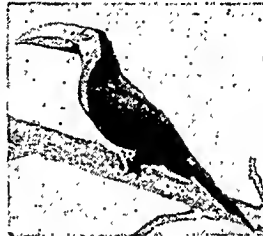
the L.M.S. and L.N.E. Rlys. The parish church of All Hallows has some notable memorials: one of its bells was taken at the siege of Quebec in 1759. The High Cross, mentioned in Walton's Compleat Angler, dates from about 1600-9. From seven elm trees which once stood on Tottenham Green is named Seven Sisters Road. Pop. 149,200.

The London thoroughfare Tottenham Court Road is a link between Charing Cross Road and Hampstead Road. It is named after the prebendal manor of Tothill, Totenhall, or Tottenham Court, once belonging to the dean and chapter of S. Paul's Cathedral.

TOTTENHAM HOTSPUR. English professional football club. It was founded in 1882 by boys associated with a Tottenham school, who first played on Tottenham Marshes, and later acquired an enclosed ground in the neighbourhood. In 1895 it became a professional organization. In 1901, and again in 1921, the Hotspur won the Association Cup. In 1909 the club was admitted to the Football League (Div. I). The ground is in High Road, Tottenham. Their colours are white shirts and dark blue knickers.

TOTTINGTON. Urban dist. of Lancashire. It is 2½ m. from Bury, on the L.M.S. Rly. The chief industries are calico printing and cotton spinning. Pop. 6,760.

TOUCAN. A family of birds (Rhamphastidae) of the sub-order Picidae or woodpeckers. Found in the forests of central and tropical S. America, they possess gaudily coloured beaks, which, though huge, are thin and light.



Toucan. Green billed species of the South American bird

There are over 60 species of toucans, and they are very common in the forests of Brazil, notwithstanding the diligence with which the natives kill them for food. They feed mainly on fruit.

TOUCH. One of the five senses. The special organs which convey impressions of touch to the brain are minute corpuscles and bulbs situated in the skin in close association with the fine filamentous terminations of nerves. These corpuscles are of several varieties, and it seems probable that different forms convey different sensations.

Tactile sensation is most acute over the tip of the tongue, and the points of a pair of compasses will be recognized as two points when applied to the tongue if they are only separated by 1-24th of an inch. On the tip of the forefinger the distance must not be less than 1-12th of an inch before two points are felt; on the palm of the hand 5-12ths; and on the back of the body and many parts of the limbs the separation must be as much as 1 to 2 ins. See Aesthesiometer.

TOUCH-ME-NOT. Popular name of a British plant (*Impatiens noli-tangere*), so called because at the slightest touch its seed-pods throw out their seeds. It belongs to the order Balsaminaceae. See Balsam.

TOUCHSTONE OR LYDIAN STONE. In mineralogy, a hard black variety of quartz. Gold rubbed across the stone leaves a streak, which is moistened with a mixture of nitric and hydrochloric acids. A comparison of the effect of the mixture on streaks made with alloys of known composition enables the expert to determine approximately the fineness of the gold being tested. The stones originally used were a bituminous quartz from Lydia.



Sir Paolo Tosti, Italian-British composer

By courtesy of Ricordi & Co.

TOUCHWOOD (*Fomes ignarius*). Woody fungus of the order Polyporiaceae. It is very destructive to forest and orchard trees. The visible portion is a hard, hoof-shaped bracket about 6 ins. across, with concentric zones above, ultimately black. The under side is convex and cinnamon coloured. New growths are added to the margin and underside each spring. Thin slices of the woody material, if ignited, will smoulder until completely consumed.



Touchwood growing on a beech trunk

TOUGGOURT. Town and territory of the Sahara, in S. Algeria. The town, which is about 120 m. S. of Biskra, has a trade in dates. Pop., town, 2,000; territory, 212,783.

TOUL. Town of France. It is 14 m. from Nancy, and stands near the Moselle. The church of S. Etienne, the former cathedral, is famous for its elaborate west front and its cloisters. The hôtel de ville was formerly the bishop's palace. In 1552 it was taken by the French and made into a strong fortress. It capitulated to the Germans in 1870, but was restored to France at the peace, after which the French fortified it anew. Pop. 11,633.

TOULON. Town and seaport of France. It stands on a bay of the Mediterranean, 42 m. from Marseilles. One of the chief naval stations of France, it is strongly fortified, has a good harbour, and its dockyards can accommodate the largest battleships. Connected with it are an arsenal and other naval establishments. The town has shipping and steamboat services. The buildings include the church of S. Marie Majeure, formerly the cathedral, and a fine building for the museum, art gallery, and library. Pop. 115,120.

TOULOUSE. City of France. It stands on the Garonne, 443 m. S.W. of Paris. It is a manufacturing and market town, being served by a network of rlys. and canals, including the Canal du Midi. Its industries include the making of silk and woollen goods, flour, tobacco, agricultural implements, and boots and shoes, and it is a market for the agricultural produce of Languedoc, and a banking and commercial centre. It has an archbishop. The cathedral, of various periods, has a choir with 17 chapels. The church of S. Sernin is one of the finest Romanesque basilicas in existence. The beautiful church of the Jacobins is notable, and so are Notre Dame de la Dalbade and Notre Dame de la Daurade. The city has a university which was founded about 1230 and was once famous as a school of law. In the Middle Ages Toulouse was a stronghold of the Albigenses. Pop. 180,800.

BATTLE OF TOULOUSE. The last action in the Peninsular War, fought April 10, 1814. Wellington crossed the Garonne and attacked Soult on the heights E. of Toulouse, winning a rather doubtful victory at a cost of some 8,000 men. The battle was fought in ignorance of the fact that Napoleon had already abdicated.

TOURCOING. Town of France. It is 2 m. from Ronbaix and 7 m. from Lille, being on the frontiers of Belgium. It is a centre for the manufacture of woollen goods and other textiles, including cotton. Carpets, machinery, hosiery, and soap are made, and there are dyeing establishments and sugar refineries. It was occupied by the Germans, 1914-18. Pop. 80,678.

TOURMALINE. In mineralogy, a complex aluminium borosilicate containing varying proportions of iron, magnesium, fluorine, chromium, etc. The mineral ranges from colourless through blue, green, red, and brown to black, with a glassy lustre. Many of the coloured varieties are highly prized as gem stones. Tourmaline is remarkable for being the most dichroic of all gem stones, making it of great value in the construction of optical apparatus and for optical purposes. See Gem.

TOURNAI (Flemish, Doornyk). City of Belgium. It lies on the Schelde, 52 m. by rly. W.S.W. of Brussels, and is a busy rly junction. There are carpet making ("Brussels" carpets), tanning, quarrying, and hosiery, chocolate, chalk, and cement industries, and busy river traffic, especially in coal from the Mons coalfield. It is the seat of a bishop and a military centre. The cathedral of Notre Dame dominates the city. Other churches of note are those of S. Quentin and S. Brice. The Pont des Troues dates from the 13th century.

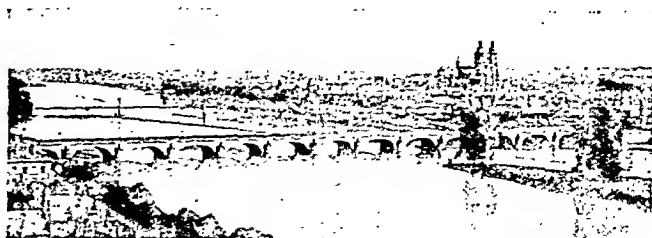
In the Great War it was entered by Germans, Aug. 23, 1914. There was sharp fighting in the suburbs, Oct.-Nov., 1918, before its capture by the British on Nov. 8. Pop. 35,972.

TOURNAMENT. Medieval mock combat between mounted men. Named from the tournament, or quick turning of the horses, it appeared in Europe in the 11th century, and quickly grew in popularity, both in France and England, where, in the reign of Henry II, it became necessary to prohibit tournaments owing to extravagant indulgence in them. There is a graphic account of a tournament in Ivanhoe, and Froissart is a mine of information on the subject.

The essential feature was the single combat of knight with knight, each striving to unhorse or incapacitate his opponent, the usual weapon being the lance. Sometimes, however, one body of knights fought against another. They took place on occasions of rejoicing.

The royal tournament is an annual naval and military spectacle held in London. Formerly known as the Royal Naval and Military Tournament, it dates from 1879. Originally held in the Royal Agricultural Hall, it is now held at Olympia. In it officers and men of the navy, army, and air force take part.

TOURNIQUET. Instrument, the essential part of which consists of a band passing round a limb, by which the blood vessels can be compressed. It is used to stop bleeding or prevent haemorrhage during an operation. See First Aid.



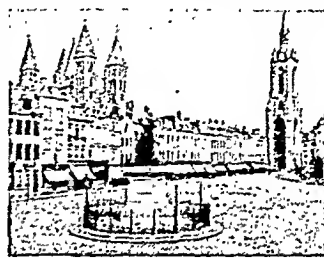
Tours. View of the city from the bank of the Loire, showing bridges over the river and the twin towers of the beautiful 12th century cathedral

TOURS. Town of France. It stands in the valley of the Loire, 145 m. from Paris. The Gothic cathedral has a façade of great beauty, and towers crested by cupolas. In a garden behind the cathedral are Roman walls and remains of an amphitheatre. Conspicuous features of the town are two towers, relics of the abbey church, the rest perishing in 1790.

The city's association with S. Martin made it famous ecclesiastically. Its abbey was also notable, and the city thrived on the gifts of the pilgrims who came to the shrine of S. Martin. It was until the Revolution the capital of Touraine. Pop. 77,192.

TOUSSAINT L'OUVREURE (1746-1803). West Indian negro leader. He was born

a slave on a plantation in Haiti, May 30, 1746, his real name being François Dominique Toussaint, that of L'Ouvreure being added later, it is said on account of his bravery in making a breach (ouverture) in the enemy's ranks. In 1791, after having aided his master and his family to escape, he took part in the negro insurrection, and in 1794 joined the French republicans. Appointed commander-in-chief of the



Tournai. The Grand Place with the Belfry on the right and the towers of the cathedral showing on the left

island in 1797, he drove out the French royalists, the British, and the Spaniards, and brought the island into a state of tranquillity and prosperity. He was captured by the French, May 7, 1802, sent to France, and died in a dungeon in the Jura, April 27, 1803. He is subject of a sonnet by Wordsworth.

TOWCESTER. Market town of Northamptonshire. It is 8 m. from Northampton, on the L.M.S. Rly., and near Watling Street. The 11th century church of S. Laurence, with a fine Perpendicular tower, contains an altar tomb (1448), old brasses and monuments, and some chained black letter books. The Pomfret Arms is referred to in The Pickwick Papers as The Saracen's Head. Market day, Tues. Pop. 2,383.

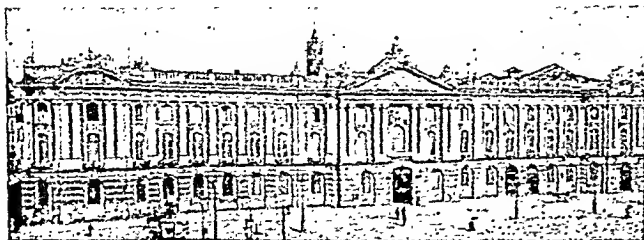
TOWER. In its widest sense, any structure that is high in proportion to its lateral measurements; in the narrower, a structure standing on the ground, and rising therefrom without any serious break in its verticality.

The large Norman church had towers to mark the terminations of the aisles, and often another tower at the intersection of the cross. These were increased in height during the Early English period, the spire was added, and in the Perpendicular style tower and spire together achieve their limit of height. The highest tower in the world is the Eiffel Tower in Paris. See Babel, Tower of; Campanile; Eiffel Tower; Pagoda; Pisa; Round Tower.

TOWER HAMLETS. Name given to certain liberties near the Tower of London. They consist of districts in the boroughs of



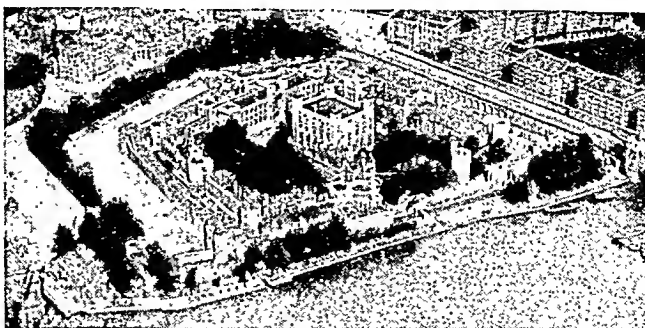
Toussaint L'Ouvreure, West Indian negro leader



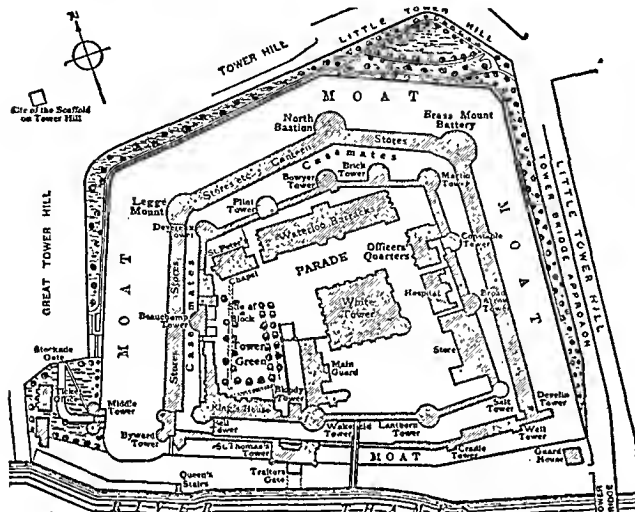
Toulouse. The Capitole or city hall, dating from the early 17th century

Poplar, Shoreditch, Stepney, and Bethnal Green. The name is remembered chiefly because, prior to the Act of 1918, they returned 7 members to Parliament, the Hamlets being divided into the divisions of Bow and Bromley, Limehouse, Mile End, Poplar, St. George's in the East, Stepney, and Whitechapel.

TOWER OF LONDON. Ancient fortress, palace, and prison on the left bank of the Thames. It covers 13 acres. Apart from a section of Roman wall, its oldest structure is the White Tower or keep, built in 1078-80. On the first floor is Queen Elizabeth's armoury, originally the sub-crypt of St John's Chapel, one of the finest Norman chapels in England. Underneath the S. staircase some bones found in Charles II's time were identified as remains of Edward V and his brother; they were removed to Westminster Abbey in 1678.



Tower of London from the air. The buildings constituting the Tower can be identified from the plan below. The narrow belt of trees beyond the drained moat is a public garden
Surrey Flying Services



Tower of London. Plan of the ancient buildings and modern barracks

The Tower is surrounded by a moat, drained in 1843, between which and Tower Hill are gardens, and has Tower Wharf on the river front. Waterloo Barracks, to the N. of the White Tower, serve for the garrison.

Near the Tower is Tower Hill. Here, on the site covered by Trinity Square Gardens, political prisoners were executed. These have included such famous men as Sir Thomas More, the duke of Somerset, Strafford, and Laud.

The Tower Bridge crosses the Thames near the Tower of London. It was opened in 1894 and carries a roadway 49 ft. in width. The central, or bascule, span consists of two cantilever arms which meet in the centre and are opened and closed by hydraulic machinery to admit the passage of ships.

TOWN (A.S. tun, hedge, enclosure). Originally the name given to the primitive settlement of the community surrounded by a hedge. As population grew and commerce developed, town became distinguished from village. In England the distinction was popular rather than precise and legal, except in the case of the boroughs and cities. It was based merely on size and importance, on the development of industries, and on the growth of markets. See Borough.

TOWN COUNCIL. This is an elected body for managing the affairs of a city or town. For the former the term city

Jan. 3, 1805, this valuable collection was bought by the British Museum.

TOWNELEY PLAYS. These are a collection of early dramatic pieces. Probably made about the close of the 14th century, they were preserved in the library of Towneley Hall, Lancashire. There are thirty-two pieces presenting the Bible story, from the Creation to Doomsday, in a familiar and sometimes broadly humorous fashion. At Sotheby's on Feb. 8, 1922, the MS went to Dr. Rosenbach, of Philadelphia, for £3,500.

TOWN PLANNING. Method for securing better housing by making definite plans for the

council is sometimes used, and in Scotland they are called hugh councils. In England, in their present form, they date from the Municipal Corporations Act of 1834; the town councils of earlier date were usually nominated and often corrupt.

TOWNELEY, CHARLES (1737-1805). British collector. Born at Towneley Hall, near Burnley, Oct. 1 1737, he studied ancient art in Rome and Florence, and with the assistance of Gavin Hamilton and others, amassed a fine collection of marbles and terra-cottas, drawings, MSS., bronzes, gems, and coins. After his death in London,

number of such had been prepared when the Great War broke out. Progress was renewed after the end of the struggle. In 1928 it was reported that 625 areas, covering over 3,000,000 acres, were being planned by 395 local authorities. See Garden City; Housing.

TOWNSHEND, CHARLES TOWNSHEND, 2ND VISCOUNT (1674-1738). British politician. The eldest son of Horatio, Viscount Townshend, he became viscount in 1687.



2nd Viscount Townshend. British politician After Eneller

After diplomatic experience in the Netherlands he was chosen, in 1714, a secretary of state, and became one of the leading ministers of George I. In Dec., 1716, he left office, but he returned in 1720 as president of the council. He was a secretary of state, 1721-30, his brother-in-law, Walpole, being his chief colleague. Townshend, who died at Raynham, June 21, 1738, was known as Turnip Townshend.

Townshend's grandson, Charles Townshend (1725-67), was the politician who, as chancellor of the exchequer, imposed taxes on the American colonists in 1766. George Townshend, the 4th viscount, was made a marquess in 1787. The 7th marquess (b. 1916) succeeded his father, 1921.

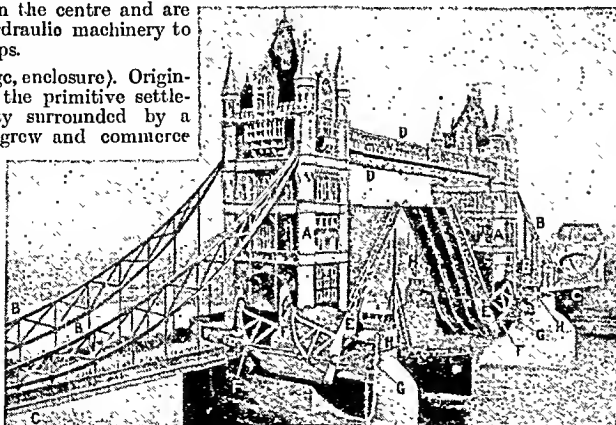
TOWNSHEND, SIR CHARLES VERE PEREGRINE (1861-1924). British soldier. Born Feb. 21, 1861, grandson of Lord George Townshend, he entered the Royal Marines, and saw service in the Suakin operations and the Nile expedition. Having joined the Indian army, he came into notice by his gallant defence of Chitral. He was at Aden and Khartoum, 1898, and served in the S. African war, 1899-1900. In the latter year he was transferred to the British Army, joining the Royal Fusiliers. He became major-general, 1911, and commander of a territorial division in 1912. Townshend returned to India in 1913.

Early in 1915 he was sent to Mesopotamia at the head of a division, and after gaining several victories had to retreat to Kut, which he defended for five months. Taken prisoner after the fall of Kut, Townshend was removed to Constantinople, and was interned in Prinkipo Island. In 1920 he was returned to parliament for the Wrekin division. He died May 18, 1924. See Kut.

TOWNSHIP OR VILL. Territorial division of Anglo-Saxon and medieval England. In pre-conquest times the township (A.S. tūnscipe) was the area occupied by the inhabitants of an enclosed homestead or village. The term was later applied to the community



Sir Charles Townshend, British soldier Bassano



Tower Bridge. Diagram showing construction. A, masonry towers enclosing steel piers; B, steel suspension plate chains holding C, the bridge, and D, overhead girders; E, bascules or cantilever roadway sections, shown raised; F, gearing for raising bascules; G, hydraulic operating motors; H, control and operating houses

of inhabitants of a manor or parish within a hundred (q.v.). In the U.S.A. a township is a sub-division of the county, with varying powers of local government.

TOWNSVILLE. Seaport of N. Queensland. It stands on Cleveland Bay, 748 m. N. of Brisbane. Its harbour serves as outlet for a sugar growing and grazing dist. Townsville is the seat of the Australian Institute of Tropical Medicine, founded in 1910. Pop. 30,700.

TOWTON. Parish of Yorkshire (W.R.). It is famous for the battle fought here, March 29, 1461, between the Yorkists and Lancastrians, which ended in the rout of the Lancastrians. 33,000 men are said to have fallen. See *Roses*, Wars of the.

TOWY. River of Wales. It rises among the hills that divide Cardiganshire from Radnorshire, and falls into Carmarthen Bay at Llanstephen. Its length is 66 m., and Carmarthen is on its banks.

TOWYN. Urban dist. and watering place of Merionethshire, Wales. It stands on Cardigan Bay, 12 m. N. of Aberystwith, and has a station on the G.W. Rly. Pop. 4,411.

TOYNBEE, ARNOLD (1852-83). British economist. Born in London, Aug. 23, 1852, son of Joseph Toynbee (1815-66), a surgeon, he was educated at Oxford. He became a vital influence in the social movement of his time. He made a special study of economics, charity organization, cooperation, and church reform, and was a close student of philosophy, history, and religion. He lectured to working class audiences in different parts of the country, and associated himself with the Rev. Samuel A. Barnett in work among the poor in the East End of London. He died at Wimbledon, March 9, 1883.

His nephew, Arnold J. Toynbee (b. 1889), had a brilliant career at Oxford and made himself an outstanding authority on international affairs. In 1925 he was made professor of international history in the university of London, and director of studies at the institution of international affairs.

TOYNBEE HALL. This university settlement in London was inspired by the work of Arnold Toynbee. It was opened in Commercial Street, Whitechapel, with the Rev. S. A. Barnett (q.v.) as warden, Dec., 1884, the first of its kind.

Trabzon. Alternative name of the town in Asia Minor better known as Trebizond (q.v.).

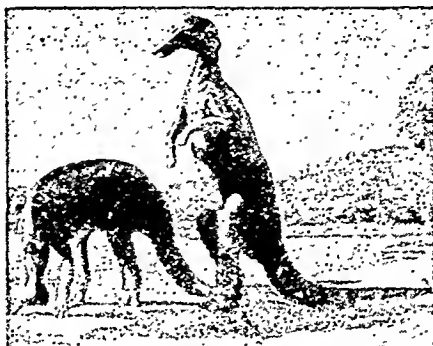
TRACERY (Fr. traier, to trace). In architecture, the ornamental stonework of a Gothic window which followed the grouping of lancet windows in twos and threes under a single arch. The term is also applied to the corresponding decoration of a wood panel. The earliest form of tracery was known as plate tracery. In the 12th century this was a circle or quatrefoil introduced into the tympanum below the covering arch. Geometrical tracery possessed symmetrical forms such as trefoils, cinquefoils, quatrefoils, and circles. Flowing tracery followed, and late in the 14th century began to give way to the more vertical and stronger bars of the Perpendicular period, and with the Renaissance tracery disappeared. See *Architecture*; *Perpendicular*.

TRACHEA or **WINDPIPE.** Nearly cylindrical tube which extends from the lower border of the larynx in man. It is about $4\frac{1}{2}$ ins. long and $\frac{3}{4}$ in. in diameter, and terminates by dividing into the two bronchi. The trachea consists of a series of from 16 to 20 stiff cartilages in the form of a U. Behind the trachea is the oesophagus or gullet. The word is the Gr. tracheia (rough), an epithet applied to the arteria (windpipe) to distinguish it from the smooth arteries and veins through which the blood flows. See *Throat*.

TRACHEOTOMY. Operation of opening the trachea in the neck to allow passage of air

to the lungs when breathing is difficult or arrested by some obstruction in the air passages above the trachea. The operation is most frequently required in oedema of the larynx, diphtheria, tumours, or foreign bodies obstructing the air passages. After the windpipe has been opened in the neck a metal tube is passed through for respiration purposes. This actually consists of an inner and an outer tube, the former of which can be removed and cleaned whenever necessary.

TRACHODON (Gr. trachys, rough; odous, tooth). Extinct fossil dinosaur found in the Upper Cretaceous deposits. It resembled an iguanodon (q.v.) in appearance, with a broad spatulate snout, and remains of the reptile have been found in Wyoming, Montana, and other states of the U.S.A.



Trachodon. Restoration of the extinct reptile which lived in N. America in the Cretaceous period
By courtesy of the American Museum of Natural History

TRACHOMA. Contagious disease of the conjunctiva or membrane covering the front of the eye and inner surface of the eyelids. See *Conjunctivitis*.

TRACTARIANISM. Alternative name for the Oxford Movement (q.v.). Its method of propaganda by means of a series of Tracts for the Times, 1833-41, gave its leaders and followers the name of Tractarians.

TRACTOR. Primarily a machine for drawing, and specifically a traction engine. The word is more particularly used for agricultural tractors used for ploughing, sowing, threshing, etc. See *Caterpillar Tractor*.

TRADE, BOARD OF. Department of the British government that looks after matters relating to trade and commerce. These include the supervision of railways, tramways, and shipping, of public companies, trade marks, and patents, and of bankruptcy proceedings, for which it has receivers in all the large towns. It also collects and distributes statistics and information about trade, and until 1917 managed the labour exchanges, the trade boards, and insurance against unemployment. The president is a member of the Cabinet, and the head offices are in Gt. George St., London, S.W.1. The Board issues the Board of Trade Journal, published weekly at 6d.

TRADE BOARD. In the United Kingdom, a board consisting of masters, men, and neutrals appointed to fix wages in certain industries. They were established by an Act of 1909, first in the four specified trades of tailoring, box making, lace finishing, and chain making, in which sweating was prevalent. In 1913 the Act was extended to include shirt making, confectionery-making, food preserving, hollowware making (tin boxes, etc.), embroidery manufacture, and certain kinds of laundry work. In 1919 an order extended the Act to those employed in distributing milk, and in 1930 its application to the catering trade was being considered.

Each board consists of an equal number of employers and employed, with a small number

of nominated members, and their duty is to fix minimum rates of wages, etc. They work usually by districts. The boards worked at first under the board of trade, but in 1917 they were transferred to the ministry of labour.

TRADE MARK. Name or distinctive device for an article, or in connexion with an article of production for sale, indicating that such are the goods of the proprietor of the device. In most countries trade marks are protected by Acts, under which it is a misdemeanour to forge or counterfeit any trade mark, or falsely to apply any such trade mark, with intent to defraud, to any article, or to any wrapper, etc., in which any commodity is sold.

In Britain a trade mark can be registered, the fees being fixed by the board of trade or other authority. It should contain at least one of the following essentials: (1) name of an individual or firm used in some distinctive way, (2) signature of the registering parties, (3) a distinctive device, (4) an invented word, (5) a word, not geographical and not having any connexion with the character or quality of the goods to which it is applied. Application should be made to the Registrar, Patent Office (Trade Marks Branch), 25, Southampton Buildings, London, W.C.2. See *Patent*.

TRADE UNION. Association of workers formed for the purpose of mutual help or protection and for the improvement of their conditions of employment. In Great Britain the laws forbidding combinations of workers were repealed in 1824. A great number of unions then came into existence, but it was not until 1875 that the principle of collective bargaining between employers and employed was sanctioned and peaceful picketing during a strike made legal.

In 1901 a judicial decision of the House of Lords caused consternation among trade unionists. This said that the funds of a union were liable for the consequences of illegal acts done by its officials, just as is the property of an individual or corporation. An agitation led to the passing of the Trade Disputes Act of 1906, which set aside this decision. It relieved the funds of the unions from liability in case of illegal actions by their members, and made wider and more explicit the permission given by the Act of 1875 for peaceful picketing.

In 1927, the year following the general strike, another Act dealt with the position. By the Trade Disputes Act a general strike was declared an illegal action, and peaceful picketing was again narrowed to the meaning given to it in 1875. It provided, too, that the political funds of a union must be kept distinct from its other funds, that no member need contribute to such political funds unless he expressly agrees to do so, and that the funds can only be used for political purposes with the consent of the members.

In addition to their extensive political work, the trade unions have many other activities. They receive weekly contributions from their members, and pay out considerable sums in unemployment benefit and during strikes.

The trade union movement has spread from England nearly all over the world, and in 1928 there were 44,190,525 trade unionists united in an international federation.

In Great Britain there is a general federation of trade unions, and a congress has been held each year since 1871. Scotland and Ireland also hold annual congresses. In Great Britain in 1927 the total membership was 4,908,037 and the number of unions 1,127. The annual income was just over £10,000,000.

TRADE WIND. Persistent wind blowing towards the equator from the N.E. in the northern hemisphere, and the S.E. in the southern hemisphere. The word trade, as here applied, originally meant winds in a trodden or beaten path, i.e. steady, reliable

winds, regularity or constancy being marked characteristics of trade winds. They occur in the Atlantic Ocean and in the Pacific Ocean near the W. coast of America. These winds are moving bodies of air, each about 1,000 m wide, which flow steadily for 2,000 m. and together cover about $\frac{1}{10}$ th of the earth's surface. The trade winds are of great value to sailing ships and are also of considerable climatic importance. See Wind.

TRAFALGAR, CAPE. Headland of S.W. Spain. It is about 30 m. S.W. of Tarifa at the W. end of the Strait of Gibraltar.

The battle of Trafalgar was fought between the British under Nelson and the French and Spanish fleets off Cape Trafalgar, on Oct. 21, 1805. The enemy was sighted in the early morning, steering due N. in a confused line ahead formation. Collingwood, leading the lee (or starboard) line of 15 ships in the Royal Sovereign, broke through ahead of the 15th ship from the enemy's rear, while Nelson, leading the weather-line in the Victory, made a second breach immediately astern of the Bucentaure, the hostile flagship. The Bucentaure opened on the Victory at a range of 1½ m., but no answer was returned until the latter was within 30 ft. of the French ship's stern. By 1.30 p.m. the action was at its height, and it was a few minutes before this that Nelson received his mortal wound. By 3 o'clock the issue was decided. Fifteen of the enemy's ships were taken or destroyed. No British ships were lost, and the casualties were only 449 killed and 1,242 wounded. See Nelson, Viscount; Sea Power.

TRAFALGAR SQUARE. London open space on the N. side of Charing Cross, S.W. A memorial of Nelson's last victory, it was begun and completed, 1829-67, modified from designs by Sir Charles Barry. Its central feature is the Nelson Column, 145 ft., surmounted by a statue, 18 ft., with bas-reliefs of Nelson's battles at the base, and four couchant bronze lions by Landseer. See Charing Cross, National Gallery; St Martin-in-the-Fields.

TRAFFIC (Ital. *trafficare*). Literally trade or commerce, i.e. exchange. It has come to be used mainly for the business done by railways and for the movements of vehicles along the roads and streets. Traffic in the streets is controlled by the local authorities and police. With the enormous increase in the number of vehicles using the roads the traffic problem in recent years, has become one of great magnitude and difficulty.

In 1928 the Government appointed a royal commission to consider the question. Its report was issued in 1929. The Road Traffic Act of 1930 embodies a number of the commission's recommendations. It does away with the county as the traffic authority, and substitutes 13 traffic areas, in each of which three commissioners act as the licensing authority. On ordinary passenger motor cars the speed limit is abolished, but maximum speeds are laid down for other types of motor vehicle. The Act authorises the preparation of a code (the "highway code") comprising directions for the guidance of persons using roads.

The Act empowers the Minister of Transport to specify the routes to be followed by vehicles, and to prohibit or restrict the use of specified roads. Public service vehicles are classified as stage carriages, express carriages, or contract carriages. A licence for such a vehicle will be issued only when the vehicle has been certified fit by an officer appointed under the Act. In the case of road services a special licence is necessary, and the applicant has to furnish particulars of the type of vehicle and of the time and fare tables. The commissioners will take into account the suitability of the routes, the needs of the area, and the co-ordination of all other forms of passenger transport. They will also consider representations made by persons already providing transport facilities.

Driving licences will no longer be issued indiscriminately, and an applicant will have to declare that his eyesight is up to a prescribed standard, and to state if he suffers from heart attacks, disabling fits, or mental disease. A person who makes an untrue statement or conceals his disability is liable to heavy penalties. The applicant must also produce evidence that he is insured against third-party risks; a certificate of insurance must be carried. The minimum age for obtaining a licence to drive a motor-cycle is 16; for driving a motor-car 17; and for driving a locomotive, motor tractor, or heavy motor-car, 21 years. See Road.

TRAFFORD PARK. District of Manchester. It is about 2 m. from the city proper, and has a station on the Cheshire Lines Rly. The hall here was long the seat of the De Trafford family. Bordering the Manchester Ship Canal, the estate, about 1,200 acres, was purchased by a company and cut up into sites for warehouses and factories. See Manchester.

TRAGACANTH. Gum-like exudation obtained by incision of a species of shrub *Astragalus*, growing in Asia Minor. It occurs in thin white or yellowish flakes, and is employed in medicine as a demulcent. See Gum.

TRAGEDY (Gr. *tragos*, goat; *ōdē*, song). Originally a hymn or choral ode sung at the festival held in honour of Dionysus among the ancient Greeks. The reason for the appellation remains uncertain. The most plausible explanation is that a goat, the destroyer of vines was sacrificed to the wine god during the singing of the ode.

As defined by Aristotle, tragedy is a representation of an action that is weighty, complete, and of a due magnitude, effecting through pity and terror a purgation of the like passions in the mind of the spectators.

TRAGOPAN OR HORNED

PHEASANT (*Cerionis*). Genus of game birds. They include five species, found only in India and China, and are noted for the brilliance and beauty of their plumage. They occur in bamboo plantations and in dense coverts on the hills; and the males indulge in elaborate displays in the breeding season.

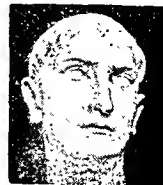
TRAHERNE, THOMAS (c. 1636-74). English writer. The son of a Hereford shoemaker, he was educated at Brasenose College, Oxford, and in 1657 became rector of Credenhill, near Hereford. He published several theological works and left two MSS., one of poems, the other four prose Centuries of Meditations. Both MSS. were discovered on a bookstall about 1896, and were edited and published by Bertram Dobell in 1903 and 1908 respectively. Of the school of George Herbert, Traherne traces the influence of natural beauty on the formation of character.

TRAIN BAND. Body of English citizen soldiers. Train bands were first constituted under James I, partly on the old fyrd system, partly on a voluntary basis. They took a prominent part on the Parliamentary side in the Civil War, and in consequence were abolished by Charles II after the Restoration.

TRAIN FERRY. Service of vessels specially constructed for the transport of railway trains across water. Such vessels are known as train ferry ships or boats. The advantages of such a service are the great saving of time, labour and expense effected by running the trains on board and off again, thus avoiding the necessity of discharging their freight and loading it on to an ordinary vessel, and reversing the process at the end of the voyage. See Harwich; Richborough.

TRAJAN (c. A.D. 56-117). Roman emperor, 98-117. Marcus Ulpius Trajanus, a Spaniard of Italica, near Seville, achieved rapid distinction in the Roman armies, and was in command of the forces on the Rhine when the emperor Nerva wisely selected him as his colleague and successor, and with that end in view formally adopted him in 97. On Nerva's death in 98 he became emperor. His high character and great military talents were matched

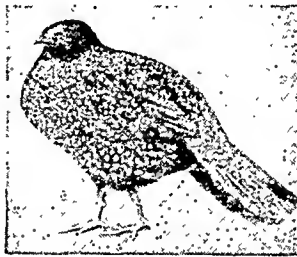
by his administrative ability, and he was the first emperor who deliberately set himself to extend the Roman dominion. In 101-105 he thoroughly subjugated the territory of Dacia, and later he led an expedition to the east, but after taking the Parthian capital Ctesiphon in 115 he was forced to retreat. He died at Selinus in Cilicia. His deeds were commemorated on Trajan's Pillar in Rome. See Hadrian; Rome.



Trajan, Roman emperor
Vatican Museum

TRAJECTORY. Term applied in ballistics, and especially in gunnery, to the curve described by a projectile during its passage from the muzzle to the first point of impact. See Ballistics; Gun; Howitzer.

TRALEE. Seaport, urban district and county town of Co. Kerry, Irish Free State. It stands near the mouth of the river Lee, on Tralee Bay, with which it is also connected by a ship canal. It is a station and junction on the G.S. Rlys. 21 m. from Killarney. The trade consists chiefly in exporting butter and grain, and importing coal and timber. Pop. 10,533.



Tragopan. *Cerionis satyrus*, native of the Himalayas

TRAMMEL NET. Kind of fishing net. It consists of three nets, fixed to stand upright in the water parallel to each other. The innermost of the three is twice the

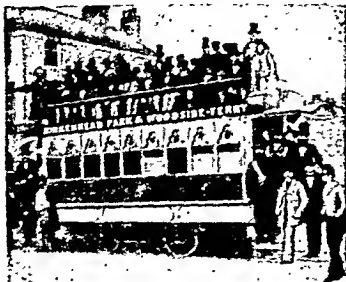
length and twice the height of the outer two, and is of a smaller mesh. Fish swimming through the larger meshes carry with them a fold of the inner net, and thus become enclosed in a pocket from which escape is impossible. This net is put down in the evening off a rocky coast and taken up the next day. Amongst the fish usually caught in the trammel net are red mullet and bass.

TRAMWAY. The earliest tramways were wooden tracks for the conveyance of coal in trucks or "trams" at collieries by horse power. Iron plate-ways were later introduced, and developed ultimately into the railroad (See Railway). In Great Britain horse-trams were first used for carrying passengers in the 'sixties of the 19th century. About 1882 steam locomotives were introduced in Birmingham, and remained in use on certain sections until 1905, while in Paris steam haulage was only being superseded in 1913.

ELECTRIC TRAMWAYS. There are two systems, the conduit, and the overhead or trolley system. The former includes an underground conduit with a continuous slot along the top of it. Inside are two steel rails, which convey the current to and from the generating station through a plough attached to the tramcar. The plough carries at its lower end two blocks of soft iron or bronze, which are pressed outwards against the conductor rails by springs. One block collects the electricity, which passes up the plough by copper strips to the motors on the car, the current being returned through the other block to the return conductor rail. In the overhead system

the electricity is collected by a wheel pressed up against the under side of an overhead conductor, and returns through the rails.

A tramcar consists of a body and a chassis or truck. The bogie type of car has a four-wheeled swivelling truck at each end. There are two motors, each of which drives one pair of wheels through reduction gear. Tramcars are usually arranged to run either way, and controlling apparatus is provided on both end platforms.



TRANCE. Condition of insensibility resembling sleep, from which, however, the individual cannot be roused, and which is not due to disease or injury of the brain. When associated with rigidity of the muscles, the term catalepsy (q.v.) is employed. Trance is a rare condition, and probably most instances are hysterical. It has been said that the condition may be mistaken for death, but the retention of the body warmth and the evidences of continuing circulation and respiration enable a correct diagnosis to be made.

TRANENT. Burgh of Haddingtonshire (East Lothian), Scotland. It is 10 m. from Edinburgh, on the L.N.E. Rly., and is the centre of a colliery district. Pop. 4,763.

TRANSCAUCASIA. Dist. S. of the Caucasus Mts. Before the Great War it formed a section of the Russian Empire. In 1919 confused hostilities went on between the Armenian and Azerbaijan governments, also prolonged disputes between the Tartars, Armenians, and Georgians respecting their distinctive boundaries. In 1922 Armenia, Azerbaijan, and Georgia acknowledged the authority of the Union of Soviet Republics, and formed themselves into the Transcaucasian Socialist Federated Soviet Republic. See Armenia; Azerbaijan; Caucasus; Georgia.

TRANSEPT (Lat. trans, across; septum, enclosure). In architecture, the transverse portion of any building lying across the main body of that building. The transept became common in the Middle Ages, and almost universal in the Gothic period. The crossing is often surmounted by a spire, tower, or dome. Single transepts are the more common, but double transepts are found in England and Germany. See Cathedral; Nave.

TRANSFIGURATION. Appearance of Christ described in Matt. 17, Mark 9, and Luke 9. According to the Scripture narratives, Christ appeared, revealed in His divine glory as Son of God, in the company of Moses and Elias (Elijah), before Peter, James, and John. The event (see also 2 Pet. 1) is supposed to have taken place at night on Mt. Hermon or Mt. Tabor, hence the name Feast of Tabor used in the Greek Church. The Feast of the Transfiguration is observed on Aug. 6.

TRANSFORMER. Apparatus for changing the energy of an electric current into the energy of another current differing from the first in pressure, volume, or kind.

In the case of direct or continuous current mechanical transformers are used (see illus. p. 553). The term is sometimes confined to the static apparatus (i.e. one without moving parts) used for altering the pressure and volume of alternating current. This is an induction coil, with an iron core on which are two windings, one having a small number of turns of coarse wire, the other a larger number of turns of finer wire. The nature of an alternating current supplies the fluctuations of energy essential to induction, without the need of a mechanical interruptor. The pressures in the two windings are theoretically

directly proportionate to the number of turns: and the volume of current inversely proportional. Thus, if the primary—i.e. the receiving

winding—has 100 turns, and the secondary 1,000 turns, the pressure will be increased (stepped up) ten times in the secondary. In the reverse case the pressure would be decreased (stepped down) to the same extent.

Transformers are used in one method of coupling the valves of a broadcast receiving set. Thus, in a set comprising a detector



Tramway. 1. The first tramcar used in England, introduced in Birkenhead in 1860. 2. Electric tramcar of the type used by the L.C.C.

and L.F. amplifier the anode circuit of the detector valve includes the primary winding of the inter-valve transformer, and the secondary winding forms part of the grid circuit of the second valve. See Induction; Wireless.

TRANSFUSION. Term applied to the transference of blood from one person to another, and sometimes held to include the introduction of saline solution into the blood vessels in cases of collapse. See Blood.

TRANSIT CIRCLE. In astronomy an instrument for ascertaining the time of star transits across the meridian. Invented by Olaus Römer in 1690, it consists essentially of a telescope movable in the plane of the meridian, and supported on two pillars which are respectively E. and W. of it. On one side of the telescope is fixed a circle which denotes its movement in the plane of the meridian, and which is read by microscopes fixed to one of the supporting pillars. On the other side of the telescope is a circle which is used for moving it. See Telescope.

TRANSITION. In architecture the passing from one style to another, and by extension, the style of building during the period of passing. The transition periods between Romanesque and Gothic, and Gothic and Renaissance, may be named. The Tudor style in England represents the transition from English Gothic to Renaissance. See Architecture; Renaissance Architecture.

TRANSITION SERIES. In geology, name given to rocks approximately of the Palaeozoic age which showed a transitional stage between the older crystalline rocks and the newer non-crystalline. See Mesozoic Era.

TRANSJORDAN OR TRANSJORDANIA. Independent state E. of Palestine. Governed by Gt. Britain under the same mandate as Palestine, its boundaries are only roughly known and its area is uncertain. Since 1921 it has been ruled by Abdullah, a brother of King Feisal of Iraq, and in 1923 Great Britain agreed to recognize him as an independent ruler. Order is maintained by the Transjordan Frontier Force and the Arab Legion. Amman, the capital, is the headquarters of the R.A.F. in Palestine and Transjordan. The country is mainly desert, except that to the W. of the Hejaz Rly. Pop. about 260,000. See Hejaz; Palestine.

Transkei. District in the Cape Province, S. Africa, also known as Kaffraria (q.v.).

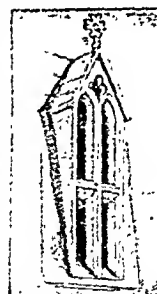
TRANSMIGRATION. Doctrine of the passage of the soul from one body to another. According to this theory the soul, proceeding from God, passes through a succession of states before returning to God. Of ancient origin, the theory enters into much philosophy and poetry as well as theology, and is found in a crude state among savage races. See Incarnation.

TRANSOM (Lat. transtrum). In architecture, a beam or bar of wood, stone, or metal laid horizontally across a door or window; serving in the latter case to divide the upper and lower lights. See illus. below.

TRANSPORT. Science of moving persons and materials, whether by rail, road, water or through the air. In Great Britain there is a ministry of transport with offices at Whitehall Gardens, London, S.W.1. It was set up in 1919 to deal primarily with the railways, but to-day it is chiefly concerned with the problems of the roads. A section of the Science Museum at S. Kensington is devoted to transport. See Canal; Road; Shipping; Traffic, etc.

TRANSPORTATION. System of punishment for crime. By it criminals are removed to some penal settlement outside their own country for a period of years or life. Transportation to America ended with the War of Independence, and in Jan., 1788, the first batch of convicts landed at Botany Bay in New South Wales. The system worked well for a time, but in 1840 the sending of convicts to New South Wales was transferred to Van Diemen's Land (Tasmania), which already had penal settlements. It was finally abolished in 1853. The system is still in existence in other countries, e.g. France.

TRANSPORTER BRIDGE. Type of bridge in which a car, suspended from a trolley travelling upon an overhead bridge superstructure, conveys passengers, vehicles, etc., across a waterway. It usually comprises a tower on each shore supporting a suspension or girder bridge. The overhead trolley runs upon rails secured to the bridge girders. The overhead trolley may be self-propelling, but a more positive drive is obtained by securing it to a steel wire hauling rope passing round pulleys at each end of the bridge and round a winding drum in a machinery cabin, actuated by an electric motor or other means. Two well-known British transporter bridges are the one at Runcorn-Widnes, and the other across the river Usk at Newport, Monmouthshire. See Bridge.

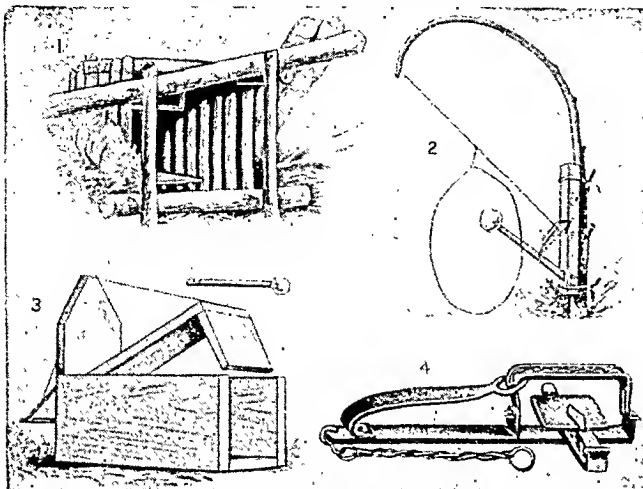


Transom in architecture. See above

TRANSUBSTANTIATION (Lat. trans, over; substantia, substance). In theology, doctrine of the change of the substance of the bread and wine, by consecration at the celebration of the Holy Eucharist, into the true Body and Blood of Christ, only the appearances of the bread and wine remaining. The doctrine is a dogma of the Roman Catholic Church, and has its counterpart in the Greek Church, but is rejected by most Protestants. Article XXVIII of the Church of England, while rejecting the word, maintains that the Body and Blood of Christ are present "only after an heavenly and spiritual manner." See Communion, Holy; Consubstantiation; Eucharist.

TRANSVAAL. One of the provinces of the Union of South Africa. It lies between the rivers Vaal and Limpopo, the Vaal on the S. separating it from the Orange Free State,

and the Limpopo on the N. from Southern Rhodesia. It is also bounded by the Cape Province, Natal, Orange Free State, and on



Trapping. 1 Heavy deadfall, for large animals. 2. Sapling snare, for killing small game. 3. Box trap for catching alive, showing notched stick for bait. 4. Steel rabbit trap

the E. by Portuguese territory and Swaziland. Pretoria is the capital, but Johannesburg is the largest town. The two main industries are the mining of gold on the Witwatersrand and farming on the veld. The province contains rich coal mines, while diamonds, copper, and tin are also mined. Its area is 110,450 sq. m. Pop. (European) 608,622.

The province owes its origin to some Boer farmers, who, about 1836, left Cape Colony for the north. Passing over what was later the Orange Free State, they crossed the Vaal, the country N. of that river being therefore called the Transvaal. In 1852 Great Britain recognized the independence of this district, but in 1877 it was annexed. In 1880 the Boers rebelled, wishing to regain their independence.

After 1881, and still more from 1884, when the convention of 1881 was revised, the Transvaal was a republic free to manage its internal affairs, but with Great Britain responsible for its external ones. In 1902, after the South African War, the Boers recognized the sovereignty of Great Britain. As a crown colony the Transvaal was governed until 1906 by a governor assisted by two nominated councils. In 1906 responsible government on the accepted British model was granted to it, and in 1910 it joined the Union of South Africa; See Botha, Louis; Gold: Rand; Smuts, Jan C.; South Africa.

TRANSYLVANIA. Prov. of Rumania until the break up of the Dual Monarchy a dist. of the kingdom of Hungary. On Oct. 12, 1918, the Rumanians of Transylvania, the Banat, and other Hungarian districts proclaimed their independence of Hungary. Its area is 22,312 sq. m. Pop. about 2,700,000. The Transylvanian Alps are the S.E. section of the Carpathian Mts. (q.v.). See Rumania.

TRAPANI (anc. Drepanum). Coast town of N.W. Sicily. It is 3 m. W. of Monte San Giuliano, 45 m. direct and 121 m. by rly. W.S.W. of Palermo. The celebrated statue, the Madonna of Trapani, is in the old Annunziata pilgrim church near the town. Coral goods, shell cameos, salt, marble, and alabaster wares are produced, and macaroni, wine, fruits, and olive oil are exported. Pop. 83,766.

TRAPEZIUM. In astronomy, four bright stars grouped in a lozenge shape at the core of the Orion nebula. The stars are of the early helium variety and are intimately associated with the nebula surrounding them. They range from 4.7 to 8.0 in magnitude.

TRAPPING. Traps for catching animals comprise many varieties, from the ordinary steel trap with teeth for taking smaller quadrupeds, to the pits and heavy deadfalls for the killing or capturing of lions, tigers, and other big game. The steel trap for rabbits and such animals has been greatly improved and made to operate in a more humane manner than formerly. Another form of snare for small animals is the box-trap, the lid of which falls upon the intruder.

The pit, used for ensnaring larger animals such as lions, tigers, and bears, consists of a cavity some eight or ten feet deep, covered over the top with brushwood and other foliage so as to correspond with the surrounding ground.

This brushwood covering is arranged so as to collapse under the weight of the animal, which falls into the pit.

TRAPPIST. Branch of the Cistercian reform of the Benedictine order. It originated at the Cistercian Abbey of La Trappe in Normandy, whence it took its name. Armand Jean le Bouthillier de Rancé, elected abbot in 1664, found the community lax and disorganized. He introduced a system of unexampled austerity, the rules imposing strict enclosure, perpetual silence, and rigorous fasting. The Trappists employ themselves entirely with the choir offices and manual labour. They now have about 60 houses, including the Abbey of Mount St. Bernard, in Charnwood Forest. The nuns of this order keep an equally austere rule, and have now



Trappist monk in cowl and hood

about twenty convents. See La Trappe.

TRAQUAIR. Village of Peeblesshire. It is connected by bridge with Innerleithen, across the Tweed. At the junction of the Quair and Tweed stands Traquair House. Near is a grove immortalised in a ballad as The Bush abuno Traquair. Pop. 600.

TRASIMENO, LAGO, OR LAGO DI PERUGIA. Lake of Central Italy. It lies 12 m. W. of Perugia at an alt. of 844 ft., and is surrounded by hills. The lake, 10 m. long by 8 m. wide and 25 ft. deep, has no apparent natural outlet, but is regulated by an artificial channel. On the N. shore was fought the battle of Lako Trasimenus, between the Romans under C. Flaminius and the Carthaginians under Hannibal, 217 B.C., in which the Romans were utterly defeated.

TRAVANCORE. Native state of Madras. India. It comprises the W. portion of the S. end of the Deccan peninsula. The coast is low and marshy; the E. is mountainous, and its forests yield teak. The ruler is a maharaja with a salute of 19 guns. Its area is 7,625 sq. m. Pop. 4,006,062.

TRAVELLER'S JOY (*Clematis vitalba*) OR OLD MAN'S BEARD. Climbing shrub of the

order Ranunculaceae, a native of Europe W. Asia, and N. Africa. As a rule it scrambles over hedges and thickets, but often when it reaches up into a tree its rope-like stems are of great length. The flowers are slightly odorous and consist of four greenish-white sepals, downy on the under surface. The numerous styles develop long white feathery tails, which in autumn become the "old man's beard."



Traveller's Joy. Flowers of the British wild clematis

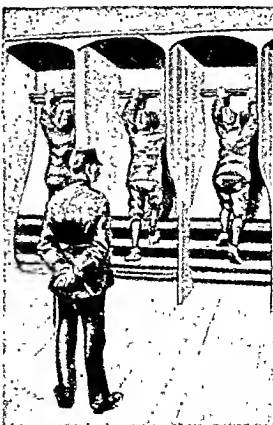
TRAVELLER'S TREE (*Ravenala madagascariensis*). Palm-like plant of the order Scitamineaceae. A native of Madagascar, the trunk is built up of the bases of former leaf-stalks which sheath the newer ones. The exceedingly large alternate leaves are arranged in two rows, with long stalks which hold about a quart of water. The seeds are edible, and the leaves are useful for thatching.

TRAVERTINE. In mineralogy, variety of limestone deposited by springs and rivers. The deposit is characteristic of volcanic regions, and its white to creamy colour makes it in great demand as a building stone. From the mode of its deposit the stone often contains fossil leaves and branches of trees.

TRAWLER (Old Fr. troller, to go hither and thither). Vessel engaged in trawling, so called because it uses large nets called trawls. The net consists of an immense bag which may be 80 feet long. If used by a sailing boat, the mouth is kept open by a pole of oak or elm wood, 40 ft. in length. When used by a steam trawler, the mouth of the trawl is opened by two boards (known as "otter-boards") which, owing to the movement through the water, are forced apart. In the process of trawling this net is dragged either by the sailing boat or the steam trawler for a given period of time over the bed of the portion of the ocean selected. The net is then hauled over the deck and a slipnet loosed, which allows the contents to be emptied out. The fish taken in this way are cod, plaice, turbot, whiting, sole, haddock, brill, skate, hake, gunnards, and ling.

During the Great War Great Britain organized a trawler section, which formed part of the royal naval reserve.

TREADMILL. Wheel turned by the weight of a person or persons treading on steps fixed on the periphery. Invented by the Chinese, who used it in drawing water for irrigation, it was formerly used in prisons as a means of



Treadmill in Pentonville prison, formerly used as a punishment

discipline or as a part of hard labour, the power being sometimes employed for the turning of machinery or grinding of corn.

TREASON. Term particularly applied to acts of betraying, or to the violation of allegiance to, the sovereign or chief authority of a state. In old English law, two forms of

treason were distinguished: high treason, where the act was directed against the crown or supreme authority, and petty or petit treason, where the allegiance violated was one towards some other superior authority.

TREASURE TROVE (Fr. *trouver*, to find). Name given to coins and other valuables made of gold or silver, found in the ground or some other hiding-place, whose owner is unknown. By English law such property belongs to the crown. Roman law regarded treasure trove as the property of the owner of the land and the finder, who had equal shares in it. This is the law of France, Germany, and other countries.

TREASURY. Department of the British Government responsible for collecting and expending the national revenue. It originated as the department of the lord high treasurer, an official who appeared at an early date in the royal household and ranked as the third great officer of state. It has been in commission without a break since 1714.

The commission of the treasury consists of a first lord, the chancellor of the exchequer, three or four junior lords, a parliamentary and a financial secretary, all members of the government. For some time the business was directed by the first lord of the treasury, but gradually it passed into the hands of the chancellor of the exchequer. The office of first lord is held by the prime minister, or the leader of the House of Commons. The financial secretary is the chief lieutenant of the chancellor. The permanent secretary ranks as the chief official of the civil service. The offices are in Whitehall, London, S.W.

Treasury bills are a form of British Government security, specially suited for temporary borrowing. They are usually repayable in three, six, nine, or twelve months, and are issued in multiples of £1,000.

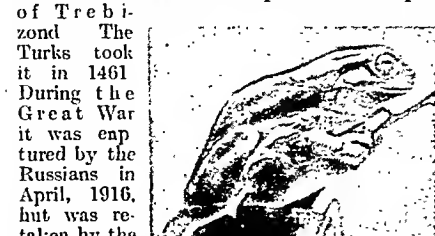
Treasury bonds are a form of security issued by the British treasury. The money thus borrowed is for a definite term of years. See Budget; National Debt.

TREASURY NOTES Name sometimes given to the notes for £1 and 10s. issued by the British Treasury from 1914 to 1928, when their place was taken by notes issued by the Bank of England. See Bradbury, Baron; Currency.

TREATY (Fr. *traité*, ultimately from Lat. *tractare*, to handle). Formal agreement between two or more responsible governments, by whom the terms signed by commissioners are solemnly ratified, the treaty then becoming operative. See Berlin; London; Ryswick; Utrecht; Versailles; Westphalia, etc.

TREATY PORT This is a name specifically applied to certain ports of China after the Opium War of 1840-42. The terms of the peace treaty signed on the Cornwallis off Nanking included, in addition to the cession of Hong Kong, the opening to British trade of five ports, Canton, Amoy, Foochow, Ning-po, and Shanghai, which were therefore known as treaty ports. See Amoy; China.

TREBIZOND or **TRABZON** (anc. Trapezus). Town of Turkey. On the Black Sea, 570 m. E. of Istanbul, it is still enclosed within its Byzantine walls. Trebizond was a Greek colony founded from Sinōpē. In A.D. 1204 it became the capital of the empire of Trebizond.



Tree Frog. The European species, frequently kept in greenhouses.

W. S. Derridge, F.Z.S.

TREBLE. Term applied generally to the highest part in a piece of music, but in particular to the child's voice. When singing in parts first began to be practised, the melody was sustained by the tenor (q.v.) below which an additional part was placed. The next step was to add a second part above the melody, called the alto or high part. Then came the addition, still higher, of a third part, triplum, which has been corrupted into the term treble. See Harmony.

The treble clef is the G clef on the second line of the staff. Originally a small G, then later a capital G, the sign became conventionalised by engravers of music scores into its present form.

TREDEGAR. Urban dist. and market town of Monmouthshire, England. It stands on the Sirhowy river, 24 m. N. of Cardiff, on the G.W. Rly. It owes its prosperity to the opening of coal mines and ironworks. Market day, Sat. Pop. 25,105. Pron. Tredeegar.

The title of Baron Tredegar has been borne by the family of Morgan since 1859. The family seat is Tredegar Park, near Newport.

TREE, SIR HERBERT BEERBOHM (1853-1917). British actor. Born in London, Dec. 17, 1853. He made his professional debut in London at the old Park Theatre, Camden Town.



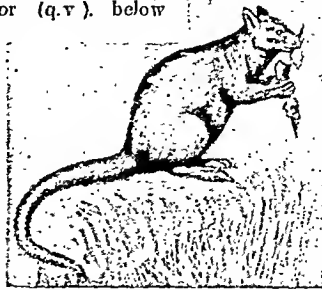
Sir Herbert Tree. British actor.

The next few years he took minor parts and was on tour, but in 1884 came his first great success as the Rev. Robert Spalding in *The Private Secretary*, at the new Prince of Wales's Theatre. Three years later he opened in management at the Comedy Theatre. A few months later he moved to The Haymarket, and began a long series of successes. After a tour to the U.S.A. he opened at Her Majesty's, which had been rebuilt, and began the series of successful productions with which his name is mostly associated. Tree produced in very lavish style, which, especially in the Shakespearean plays, was freely criticised by many who considered the beauty of the original lost in the gorgeous setting. In 1916 he lectured in America, and shortly after his return to England died, July 2, 1917. Tree was knighted in 1909.

TREE CREEPER (*Certhia familiaris*). Small British bird, it derives its name from the habit of creeping about the bark of trees. The wings are brown, barred with white and yellow and tipped with white; the tail is reddish brown, and the breast is whitish. The beak is long, curved, and slender, and is used for extracting small insects and their eggs from crevices in the bark. It is 5 ins. long.

TREE FROG. Family of frogs arboreal in habits. There are about 150 species. They have adhesive disks on the toes, which enable them to cling to the leaves and stems of trees. Usually green in colour, and difficult to distinguish when at rest among the foliage, they spend all their time in the trees, except in cold or very dry weather, when they hide

in mud or under stones, and in the breeding season, when most of them visit the water for spawning. One species (*Hyla arborea*) has become naturalised locally in the Isle of Wight. See Frog.



Tree Kangaroo. Black species of the arboreal kangaroo found in Australia and New Guinea.

TREE KANGAROO (*Dendrolagus*). Genus of arboreal kangaroos, found only in Australia and New Guinea. There are about seven species, black or dark grey in colour, with the front and hind limbs nearly equal in length, thus differing markedly from the ground kangaroos. They feed on fruit and ferns.

TREE MALLOW (*Lavatera arborea*). Shrub of the order Malvaceae, a native of the European

coasts. It forms a stout, erect, woody stem five or six feet high. The glossy, purple flowers, much like those of mallow and hollyhock, are 1½ ins. across.

TREE SHREW (*Tupaia*). Family of arboreal shrews, found only in India and Malaya. In general appearance they rather resemble small squirrels, but have the typically long muzzle of the shrews. They feed upon insects and fruit.

Trefoil (*Trifolium*). Genus of leguminous plants, the leaf of which consists of three leaflets. See Clover; Shamrock.

Treforest. Colliery centre of Glamorgan-shire, Wales. It is 12 m. from Cardiff, on the G.W. Rly. Pop. 12,365.

TREGARON. Parish of Cardiganshire. It is 10 m. from Lampeter, on the G.W. Rly. Formerly a borough, it is now the centre of a rural district. Pop. 1,400.

Treharris. Colliery centre of Glamorgan-shire, Wales. It is 14 m. N. of Cardiff, on the G.W. Rly. Pop. 8,787.

TREITSCHKE, HEINRICH VON (1834-96). German historian. Born at Dresden, Sept. 15, 1834, the son of an officer, he studied at Bonn and elsewhere. In 1857 he obtained an appointment at the university of Leipzig, but his zeal for union with Prussia forced him to leave Saxony in 1863. In 1874 he was made professor at the university at Berlin, where his ardent convictions gave his lectures unusual virility, and his narrow Germanism and disdain of England as sordid, and France as degenerate, suited the growing mood. He sat in the Reichstag from 1871 to 1888, and died in Berlin, April 28, 1896.

Treitschke's chief work is his *History of Germany*, in five volumes, Eng. trans. 1915-19; a severe, inartistic glorification of the development of modern Germany. In the same vein he wrote a *Life of Frederick the Great*, Eng. trans. 1914. But his ideas are best found in two volumes entitled *Politics*, Eng. trans. 1916. Treitschke's main theory is that the essence of the state is power, and individuals owe blind obedience to the autocratic state. War is a necessary discipline.

TRELAWNY, EDWARD JOHN (1792-1881). British adventurer. A member of an old Cornish family, he was born Nov. 13, 1792. He is remembered chiefly as the friend of Shelley and Byron, whom he met in Italy in 1822.



Tree Mallow. Leaves and flowers.



Tree Creeper seeking insects in the bark of a tree.



H. von Treitschke. German historian.

He superintended the cremation of Shelley and then went to Greece with Byron, but he left him to join a band of insurgents fighting for Greek independence. He died Aug. 13, 1881. Trelawny wrote *Adventures of a Younger Son*, 1835; and *Recollections of the Last Days of Shelley and Byron*, 1858.



Edward Trelawny,
British adventurer
After Severn

TRELOAR, SIR WILLIAM PURDIE (1843-1923). British philanthropist. Born in London, Jan. 13, 1843, he was educated at King's College School. He became a member of the corporation of the city of London in 1880, and alderman, 1892. He was sheriff, 1899-1900. In 1906 he was elected lord mayor, receiving a knighthood, 1900, and a baronetcy, 1907. Principal of the firm of Treloar & Sons, carpet merchants, he founded the Lord Mayor Treloar cripples' hospital and college, at Alton and Hayling Island. He died Sept. 6, 1923.

TREMOLITE. In mineralogy, the name of a variety of amphibole consisting of calcium and magnesium silicate. White to dark grey in colour, it is so named from Tremolo, the village in the Alps where it was discovered. See Amphibole.

TRENCH. In military engineering, an excavation used to protect troops from the enemy's fire. Fire trenches are so sited and arranged that the troops occupying them can fire on the enemy. Support trenches are farther to the rear, and provide cover for troops who are sufficiently close to the front line to be able to reinforce it during a hostile attack, sometimes being arranged so that the occupants can bring rifle fire to bear on the enemy over the front line trenches. Communication trenches provide a road along which troops may pass between the fire and support trenches and positions farther to the rear without being exposed to fire. It is usually necessary for these to pursue a zig-zag course to protect them from enfilade fire. If sufficient time is available, trenches are dug deep enough to accommodate a man standing.

A trench mortar or trench howitzer is a species of small cannon consisting of a cylinder of cast iron closed at one end, open at the other, and with a touch-hole at the closed end. They were used largely during the Great War for throwing bombs into the opposing trenches. The charge consisted of small packets of gunpowder tied up in paper in measured doses. The bomb was a tin can filled with a bursting charge and fragments of metal, and with an inch of fuse protruding. See Gun; Howitzer.

TRENCH, RICHARD CHENEVIX (1807-86). British divine. Born in Dublin, Sept. 9, 1807, he was educated at Harrow and Trinity College, Cambridge. Ordained, he was made professor of divinity at King's College, London, in 1846. In 1856 he was made dean of Westminster, and in 1864 archbishop of Dublin. He resigned in 1884, and died in London, March 28, 1886.



Richard Trench,
British divine

Trench won fame as a poet, but is better known by his books, *The Study of Words*, 1851, and *English Past and Present*, 1855. Consult *Letters and Memorials*, 1886.

TRENCHARD, HUGH MONTAGUE (TRENCHARD, 1ST BARON (b. 1873)). British airman. Born Feb. 3, 1873, he entered the army in 1893. In 1912 he took his pilot's certificate, and in 1914 he became

commandant of the military wing of the R.F.C. In July, 1915, he became chief of the air staff. He resigned in April, 1918, and was appointed to the command of the Independent Air Force in France. In 1919 he again became chief of the air staff, a post he held until 1929. Made a baronet and promoted air chief-marshal, 1919, he was created a peer, 1930.

TRENCK, FRIEDRICH, BARON VON DER (1726-94). German adventurer. Born Feb. 16, 1726, at Königsburg, he entered the army. In 1743 he was imprisoned in the fortress of Glatz for having a love affair with the Princess Amelia. He escaped in 1746, and entered the Austrian service, but returned to Prussia in 1754, and was again imprisoned for ten years. He was eventually released at the request of Maria Theresa. Having gone to Paris, he was accused in 1794 of being an agent of foreign powers, and was guillotined on July 25 of that year. His *Autobiography* was published in 1787.

A cousin, Francis, Baron von der Trenck, was condemned to death for plundering and other crimes, but instead was imprisoned until his death, probably by suicide, Oct. 14, 1749.

TRENT. River of England. It rises in Staffordshire on Biddulph Moor, and flows through Staffordshire, Derbyshire, Nottinghamshire, and Lincolnshire to the Humber, which it enters near Alkborough. Its length is about 180 m. The chief tributaries are the Sow, Penk, Tame, Dove, Soar, Erewash, Derwent, and Idle; towns on its banks are Stoke, Burton, Nottingham, and Newark. The Trent has a bore called the *aegir* (eagre). It is connected by the Trent and Mersey and Grand Union canals with the Lancashire and Birmingham districts, while other canals link it up with Derby, Lincoln, and Grantham.

Trent junction is a rly. station on the L.M.S., just outside Long Eaton, where the lines to Nottingham and Derby branch. Here is Trent College, a public school founded in 1866. See Humber; Nottingham.

TRENT. River of Ontario, Canada. It rises in Rice Lake and empties itself into the bay of Quinte, an arm of Lake Ontario. The course of the river is part of the route of the proposed Georgian Bay Canal.

TRENT (Ital. Trento; Ger. Trient). Town of Italy, formerly in Austria. It stands on the Adige, 76 m. N.W. of Venice. Prominent among the public buildings are the white marble cathedral and the palace of the prince bishops. Industries include marble quarrying and the making of pottery, playing cards, and wines. During the Napoleonic Wars the dist. was for a time in Italian occupation. In the Great War it was taken by the Italians, Nov. 3, 1918. Pop. 62,183.

COUNCIL OF TRENT. General council of the Roman Catholic Church, held at Trent between 1545-63. A comprehensive definition of dogma and strong internal reforms were needed to enable the Roman Church to show an undivided front against the growing strength of the Reformed doctrines. The popes generally had resisted appeals for general councils, but in 1530 the Protestant estates demanded a council of Christendom, and the emperor Charles V was strongly convinced of the necessity of reform. The council was summoned by Pope Paul III in 1545. Over 200 fathers attended, and the sittings continued with intervals until Dec., 1563.

Among the matters dealt with by the council (the Tridentine decrees), the most important were: the joint value of Scripture and the

tradition of the Church as standards of Divine revelation; the interpretative authority of the Church Fathers; original sin; the authority of the Vulgate, 1546; the Divine origin and forms of the sacraments of baptism and confirmation, 1547; the Eucharist and penance, 1551; communion in both kinds and the sacrifice of the Mass, 1562; orders and the regulation of the hierarchy; the sacrament of matrimony; veneration of saints, indulgences, index of prohibited books, 1563. The decrees were confirmed by Pius IV in 1564.

TRENT, JESSE BOOT, 1ST BARON (h. 1850). British merchant. Born June 2, 1850, he became a chemist and started in business in Nottingham. He opened one shop after another, and sold drugs cheaply. He began also to manufacture the various articles sold, added departments for fancy goods and stationery, and established a large lending library and bookselling organization. An active worker for Liberalism and a munificent benefactor to Nottingham (q.v.), he was knighted 1906, and made a baronet, 1916. In 1929 Boot was made a baron.

In 1920 Boots Cash Chemists, Ltd., amalgamated with the United Drug Co. of America (founded in 1902 by Louis K. Liggett), a new company being formed, with the title of Liggett's International Ltd.

TRENTE ET QUARANTE (Fr. thirty and forty). Game of chance, also known as *rouge et noir*, played with six packs of cards. It is so called from the card number totals of 30 and 40 being the deciding figures of the game. See *Rouge et Noir*.

TRENTHAM. Village of Staffordshire. It is 3 m. from Stoke-upon-Trent, on the L.M.S. Rly. Trentham Hall, built by Sir C. Barry about 1840, was a seat of the duke of Sutherland. The pollution of the Trent made it uninhabitable, and consequently it was pulled down in 1911 and the grounds made into a public park. Pop. 3,141.

TRENTINO. Dist. of N. Italy, formerly part of the Austrian prov. of Tirol. In its widest sense the name includes the whole of the area between Lake Garda and the Brenner Pass transferred from Austria to Italy by the treaty of St. Germain-en-Laye, 1919.

The territory given to Italy in 1919 was much more extensive than that demanded, and transferred the irredentist problem from Italy to Austria. The Italian population is between 350,000 and 400,000.

The Trentino was the scene of prolonged fighting between the Italians and the Austrians in the Great War. In May, 1915, the Italians undertook an offensive, and by the end of the month were moving in Austrian territory up the Adige valley. In May, 1916, the Austrians advanced on a front extending from the Brenna W. to the Adige, driving the Italians from the Upper Astico valley. Intermittent fighting went on until May, 1918, when the Italians assailed the Austrian trenches on the heights in the vicinity of the Tonale Pass, capturing many prisoners. The last considerable fighting in the Trentino was the Austrian offensive on June 15, 1919. See *Asiago*; *Isonzo*.

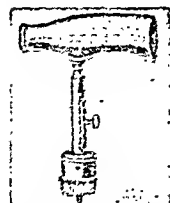
TRENTON. Capital of New Jersey, U.S.A. It stands on the Delaware river, 34 m. N.E. of Philadelphia. The falls supply water power for the various industries. A British force holding Trenton was captured by Washington in 1776. Pop. 132,020.

TRENTON BEDS. In geology the name is given to one of the divisions of the Ordovician system, typical near Trenton Falls, U.S.A. The rocks are chiefly limestones and black carbonaceous shales.

TRENTON FALLS. Summer resort of New York, U.S.A. It is 17 m. by rly. N.N.W. of Utica, and is noted for the magnificent falls here on the West Canada creek.

Trepang. Variant name for the sea cucumber or *bêche de mer*, applied also to its flesh dried for food. See Sea Cucumber.

TREPHINE (Gr. *trypanon*, a boring instrument). Surgical instrument. An improved trepan. It is a cylindrical saw, used in trephining (trepanning), or cutting out a piece of bone from the skull. This operation is most often done to remove a bullet or a fragment of bone which may be pressing on the brain as a result of fracture of the skull, or to open an abscess in the brain, or remove a blood clot or tumour, or to relieve pressure within the skull due to a tumour or other disease. See Surgery.



Trephine employed in surgical work

TRESCO. Second in size of the Scilly Isles. Lying 1 m. N.W. of St. Mary's, it contains the ruins of a Benedictine abbey. The residence of the proprietor of the islands is built on the site of the monastic buildings. At the N. end of Treseco stands the ruined Cromwell's Castle, to the E. of which is the cavern called Piper's Hole. Pop. 300. See Scilly Isles.

TRESPASS. In English law, a wilful injury to the person or property of another. There are three kinds of trespass, viz. trespass to land, to goods, and to the person. Trespass to land was in theory an act of violence. The plaintiff is entitled to recover the actual damage done by the defendant, and the court or jury may award exemplary damages in aggravated cases. Trespass to goods is any wrongful touching of, or damage to, or taking of the plaintiff's goods. Damages may be awarded on the same principles as above.

TREVELYAN, GEORGE MACAULAY (b. 1876). British historian. Born Feb. 10, 1876, a son of Sir George Trevelyan, he served in the Great War as commandant of the First British Ambulance Unit for Italy, 1915-18. Trevelyan won distinction as an authority on the growth of modern Italy. He wrote *England in the Age of Wycliffe*, 1899; *Garibaldi's Defence of the Roman Republic*, 1907; *Garibaldi and the Making of Modern Italy*, 1911; *Lord Grey of the Reform Bill*, 1920; *British History in the Nineteenth Century*, 1922; *England under Queen Anne: Blenheim*, 1930. In 1927 he became regius professor of modern history, Cambridge, and in 1930 was given the O.M.



George Trevelyan, British historian
Elliott & Fry

TREVELYAN, SIR GEORGE OTTO (1838-1928). British politician and author. A nephew of Lord Macaulay, he was born at Rothley Temple, Leicestershire, July 20, 1838. He entered Parliament in 1865 as Liberal M.P. for Tynemouth, afterwards representing the Hawick Burghs, 1868-86, and a Glasgow division, 1886-97. In 1880 Gladstone made him secretary to the admiralty, and in 1882 he became chief secretary for Ireland. In 1884-85 he was chancellor of the duchy, and for a month in 1886, in which year he succeeded to his father's baronetcy, was secretary for Scotland, and again in 1892-93. In 1897 he resigned his seat in Parliament.

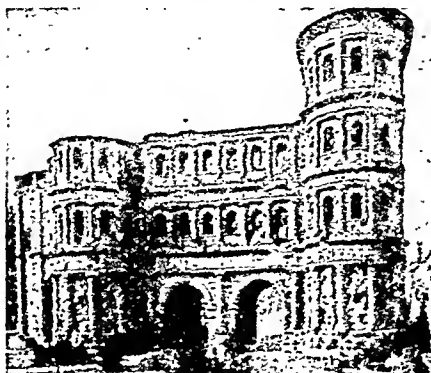
Both a scholar and a wit, Trevelyan owes his reputation as a writer to his excellent *Life and Letters of Lord Macaulay*, 1876. He died Aug. 17, 1923. His eldest son, Sir Charles Phillips Trevelyan



Sir George Trevelyan, British politician
Elliott & Fry

(b. 1870), was in the Liberal ministry, 1908-14. In 1924 he was minister of education in the Labour ministry, and again in 1929.

TREVES (Ger. *Trier*). City of Prussia, in the Rhine Province. It is on the right bank of the Moselle, 69 m. S.W. of Coblenz. Among the many relics of Roman splendour are the Porta Nigra, the N. gate of the city, and the ruins of the imperial palace, the baths, and the amphitheatre. The cathedral, built in the 4th century, with medieval additions, contains monuments to the electors and the famous Holy Coat (q.v.). The industries include iron founding, dyeing, glass painting, and the making of pianos and furniture. There is an extensive trade in Moselle wines. Treves became an archbishopric in the 9th century. Pop. 58,140.



Treves, Germany. Porta Nigra, the Roman north gate of the city

TREVES, SIR FREDERICK (1853-1923). British surgeon. Born at Dorchester, Feb. 15, 1853, he was Hunterian professor of anatomy and Wilson professor of pathology at the Royal College of Surgeons, 1881-86. During the S. African War he was consulting surgeon to the army, and served with the Ladysmith relief column. In June, 1902, he operated upon King Edward VII, and was made a baronet the same year. He published many books of travel, including *Highways and Byways in Dorset*, 1906, and *The Country of the Ring and the Book*, 1913, war experiences, etc., as well as works on surgery, among them *Surgical Applied Anatomy*, 1883, and *System of Surgery*, 1895. He died Dec. 7, 1923.



Sir Frederick Treves, British surgeon
Russell

TREVISO (anc. *Tarvisium*). City of Italy. It is a rly. junction 18 m. N.N.W. of Venice. The cathedral of San Pietro, ornamented with five cupolas, was founded in 1141 and enlarged in the 15th century; it contains pictures by Titian and Paris Bordone, a native of the city. Silks, woollens, metal goods, machinery, chemicals, and paper are the principal manufactures. Treviso was an important city at the end of the Roman empire, a member of the Lombard League, and subject to Venice in the 14th cent. It was prominent in the Great War, being an important base of the Italian army in the campaigns of 1915-18. Pop. 57,948. See Piave.

TREVITHICK, RICHARD (1771-1833). British engineer. Born at Illogan, Cornwall, April 13, 1771, and trained as a mining engineer, in 1800 he invented a double-acting high-pressure engine, which came into wide use in the mining districts. In 1801 he brought out a steam road carriage, the first of its kind, and afterwards built locomotives for running on rails. In 1816 Trevithick went to Peru to superintend the installing of his engines in the silver mines, but lost everything he

possessed in the war of independence. He returned to England, 1827, and died April 22, 1833, in poverty. See Railway.

TRIAL. In law, the examination of a cause, or a prisoner, before a judge, with or without a jury. At common law, trial by judge and jury is the normal method. The counsel for the prosecution, or for the plaintiff, opens the case in a speech that is supposed to tell the jury what it is all about and what he proposes to prove. He then calls his witnesses, and examines the first witness, i.e. asks him questions in order to elicit the facts.



Richard Trevithick, British engineer

The witness is cross-examined by the opposite counsel, who tries to elicit facts in favour of his client, and to show that the witness is unreliable. After cross-examination the prosecuting, or plaintiff's, counsel re-examines. He can only ask questions on points raised by the defendant's cross-examination.

After all the witnesses on this side have been called, the defending counsel opens his case and calls his witnesses, who are examined, cross-examined, and re-examined. Then the defending counsel sums up in a speech, and after that the prosecuting, or plaintiff's, counsel replies on the whole case. The judge sums up. After the summing-up the jury give their verdict, and then the judge gives judgment on their findings. Questions of fact are for the jury to decide, and questions of law are for the judge alone. In Scotland, jury trials are conducted in the same way, but without opening speeches. See Evidence.

TRIAL BY BATTLE. In this the parties in a civil case or appeal of felony could decide the action by personal combat. In the first case men were usually hired to fight the duel, but in cases of felony or murder accuser and accused fought personally until one was slain. The last trial of this kind took place in 1639.

TRIANGLE (Lat. *tres*, three; *angulus*, angle). In geometry, any figure formed by three intersecting lines. When the lines are straight the triangle is a plane triangle. In spherical triangles the sides are arcs of great circles of a sphere. Triangles are called equilateral, isosceles, and scalene, according as all three sides are equal, two sides are equal, or all sides unequal.

TRIANGLE. In music a percussion instrument. It is a steel rod bent into triangular shape, with one open angle. Suspended by a cord, it is struck by another small steel rod of spindle form so as to allow of heavier or lighter strokes, as desired. Possessing a bright and silvery tone, it is useful for rhythmical effects, and is in general use in military bands.

TRIANON. Buildings in the park of the palace of Versailles. The Grand Trianon is a long, single-storey building built by Hardouin-Mansart, 1687, for Louis XIV. It contains interesting pictures, chiefly of the French 18th century schools. The Petit Trianon lies a little to the E. Originally built, 1762-63, by Louis XV, for Madame Dubarry, it was presented by Louis XVI, in 1774, to Marie Antoinette, who here established a miniature country village, farm, etc. At the Grand Trianon on June 4, 1920, the treaty between Hungary and the Allies was signed. See Hungary; Versailles.

TRIASSIC SYSTEM. In geology, system of rocks following the Carboniferous and preceding the Jurassic systems. The rocks are the oldest of the Mesozoic formations and, once known as New Red Sandstone, are now divided into three series: the Keuper, Muschelkalk, and Bunter. The rocks of the Triassic period are chiefly red or mottled sandstones or shales and limestones, and red marls. In the

midlands in England, and in Scotland and Ireland, Triassic rocks cover large areas. During the Triassic period cycads, conifers, and gigantic equisetums flourished, amphibian labyrinthodonts were common, and ichthyosaurs, dinosaurs, crocodiles, and plesiosaurs were numerous.

TRIBE. Social group having a common speech cultural level, and body of customs, and claiming a common ancestry. In ethnology the term denotes the simplest sociopolitical unit, based on endogamy, marriage outside the tribe being discouraged, but often comprising two or more exogamous phratries or clans.

Government is effected by means of tribal or customary law maintained either by public opinion expressed through the elders, or by headship elective or hereditary. In aboriginal America the tribal organization passed through every stage from the simplest (Iroquoians) to such complex unions as the Iroquois confederacy. Negro and Bantu Africa are essentially tribal, the latter having developed a high level of kingship for the direction of warfare. See Clan; Ethnology.

TRIBUNES (Lat. tribunus). Title of various military and civil officers of Rome. Military tribunes were originally commanders of the tribes. Six were appointed for each legion.

More important were the tribunes of the people or plebs. When Rome established the republic in 509 B.C., the plebeians shared in the comitia centuriata, or national assembly, but the magistracies were confined to the patricians. In 494 B.C. the plebeians obtained the right to appoint from among themselves two tribunes authorized to protect the plebeians against arbitrary action by the magistrates. The numbers were raised to five and then, in 457, to ten. In 287 the exclusively plebeian assembly, the comitia tributa, became an independent legislative body, while the tribunes individually had the power of initiating legislation, and of imposing a veto upon the enactment of proposed laws.

The Tribune was the title of a former London daily Liberal newspaper. It was founded by Franklin Thomason, Jan. 15, 1906, and stopped Feb. 7, 1908.

TRICERATOPS (Gr. treis, three; kera, horn; ops, face). Fossil horned dinosaur. The triceratops flourished in the Cretaceous epoch, and skeletons have been found in deposits of that period in N. America. It had a skull over 6 ft. in length, and the total length of the animal was 25 ft. It had three horns, a small one on the nose, and two just above the eye sockets. Triceratops was herbivorous, and in proportion to its size had a very small brain. See Dinosaur.

TRICHINOPOLY. Town of Madras Presidency, India. It lies S. of the Cauvery at the head of the delta, and is a rly. junction on the Madras-Tuticorin line. The temple of Mathubuthesvaram crowns a hill (273 ft.) ascended by stone steps. Pop. 120,422.

TRICOLOR. Term generally applied to the blue, white, and red national flag of France. It originated in the early days of the first Revolution, and was a blending of the colours of the National Guard of Paris, who bore cockades of the city colours, red and blue, and of the royalist troops, who bore white cockades. These were grouped in a flag of three perpendicular stripes

of equal width, the white being placed between the blue (against the pole) and the red. It was finally adopted as the national flag.

TRICYCLE. Three-wheeled machine used for riding. An adaptation of the velocipede, it was introduced about 1878 as a substitute for the high bicycle. Tricycles are worked on the same principle as the bicycle (q.v.), but are now little used, except in special forms, one of which is hand-propelled by persons unable to use their legs, and another, the carrier-tricycle, is furnished with a box for the delivery of goods from shops, etc.

TRIDENT. In Greek mythology, the three-pronged spear which Poseidon the Roman Neptune, god of the sea, bore as the symbol



Trieste, Italian port on the Adriatic. The Grand Canal and, in the distance, the church of S. Antonio

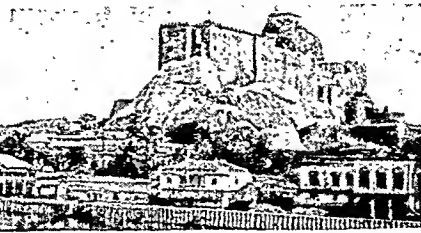
of his sovereignty. It has come to be generally regarded as the emblem of sea power, and as such is carried by Britannia (q.v.).

In gladiatorial combats in ancient Rome the trident was used by the class of gladiators called retiarii. The retiarius tried to entangle his opponent with a net, the trident being then used to dispatch him after being entangled. See Neptune.

TRIENNIAL ACT. There have been in English history two Acts bearing this name. In 1641 the Long Parliament passed an Act declaring that more than three years must not elapse without a parliament being called. The second Triennial Act, passed in 1694, ordained that no

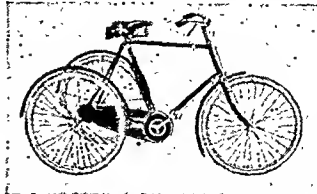
Parliament should last longer than three years. The second Act was repealed by the Septennial Act of 1716.

TRIESTE. Seaport of Italy, formerly in Austria. It stands on the Adriatic at the head of the gulf of Trieste, 73 m. N.E. of Venice. The old town is built on the steep Castle Hill. The modern town borders on the sea. Between them runs the Corso, the principal thoroughfare. The cathedral of San Giusto was built in the 14th century on the site of a Roman temple, and the museums are rich in Roman antiquities. The famous



Trichinopoly, Madras Presidency. The famous Rock, 273 feet above the city. It is ascended by a covered stone staircase and on it are two Buddhist temples

Château Miramar, built for the emperor Maximilian of Mexico, is 5 m. away. Near the harbour are the town hall and the Exchange (Ter-gesteo). A university was founded in 1924.



Tricycle. Modern form of a machine first introduced about 1878

In the time of Pliny Trieste (Tergestē) was a Roman colony. In the Middle Ages it was the capital of an independent republic, which came under Austrian rule in 1382. Charles VI declared it a free port in 1719, and, its privileges being extended by Maria Theresa, the port

sprang into importance as the great emporium for Austrian trade in the Adriatic. The city and port were taken by the French and annexed to Illyria in 1809, but restored to Austria five years later. In 1867 the district was formed into an administrative crown land. After the Great War the port of Trieste was assigned to Italy.

Shipbuilding has long been one of its chief industries, and there is an extensive output of machinery. Among the industries are oil refining, dyeing, and the manufacture of musical instruments, pottery, wax lights, and liqueurs. The trade in wine and oil is very large. Tobacco, furs, wax, corn, and wool are exported. Pop. 255,480.

TRIFORIUM. In ecclesiastical architecture, an upper storey over the aisle of a cathedral or large church with a series of openings into the nave immediately above the crowns of the nave arcade. These openings were arcaded, and in Norman and Early English work were of considerable height. In the Christian basilica the triforium was used for the accommodation of women. Noteworthy examples are those of Westminster Abbey and Peterborough Cathedral.

TRIGLYPH (Gr. treis, three; glyphē, carving). In classic architecture, an ornament of the Doric frieze, consisting of a block grooved into three vertical sections and chamfered on the outside edges. One is placed over each column and, in the simple form, one between the columns.



Triforium above the north transept of Westminster Abbey, a fine example of Gothic tracery. See above

TRILOBITES (Gr. treis, three; lobos, lobe). Group of fossil marine animals belonging to a sub-class of Crustacea. The animals were extremely numerous in the Cambrian and Silurian periods, after which they disappeared. Trilobites were covered with a hard calcareous shell, oval in shape, and divided by two dorsal furrows into three longitudinal lobes giving the animal its name. Many were capable of rolling themselves up so that the soft lower parts of their bodies were protected from attack, a position in which many fossils are found. Little is known of the life of Trilobites, except that they were marine feeders living on the bottom of the sea. See illus. p. 1353.

TRILOGY. In drama, a term originally employed to denote a series of three separate plays on one continuing theme. A classic

example is found in the Agamemnon, Choephoroi, and Eumenides of Aeschylus. Shakespeare's three parts of Henry VI may be regarded as a trilogy, as also may Schiller's Piccolomini, Wallenstein's Camp, and Wallenstein's Death. The word has come to be employed of novels and other works, where a writer has given a continuity of theme to three separate books.

TRIM. Urb. dist. and eo. town of Meath, Irish Free State. On the Boyne, 30 m. N.W. of Dublin on the G.S. Rlys., it is the centre of an agricultural dist. There are ruins of King John's castle, founded in 1173, as well as, across the river, the remains of the abbey of S. Mary. Pop. 1,325.

Trimdon. Colliery centre of Durham. On the L.N.E. Rly., it is 4 m. N.E. of Sedgfield. Pop. 5,410.

TRIMETHYLAMINE. Liquid with a penetrating fishy odour, which forms salts by direct combination with acids, like ammonia. It is prepared from the vinasses or residues obtained in refining beet sugar. Trimethylamine is used for preparing pure potassium carbonate from potassium chloride, and it has also been employed in medicine for rheumatism and gout.

TRIMMER. Term applied to vacillating politicians, the allusion being to one who trims his sails to catch every favouring breeze. It was coined by the marquess of Halifax (1633-95), who in a work entitled *The Character of a Trimmer*, 1684, ably defended his policy as being well balanced and moderate. See Halifax, Marquess of.

TRINCOMALEE. Seaport of Ceylon. It stands on the N.E. coast, 99 m. N.E. of Kandy, and was a British naval and military station until 1905. The famous temple of a thousand columns was destroyed by the Portuguese in 1622, and from the materials Fort Frederick was built. Pop. 9,442.

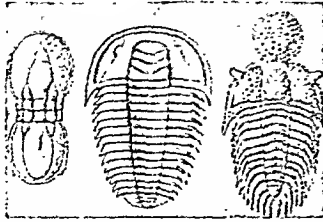
TRING. Market town and urban dist. of Hertfordshire. At the base of the Chilterns, it is 32 m. from London by the L.M.S. Rly., and is also on the Grand Union Canal. There is a fine Perpendicular church. Tring Park, the seat of Lord Rothschild, has a collection of wild animals and a zoological museum. Market days, Mon. and Fri. Pop. 4,352.

TRINIDAD. Island of the British W. Indies. Separated from Venezuela by the gulf of Paria, it lies immediately N. of the mouths of the Orinoco. Port of Spain is the capital. Its area is 1,862 sq. m. Natural features include the Maracas Falls, N.E. of Port of Spain, which drop over a sheer precipice 312 ft. high, several mud volcanoes, and the famous pitch lake near Brea. The climate is tropical, and the products include petroleum, cocoa, and sugar. Large oil refineries have been erected. In 1889 Tobago was separated administratively from the Windward Islands and united with Trinidad. Pop., with Tobago, 397,093.

TRINITARIANS OR REDEMPTIONISTS. Religious order for men, founded in Paris, 1198, by S. John of Matha and S. Felix of Valois, with the object of redeeming Christians who were in slavery under the Moors. Members wore a white habit, with a red and blue cross on the breast. In England in 1244 they established 11 small houses.

The Trinitarian nuns were originally an association of women who raised funds for the Trinitarian order, and later became a religious congregation. They undertake the

education of children and the care of the sick poor. They have two establishments in England, at Bromley and Kidderminster.



Trilobites. Examples from the Cambrian system (left to right): Hypoparia, Agnostus princeps; Opisthoparia, Olenus catenatus; and Proparia, Stauroparia Murchisoni. See art. p. 1352

By courtesy of the Trustees, British Museum

use it has been mixed with a variety of substances, such as trinitroresol, trinitrotoluene, etc., to make it less sensitive and lower its melting point.

TRINITROTOLUENE, T.N.T., OR TROTYL. Important high explosive, formed by the substitution of three nitro (NO_2) groups in the benzene nucleus of the toluene molecule. In England it was only manufactured in small quantities for industrial use until the Great War, when large plants were installed to meet the military requirements. It is less powerful and brisant than trinitrophenol, but is less sensitive, is insoluble in water, is not acid, and does not form dangerous compounds like the picrates. It has a lower melting point, simplifying casting, and is less dangerous to manufacture and use. See Amatol; Ammunition.

TRINITY, HOLY. Theological term for the mystery of one God in three persons—the Father, the Son, and the Holy Ghost, co-equal in all things. The doctrine is derived from the O.T., is implied in the N.T., and is affirmed by the Athanasian, Apostles', and Nicene Creeds, and Article I of the Church of England. See Arianism; Unitarianism.

Trinity Sunday, in the Church calendar, is the Sunday after Whit Sunday. The octave of the Pentecost has long been regarded as specially dedicated to the worship of the Trinity. The festival was first authorised by Gregory IV in 828, and has been held on its present day since 1334.

TRINITY COLLEGE. Largest of the colleges of Cambridge University. It was founded by Henry VIII in 1546 by the amalgamation of nine earlier foundations. Much of the buildings was remodelled by Thomas Neville, master, 1593-1615. The hall, 1604-8, has much in common with that of Middle Temple, London. The library, designed by Wren, 1676-95, contains carvings by Grinling Gibbons. There are five courts. The mastership is a crown appointment.

Trinity College, Oxford, was founded in 1555 by Sir Thomas Pope, who obtained for the first buildings a house of Benedictine monks known as Durham College. The buildings face Broad Street and Parks Road, and are surrounded by beautiful grounds. They include some modern ones as well as remains of Durham College. The chapel, built about 1700 in the Classic style, contains the tomb of the founder. A new library was opened in 1928 as the college war memorial. Newman was a member.

TRINITY COLLEGE. Irish university in Dublin. Founded in 1591, it was for long confined to members of the Anglican Church. In 1873 religious tests were abolished, but it still remains in many respects a Protestant society. It consists of one college only, under a provost. Since 1903 women have been admitted to its degrees. The university sends three members to Dail Eireann.

The university buildings are a prominent feature in Dublin. Parliament Square and Library Square contain the chapel, the dining hall, the examination hall, and the library, with its priceless collection of Irish manuscripts. Elsewhere are the various laboratories, the museum, and medical school.

Trinity College of Music was founded in 1872 and incorporated in 1875 as Trinity College, London. The building is in Mandeville Place, Manchester Square, London, W.

TRINITY HALL. College of Cambridge University. It was founded in 1350 by William Bateman, bishop of Norwich, for a master, 13 fellows, and certain scholars, specially for the study of canon and civil law. The library, 1560, possesses a remarkable collection of law books.

TRINITY HOUSE. Corporation which has supervision over pilotage around the British coasts and over all lighthouses, lightships, and beacons. It dates from 1514. It maintains almshouses, and gives pensions to distressed mariners and their widows. The Elder Brethren of Trinity House are chosen from among members of the royal family, statesmen, retired naval officers of high rank, and prominent officers of the mercantile marine. The headquarters are at Trinity House, Tower Hill, London, E.C. There are Trinity Houses at Hull and Newcastle. See Pilot.

Triode. Thermionic valve with three electrodes. See Thermionic Valve.

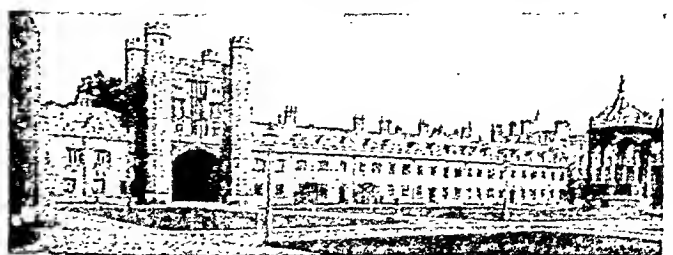
TRIOLET. Verse form derived from the early French dance-songs and characterised by the refrain idea. It consists of eight lines, usually octosyllabic, though trimeters are common in English, of which the first, fourth, and seventh are the same, and the second is identical with the eighth.

TRIPHENYLMETHANE. Solid hydrocarbon obtained by the interaction of chloroform and benzene in the presence of aluminium chloride. The liquid thus obtained is distilled and yields benzene, diphenylmethane, and triphenylmethane. The latter is the source of the important series of rosaniline dyes.

Triplane. Aeroplane whose wings are arranged in three tiers, one above the other. See Aeroplane.

TRIPLE ALLIANCE. Name given to any alliance between three countries. There have been a number of these in and since the 17th century, but the most famous is the one made between Germany, Austria, and Italy in 1882. Renewed several times, it was broken when, in 1914, Italy refused to join in the war against the Allies.

The Triple Entente is the name given to various agreements or understandings made in



Trinity College, Cambridge. Great court and fountain; left of the main gateway are the rooms formerly occupied by Sir A. Newton, Macaulay, and Thackeray

the 20th century between Great Britain, France, and Russia. They were not formal enough to be called alliances. See Entente Cordiale.

TRIPOLI or **TARABULUS**. Town of Syria. About 40 m N N.E. of Beirut, it lies 2 m. from the Mediterranean, its port being El Mina. It trades in silks, wool, grain, oranges, and sponges. It figured in the Crusades. During the Great War it was occupied by the British, Oct. 13, 1918. Pop. 37,260.

TRIPOLI. Capital of Tripolitania. The name is sometimes applied to Tripolitania and also to Italian Libya generally. The city stands on a point of land jutting into the Mediterranean, and contains handsome mosques, a remarkable Spanish fortress, many beautiful gardens, and, since the Italian occupation, numerous government buildings. The most celebrated monument is the marble arch of Marcus Aurelius. The city stands on the site of the ancient Oea. From it caravan routes diverge to Lake Chad, Timbuktu, and Darfur, as well as three lines of rly. A fine port has been constructed by the Italians. Pop. about 60,000.

TRIPOLITANIA. Western portion of the Italian colony of Libya. It may be divided into four regions. The first, along the seaboard, is fertile, and contains palms and fruit trees. The second, the highland or Jebel region, is suitable for cereals and contains large fertile districts. Much of this region is covered with esparto grass. The third region contains a number of oases, while the fourth, extending into Fezzan, is mainly desert.

The principal caravan trade is between Benghazi, in Cyrenaica, and Wadai, and Tripoli and the Central Sudan, via the oases of Fezzan. Important centres of population include Tripoli, the capital, Gharyan, Homs, Misurata, and the oases of Ghadames, Ghat, and Murzuq. The area is about 300,000 sq. m. Pop., European, about 20,000; native, 650,000.

Tripolitania contains many remains of antiquity. The original settlements of the Phoenicians passed to the rulers of Barca (Cyrenaica) and afterwards to the Carthaginians. Subsequently the region was occupied by the Romans and the Arabs, and in the 16th century it fell under Turkish domination. In 1835 Tripoli was proclaimed a Turkish vilayet. War broke out between Turkey and Italy in Sept., 1911, and the Italians occupied Tripoli. In Nov. Italy issued a decree annexing Tripoli, but hostilities continued until Oct. 18, 1912, when by treaty Turkey renounced her sovereignty over Tripoli and Cyrenaica. See Cyrenaica; Italy; Libya.

TRIPOS (Gr. tripous, three-footed, tripod). In Cambridge University, name given to the honours degree examination in certain subjects. In the 16th century *tripos* was the name given to the three-legged stool on which the champion of the university sat when undergraduates were admitted to the degree of bachelor of arts. The term was then applied to his opening speech, and later to the Latin verses composed by the new B.A.'s. See Cambridge.

TRIPTOLEMUS. In Greek mythology, son of Celeus, king of Eleusis. In gratitude for the hospitality shown to her by Celeus when she was wandering over the earth in search of her daughter Persephonē (q.v.), the goddess Demeter gave Triptolemus a chariot with winged dragons with which to visit the whole world and give mankind seeds of corn. Pron. Trip-tol-ly-mus.

TRIPTYCH (Gr. triptychos, threefold). In ecclesiastical painting, a set of three upright panels, joined together by hinges, each one being painted with a distinct subject. The wings were usually painted on both sides, so that, when folded, a fresh picture was pre-

sented. The Van Eycks and nearly all the great religious painters of the early Renaissance used the triptych, which disappeared, however, in the 16th century. Pron. Triptik.

TRIEME (Lat. triremis, from tres, three; remus, oar). Warship of the ancient Greeks, and of the Romans under the republic, provided with three tiers of oars. The trieme was about 140 ft. long, usually carried two masts, and had a beak or ram. The complement was 200, of whom 170 were rowers, one to each oar. Ships were also built with four, five, or more banks of oars—quadrirèmes, quinquirèmes, etc. See Galley.

TRISTAN DA CUNHA. Island group in the S. Atlantic Ocean. It is some 1,500 m. S.S.W. of St. Helena, almost midway between Cape Town and Buenos Aires. The largest and only populated island is an extinct volcano 8,000 ft. high. The people are descended mainly from a garrison of British soldiers placed there during the captivity of Napoleon on St. Helena, and from settlers from whaling ships. Named after a Portuguese navigator, the islands became British in 1816. The area is 44 sq. m., of which about 12 are habitable. Pop. 130.

TRISTRAM or **TRISTAN**, Sir. Hero of a medieval legend of Welsh or Cornish origin, which was drawn into the Arthurian cycle. Nephew of Mark, king of Cornwall, Tristram is sent to Ireland to bring Iselt as his uncle's bride, but having unwittingly drunk a magic potion, they love each other. Discovered by Mark, he flees to Brittany, where he marries another Iselt, of the White Hand. Having summoned Iselt of Cornwall to heal him of a wound, he is falsely told by his wife that her rival refuses her aid, and the lovers die of grief. The legend figures in poems and an opera.

TRITON. In Greek mythology, a minor sea deity, son of Poseidon. According to later legends there were several Tritons attendant upon Poseidon, represented as part man, part fish, and blowing shells as trumpets.



Tritonia. Flower spike and sword-shaped leaves

TRITON. Name given to a large genus of marine gastropod molluscs, whose shells rather resemble gigantic whelks. The shells were used as trumpets in Roman days. The name is sometimes applied also to the newt. See Newt.

TRITONIA or **MONTBRETIA**. Genus of bulbous herbs of the order Iridaceae, natives of S. Africa. They have sword-shaped leaves in two rows, clasping at the base. The tubular flowers are borne on two-rowed spikes. The most generally cultivated species is the hardy *T. pottii* with orange flowers.

TRIUMPH (Lat. triumphus). In ancient Rome, the ceremonial entry into the city of a successful general. The honour could be granted only by the senate. The general was received at the gate by the senate and magistrates, who headed the procession. They were followed by the chief prisoners taken, and finally by the general in a chariot, with his troops marching behind. The procession passed along the Sacred Way to the Capitol, where a sacrifice was offered to Jupiter.

Triumphal arches were erected by the ancient Romans to commemorate victories. Of the 38 built in Rome, those of Titus, Septimius Severus, and Constantine still stand. Similar arches were built in honour of benefactors, or simply to decorate streets. See Berlin; Paris; Rimini.

TRIUMVIR. In ancient Rome, member of a commission of three charged with some

specific duty, such as repairing temples, coining money, or founding colonies. The most noted Triumvirate was that of Octavian, Antony, and Lepidus in 43 B.C. This was known as the Second Triumvirate, to distinguish it from the private combination of Caesar, Pompey, and Crassus in 60, popularly known as the First Triumvirate. See Rome.

TRIVANDRUM. Seaport and capital of Travancore, India. Situated 2 m. from the Malabar coast, it is the residence of the maharaja, and contains a venerated temple of Vishnu, the Maharaja's College, a museum, and an observatory. Pop. 72,784.

TROGLODYTE (Gr. troglē, cave; dyen, to creep into). Tribe of primitive cave dwellers located by classical writers on the outskirts of the ancient Greco-Roman world. The most renowned inhabited a region (Trogodytica) along the southern Red Sea coast of Egypt. They were cattle herdsmen, whose scanty clothing, use of shell necklaces, etc., indicate a culture derived from a remoter stone age. Their caves on the N. African coast are still occupied by Libyan communities.

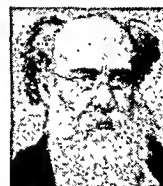
TROGON. Family of tropical birds. Remarkable for their brilliant plumage and often having very long tail feathers, they occur in Africa, S. Asia, and Central and S. America, and include nine genera and many species. The S. American trogons are especially gorgeous, their plumage being mainly metallic green and blood red; their tail feathers are several times the length of the body.

TROJAN WAR. Name given to the semi-legendary ten years' war between the Greeks and Trojans. Originally caused by the abduction of Helen by Paris, it ended in the defeat of the Trojans and the capture and destruction of Troy. The story probably had its origin in the struggle for supremacy between Greek colonists and the non-Greek early inhabitants of the district. Homer's epic poem, the *Iliad*, deals with a phase of the war. See Helen; *Iliad*; Priam; Troy.

TROLL or **TROLD**. In Scandinavian folklore, a creature sometimes described as a mere unearthly spectre. Sometimes, however, trolls are giants or giantesses possessed of magical, and generally maleficent powers. In Icelandic legends the trolls are cannibalistic.

TROLLOPE, ANTHONY (1815-82) British novelist. Born in London, April 24, 1815, he entered the postal service in 1834. His duties involved much travelling, and afforded time for writing. He died Dec. 6, 1882.

Of Trollope's many novels the best are in the so-called Barchester series. This began with *The Warden*, 1855, and was followed by



Anthony Trollope, British novelist

Barchester Towers, *Framley Parsonage*, *Dr. Thorne*, and *The Last Chronicle of Barset*. They are perhaps unequalled for the pictures, often satirical, they give of life in and around an English cathedral city. Trollope also wrote many books of travel, *Lives of Thackeray* and



Triumphal Arch of the Emperor Titus on the Via Sacra, Rome

Cæsar, and contributed largely to the reviews and magazines. His Autobiography, edited by his son, H. M. Trollope, appeared in 1883.

TROLLOPE, FRANCES (1780-1863). British author. Born at Stapleton, Bristol, March 10, 1780, daughter of William Milton, she married, in 1809, Thomas Anthony Trollope (1774-1835), with whom she spent three years, 1827-30, in the U.S.A. She published, in 1832, *Domestic Manners of the Americans*, a book which gave a good deal of offence, especially in its references to slavery. Having returned to Europe, she wrote novels, including *The Vicar of Wrexhill*, 1837, and *Widow Barnaby*, 1838, until her death at Florence, Oct. 6, 1863.

TROMBONE. Wind instrument developed from the sackbut (q.v.). It consists of two lengths of cylindrical brass tube, bent so as to render it easy to handle, and having a mouthpiece at one end and a bell at the other. One length of the tube is the slide, by moving which the player is able to obtain different harmonic series. These variations, seven in number, are called positions; each successive position alters the pitch by a semitone. Correct intonation is not mechanical, but depends upon the efficiency of the performer. The trombone, used in the orchestra, is made in three or more sizes.



Martin van Tromp,
Dutch sailor
After Lievens

TROMP, MARTIN HAPPERTZON VAN (1597-1653). Dutch sailor. Born at Briel, he entered the navy, 1607, rising to admiral, 1637. He was defeated by Blake, May 19, 1652, off Dover, and Nov. 29 of the same year won over him the battle of Dungeness, after which, it is said, he sailed up the Channel with a broom tied to his masthead. In 1653 he encountered the English off Portland, the N. Foreland, and Scheveningen, being killed July 31. He was buried at Delft.

His son, Cornelius van Tromp (1629-91), served against the English in the Mediterranean, 1652-53. He was defeated at Southwold or Sole Bay, 1665, and in 1673 took part in the battle of Schooneveld. He died May, 1691.

TROMSÖ. Seaport of Norway. It is on an island of the same name, and is the chief port for Spitsbergen. Despite its lat., 69° 50' N., it has a relatively mild climate. The chief industry is fishing. Pop. 10,071.

TRONDHJEM. City of Norway, also known as Nidaros. It lies at the mouth of the river Nid, on Trondhjem Fiord, 350 m. by rly. N. of Oslo (Christiania). A fort crowns the hill of Christianssten, and a second is on the neighbouring islet of Munkholm. The cathedral dates partly from the 11th century, but mainly from the 12th and 13th centuries. Frequently damaged by fire, it has been rebuilt, added to, and restored. It is the place of coronation of the kings of Norway. Wood pulp and tobacco factories, saw mills, machine shops, shipyards, and fish curing factories are

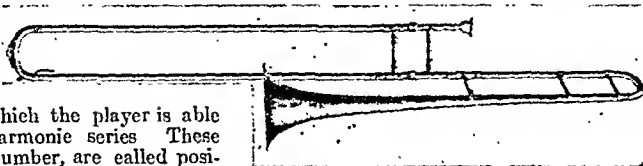


Trondhjem. View of the Norwegian town showing the great bend of the Nid before it enters the fiord

the principal industrial establishments, and timber, copper ore, fish, train oil, wood pulp, and eordage the chief exports. In 1929 its name was changed to Nidaros. Pop. 55,030.

TROON. Burgh and seaport of Ayrshire, Scotland. Situated 9 m. S.W. of Kilmarnock, on the L.M.S. Rly., it is a popular resort with fine sands and several golf courses. The harbour, which is well sheltered and can accommodate large vessels, contains dry docks and shipbuilding and rope making yards. Coal is exported. Pop. 9,474.

TROOP (late Lat. *truppa*, *erowd.*) Literally, a crowd of people. In the plural it is a synonym for soldiers. More specially, a troop in the British army is a small unit of cavalry, forming part of a squadron. It numbers about 40 men and horses and is under a subaltern.



Trombone. Tenor instrument in B flat
By courtesy of Hawkes & Son

The term *trooping the colours* is used for the ceremony of carrying the king's colour along the front of a regiment, performed on the king's birthday. See *Cavalry: Squadron*.

TROPICS. Two parallels of latitude, one 23½° N. and the other 23½° S. of the equator. The name is also given to that part of the earth's surface lying between these lines. The most northerly limit of the sun's migration is reached on June 21, when it is seen overhead at the tropic of Cancer, the parallel of latitude 23½° N. of the equator. On Dec. 21 the southern limit, the tropic of Capricorn (23½° S.), is reached. The words *Cancer* and *Capricorn* are used because in June the sun appears to enter the constellation of Cancer, and in December that of Capricorn. See *Equator*.

TROSSACHS, THE (Gael. *bristling country*). District of Perthshire, Scotland. It is a mt. pass stretching W. from Loch Achray to Loch Katrine, dominated by Ben Venue, 2,393 ft., and Ben A'an, 1,850 ft. The rough steep sides of the hills are thickly wooded, and the winding road is traversed by tourists for the picturesque scenery of the defile. See *Achray*, *Loch*; *Ben Venue*; *Callander*; *Lomond*, *Loch*; *Perthshire*.

TROTSKY, LEV DAVIDOVITCH. Name assumed by the Russian Bolshevik leader Leiba Bronstein (b. 1877). Born near Elizavetgrad, the son of a Jewish chemist, he was banished to Siberia for four years as a revolutionary in 1899. During the attempted revolution in Leningrad, 1905, he was again banished to Siberia, for life. Within six months Trotsky escaped, and for some years lived in France, Switzerland, and elsewhere.

At Leningrad, during the revolution of 1917, he became a supporter of Lenin (q.v.). After a time the two formed the Bolshevik Revolutionary Committee, and on Nov. 8 he, with Lenin, seized the reins of government

and established the Council of the People's Commissioners, Lenin being its president and Trotsky commissary for foreign affairs. In 1918 he became commissary for war, and in 1924 resigned from all Soviet offices. In 1928 he was expelled from the country, being still in exile, 1930. See *Bolshevism*; *Russia*.

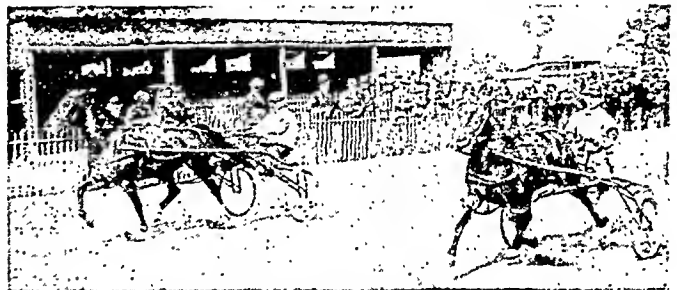
TROTTERING. Form of horse racing. In modern trotting races the horse is driven in a sulky having two bicycle wheels 28 ins. in diameter with pneumatic tires. This racing machine weighs only about 25 lb. The ideal trotting ground is an oblong-shaped track with rounded ends, either half a mile or a mile in circumference, and the record time is a little under two minutes for a mile.

TROUBADOUR (Prov. *trobador*, from *trobar*, to invent). Name given to a class of medieval poets, chiefly in Languedoc and Provence. They flourished from about 1090 to 1290, and composed lyrical poetry in the



Troubadour accompanying himself on a fiddle

From a 14th century sculpture, church of S. Denis, Paris



Trotting meeting at Parsloes Park, Barking, a leading English centre of this sport; close running between two competitors

langue d'oc, being thereby distinguished from the *trouvères*, who used the *langue d'oïl*. Their poetry exhibited an immense variety of complicated metrical forms, and became increasingly artificial. They usually accompanied themselves on the *fidel*, a five-stringed instrument played with a bow, somewhat resembling the later viol.

The troubadours exerted a remarkable social and political influence by developing the chivalrous and romantic conception of love and refining the relations of the sexes.

TROUBRIDGE, SIR ERNEST CHARLES THOMAS (1862-1926). British sailor. Born July 15, 1862, he entered the navy in 1878.



The Trossachs, Perthshire. Path by the waters of Loch Katrine

He was captain and chief of staff, Mediterranean 1907-8, and chief of the war staff at the admiralty. 1911-12. When the Great War broke out he was second in command to Admiral Sir Berkeley Milne in the Mediterranean and was much criticised over the escape of the Goeben (q.v.), was court-martialled, but fully and honourably acquitted. Rear-admiral 1911, vice-admiral, 1916, he became admiral in 1919, and was knighted in that year. He died Jan. 28, 1926.

TROUT (*Salmo trutta*). Fresh-water food fish of the family Salmonidae. It is a native of the rivers that flow into the N.E. Atlantic, the Mediterranean, Caspian, and Black Seas. It has a rather short and compressed body, a small well-shaped head with blunt conical snout, and is clothed with rounded scales. The colour is a greenish brown above, paling below to a dirty white. There is a small appendage (adipose fin) of fatty tissue between the dorsal and the tail fins. On the lower side there is a pair of pectoral fins just behind the gill covers, a ventral fin below the lower edge of the dorsal, and the anal fin is below the adipose. The head and the sides, as well as the back and tail fins, are dotted with round or X-shaped black spots.

The size and weight vary considerably. Its average length is a foot and the weight from $\frac{1}{2}$ lb. to 2 lb. Trout live in running, clear streams, or in the lakes from which such streams originate. Like salmon, they seek the shallow upper waters for spawning. Their food consists of crustaceans, insects, snails, worms, the eggs of salmon and other fishes, and small fishes. See *Sea Trout*.

TROUVILLE. Watering place of France. It lies at the mouth of the Touques, 10 m. S. of Havre, with Deauville (q.v.) on the opposite bank. It owes its popularity to the number of French artists and men of letters who frequented it. British hospitals were established here in the Great War. Pop. 6,000.

TROWBRIDGE. Urb. dist. and market town of Wiltshire. It is 11 m. S.W. of Devizes, has a station on the G.W.R., and is served by a canal. The fine Perpendicular church of S. James contains the tomb of George Crabbe the poet who was rector here. The town has various industries. The woollen industry was established here before the 16th century. Market day, Tues (alternate). Pop. 12,133.

TROY. Ancient city in Asia Minor. Immortalised in Homer's *Iliad* as Priam's citadel, whose capture was the objective of the Trojan War, its site was disputed even in antiquity. It was finally identified in 1893 by W. Dörpfeld's excavations, completing H. Schliemann's in 1870-82, on the ruin-mound of Hissarlik, 162 ft. high, and $3\frac{1}{2}$ m. from the Dardanelles mouth. The excavations ultimately revealed nine superimposed layers of debris. Of these the sixth, a substantial citadel, with massive gated walls of ashlar, wells, brick houses and painted pottery of the Mycenaean age, was the scene of Homer's Troy. See *Aegean Civilization*; *Archaeology*; *Homer*; *Iliad*; *Priam*; *Trojan War*.

TROY. City of New York State, U.S.A. It stands at the head of navigation of the Hudson river, 6 m. N. of Albany. The Rensselaer Polytechnic Institute is one of the finest institutions of its type in the U.S.A. Important manufactures are shirts, cuffs, collars, hosiery, etc. Pop. 72,223.

TROYES. City of France, capital of the dept. of Aube. It stands on the Seine, 103 m. S.E. of Paris. The cathedral, begun in the 13th century, has some good stained glass. Other fine old churches include those of S. Urban, S. John, S. Nicholas, and La Madeleine, each with

notable decorations, glass, or relics. The abbey of S. Loup is now a museum, while the buildings of another abbey are used by the municipality. Secular buildings include the hôtel de ville and the Hôtel Dieu. The chief industry is the manufacture of hosiery, and there is trade in wine. Troyes was made the seat of a bishop in the 4th century, and later became one of the richest cities in Champagne, famous for its fairs. Pop. 58,321.

TREATY OF TROYES. Name given to two treaties between England and France. By the first, concluded May 21, 1420, between Henry V of England, Charles VI of France, and the Burgundians, Henry V gave up the title of king of France, but was to marry Charles's daughter, Catherine, have the title of regent and heir of France, and succeed to the throne of France on Charles's death. The second treaty was signed in 1564, after the English surrender of Havre. By it

France undertook to pay England 120,000 crowns and allow free trade between the countries.

TROY WEIGHT. Measure of weight, introduced, probably from Troyes, France. By an Act of Henry VIII the weight of the pound troy was fixed at 5,760 grains. In 1878 troy weight was abolished with the sole exception of the troy ounce, its decimal parts and multiples, to be used for the sale of gold, silver, and precious stones. The ounce was divided into 20 pennyweights, each of 24 grains.

TRUCE (A.S. *træow*, compact). Term used for a suspension of hostilities, usually for a definite time. In the Middle Ages truces were frequently made for periods of years. A flag of truce is a flag carried by those who are sent to an enemy to ask for a cessation of hostilities.

In medieval times the term truce of God was applied to the prohibition by the Church of hostilities during certain specified times with sacred associations, e.g. feast days, and in Advent and Lent. See *Armistice*.

TRUCK (late Lat. *trochus*, wheel). Term used for a wheeled vehicle, such as those used on railways to carry coal and other heavy materials. It is used by seamen for a small circular piece of wood at the top of a mast.

In another sense truck is used for harter. The truck system is one by which workmen are paid for their services in kind, not in cash. In Great Britain, as elsewhere, employers took advantage of this, and it was made illegal by an Act of 1831, amended in 1887 and 1896.

TRUFFLE (*Tuber aestivum*). Underground edible fungus of the order Ascomycetaceae. The spore-bearing body is potato-like, with a blackish-brown exterior covered with hard warts. The interior flesh is at first white, then brown, with irregular cavities in which the large-netted spores are produced. Its taste is rather insipid, and the smell suggests yeast.

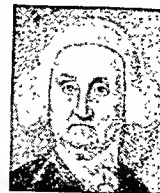
It occurs just below the surface of the ground in woody places. As there is no above-ground indication of its presence, pigs and dogs are trained to hunt for truffles by scent. The Perigord is a distinct species (*T. melanosporum*)

TRUMBULL, JONATHAN (1710-85). American patriot. Born at Lebanon, Connecticut, Oct. 12, 1710, he held various posts in the legislature of Connecticut, of which he was governor, 1769-83. He was the intimate friend of Washington, whose frequent remark, "Let us hear what brother Jonathan has to say," is supposed to have been the origin of the popular nickname for the American people. Trumbull died at Lebanon, Aug. 17, 1785.

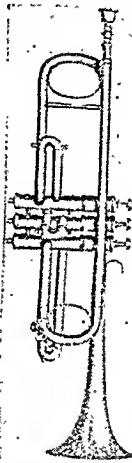
TRUMPER, VICTOR THOMAS (1877-1915). Australian cricketer. Born at Sydney, Nov. 2, 1877, he played for New South Wales, and represented Australia in test matches with England and South Africa. During his career he scored upwards of 40 centuries, and during the 1902 Australian tour totalled 2,570 runs. Altogether in test match cricket he scored 2,263 runs for an average of 32.79 runs per innings, and six times exceeded the century. Trumper died June 28, 1915.

TRUMPET. Musical instrument which, in various forms, is of great antiquity. The modern trumpet consists of a cylindrical brass tube, which becomes conical as it widens out towards the bell. It is bent so as to make it convenient for holding. Originally it could only produce the notes in the harmonic series of the key in which it was pitched, necessitating the use by the player of different crooks whereby the length of the tube could be altered. These crooks gave the keys of F, E, E flat, and D, all of which sounded higher than the notation of C in which the part was written. Even with the crooks, however, there were inevitable lacunae in the scale. The first notable attempt to remedy this defect consisted of an adaptation of the slide principle (see *Trombone*), by which the pitch could be altered by a semitone or a tone without change of crook. The modern instrument, however, is fitted with valves (see *Coronet*; *Horn*), so that any note can be obtained within the compass. See *Lamaism*.

TRUMPETER (*Psophia*). Genus of S. American birds, nearly allied to the cranes. They resemble cranes with a shortish neck and the head of a domestic fowl. They occur in large companies in the forests, feeding on fruit, grain, and insects; and have a loud trumpeting note. The name is given to the American swan.



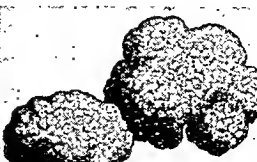
Jonathan Trumbull, American patriot. After John Trumbull



Trumpet used in military bands. Hawkes & Son



Trumpeter. Loud-voiced South American bird. W. S. Herridge, F.Z.S.



Truffle. The underground fungus eaten as a delicacy



Trout. Common or brook variety found in European streams and rivers



Troyes. Cathedral of S. Peter, which is chiefly 16th century work

Trumpet Flower. Popular name of climbing shrubs of the genus *Bignonia* (q.v.)

TRUMPET MAJOR. Non-commissioned officer in the British Army. Having been in disuse for many years, this title was revived in 1928, replacing sergeant-trumpeter.

TRUMPET TREE (*Cecropia peltata*). Evergreen tree of the order Moraceae. It is a native of tropical S. America and the West Indies. The branches are hollow, and are used as musical instruments.

TRURO. City and market town of Cornwall. On the Truro river, a branch of the Fal, it is 11 m. N. of Falmouth, with a station on the G.W. Rly. and a steamer service to Falmouth. Truro was made a bishopric in 1876. The cathedral was begun in 1880; in the fabric is incorporated the S. aisle of the old parish church of S. Mary. The building is in Early English style; the nave was completed in 1903, and by 1910 the central and W. towers were finished. The museum contains Phoenician and Cornish remains. There are tin and pottery works. Market days, Wed. and Sat. Pop 10,833

TRURO. Town of Nova Scotia. It is 2 m. from the sea and 62 from Halifax. An old town, founded in 1761, it is a rly. centre on the C.N. Rlys. and the C.P.R. Pop. 7,562.

TRUST. In English law, a confidence reposed in someone to whom property is transferred, to deal with it in a particular way. A trust may be declared verbally or in writing; and a person may declare himself to be the trustee of his own property for the benefit of another. In a will, a request to a legatee to hold his legacy for another's benefit is a trust.

In English law a trustee is one who has the legal ownership of property, but holds it for the benefit of others, who are called the "beneficiaries." If he is in doubt as to his duty in any special instance, he may take out a summons, asking a judge to direct him as to the course to be pursued. If he find himself with trust property in his hands, and does not know to whom to pay it, as where the beneficiaries or some of them cannot be found, he should transfer it to court for the court to deal with. The Trustee Act of 1925 altered the law to some slight extent. Trustees are not liable for breaches of trust if they act honestly and reasonably. (See Public Trustee.)

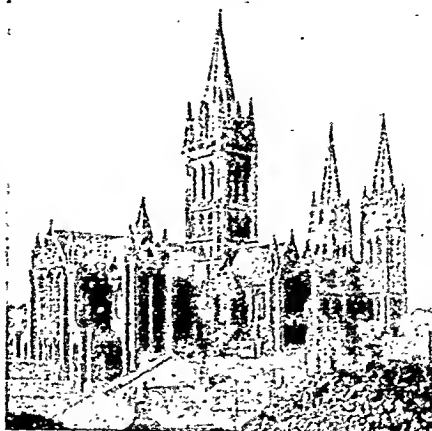
Trustee savings banks are savings banks managed by trustees. (See Savings Bank.)

The term trustee stocks is used for those securities in which, by English law, trustees may invest trust funds without being liable for depreciation therein.

TRYON, SIR GEORGE (1832-93). British sailor. Born Jan. 4, 1832, he entered the navy at the age of 16. He was commander-in-chief of the Australian station, 1884-87, being knighted in the latter year. Appointed commander of the Mediterranean fleet in 1891, he was engaged in manoeuvres off Tripoli when his flagship *Victoria* was rammed and sunk with loss of the entire crew, June 22, 1893.

TRYPANOSOMIASIS. Term denoting disease caused by infection with the parasites known as trypanosomes, transmitted by the tsetse fly (q.v.) and certain other insects. Nagana in horses and cattle, a disease prevalent in the African fly belt, is caused by *Trypanosoma brucei* and *T. congolense*, carried by the tsetse fly. Surra, a form attacking all domestic animals and occurring in the warmer parts of the Old World, is carried by horse or stable flies. Dourine, a similar affection, is transmitted directly from one animal to another, and does not attack cattle. Another form of animal trypanosomiasis is fairly prevalent in South America.

In man trypanosomes cause sleeping sickness and the S. American disease known as



Truro. Cathedral of S. Mary, built 1880-1910, incorporating part of the old parish church

Chagas' disease. The former disease is conveyed by the tsetse fly and the latter by a bug. See Parasite; Sleeping Sickness.

TSANA, TANA, OR DEMBEA. Lake of Abyssinia. It is on the plateau S. of Gondar, and is about 60 m. long by 40. From it issues the Blue Nile, and a few m. to the N. the river Atbara has its source. The floods on both cause the annual flooding of the Nile valley.

TSAR, TZAR, OR CZAR (Lat. caesar). Slav title, meaning emperor. It was used in the Middle Ages in the Balkans, the Bulgarian kings being early known as tsars, and later in Russia. Ivan the Terrible was the first tsar of all Russia. The feminine form is tsaritsa.

TSARITSYN. Town of the Union of Socialist Soviet Republics, also called Stalingrad, capital of the prov. of Stalingrad. It is one of the most important business places on the Volga, much trade being done in naphtha products, grain, timber, fish, salt, and wool. Here merchandise transported on the Volga is transhipped to the rly. for Black Sea ports. Pop. 148,392.

TSARSKOE SELO (Russ. imperial village). Town of the Union of Socialist Soviet Republics, now known as Detskoe Selo. It is in the Leningrad area, 15 m. S. of Leningrad. A former imperial residence, it contains two of the imperial palaces, one dating from the time of Catherine I, the other from that of Catherine II. The rly. to Leningrad was the first in Russia. Pop. 15,000.

TSAVO. River and settlement of Kenya Colony. The former flows E. from Mt. Kilimanjaro, and the latter is on the Uganda Rly., 133 m. from Mombasa.

TSCHAIKOVSKI, PIOTR ILYICH (1840-93). Russian composer. Born at Votkinsk, govt. of Vyatka, May 7, 1840, he studied law, but in 1863 turned finally to a musical career, entering the St. Petersburg conservatoire. Professor of harmony at Moscow conservatoire, 1866-77, he became known as a rising composer. He first conducted in public in Moscow, 1887, and in London, 1888-89. He died from cholera in St. Petersburg, Nov. 6, 1893.

His eight operas include *Eugene Onegin*, 1879; *Mazeppa*, 1884; and *The Queen of Spades*, 1890. His ballets include *The Sleeping Beauty*, 1890, revived in London in 1921, and *Casse-Noisette*, well known as a concert piece, 1892. Among many orchestral works, where his essentially Russian genius is seen to best advantage, are the six symphonies, and five symphonic poems and concerti for violin and pianoforte.



Piotr Tchaikovsky, Russian composer

TSETSE FLY (*Glossina*). Genus of two-winged brown and yellow flies (Diptera). Natives of tropical Africa, about 15 species being known, they vary from a quarter to half an inch in length, and with their wings closed present much of the appearance of the common housefly, but the mouth-parts are developed into a piercing and sucking organ longer than the head.

The flies affect cover near water afforded by reeds, bushes, or forest. Such fly belts were found impassable by the early explorers—carriers, buffaloes, oxen, and horses being stricken down by nagana or fly-sickness. The flies, sucking the blood of animals infected by low organisms known as trypanosomes, transmit the germs to the blood of domesticated animals. The parasite carried by *G. palpalis* and *G. morsitans* produces in man the condition known as sleeping sickness. See Sleeping Sickness; Trypanosomiasis.



Tsetse Fly, natural size

TSINAN. City of China, capital of Shantung prov. It is 4 m. S. of the Hwang-ho and 245 m. S.E. of Peking. It was opened for foreign trade in 1904. Close by are iron mines. Trade is chiefly in silk broadcades, precious stones, and glass. Pop. about 300,000.

Tsingtao or TSINGTAU. Town of the territory of Kiaochow (q.v.), situated in Shantung prov., China.

TSINGTAO, CAPTURE OF. British and Japanese operation in the Great War, Sept. 2-Nov. 7, 1914. The place was defended by about 5,000 Germans, and was heavily fortified. The Japanese land forces numbered 22,980 officers and men, and 142 guns. The British force arrived on Sept. 23, and consisted of the 2nd South Wales Borderers, about 900 strong, and about 450 of the 36th Sikhs. The final attack began on Nov. 6, the fortress surrendering the next day. See Kiaochow.

TSUSHIMA STRAIT. S. channel of the Strait of Korea. It separates the island of Tsushima from Kyushiu and Honshu. The N. channel is called Chosen Strait. At high water Tsushima Island is 40 miles in length, and is divided into two portions. Its area with adjacent islands is 274 sq. m.

The battle of Tsushima, between the Russians and Japanese, took place May 27-28, 1905. The Russian fleet, under Vice-Adm. Rozhdestvensky, left Libau on Oct. 18, 1904, and after a seven months' voyage was almost annihilated by an approximately equal force under Admiral Count Togo (q.v.).



Tuam, Ireland. West front of the R.C. Cathedral

TUAM. City of co. Galway, Irish Free State. Situated 20 m. N. of Galway, on the G.S. Rlys., the city grew up around the abbey, made a cathedral early in the 6th century. It is the seat of a Protestant bishop, the 12th century church of S. Mary having been rebuilt as the cathedral in 1861, and of an R.C. archbishop, Tuam Cross is one of the oldest and finest of the Irish crosses. Pop. 3,293.

TUBE FLOWER (*Clerodendron siphonanthus*). Shrub of the order Verbenaceae, native of India. It attains a height of about 6 ft., and has opposite undivided leaves and terminal clusters of white, funnel-shaped flowers. See illus. p. 1358.

TUBER. Fleishy enlargement of the stem or root of biennial or perennial plants. Tubers contain a store of food to enable the plant to survive periods of frost or drought when its above-ground parts are destroyed. Potato tubers are the swollen ends of underground stems, the eyes being buds which develop into new stems. See Root.

TUBERCULOSIS. Infectious disease of world-wide distribution caused by the tubercle bacillus. Modern research has proved that

the disease is never hereditary, and that it is frequently cured. Infected milk from tuberculous cows, taken into the body of children and young adults, causes enlarged glands in the neck, spinal disease, hip joint disease, abdominal tuberculosis,

etc. The human bacillus is the cause of pulmonary tuberculosis, commonly called consumption or phthisis, and is introduced into the lungs by inhalation. The symptoms of the disease are very variable and insidious. It generally occurs between the ages of 18 and 25, the sufferers becoming anaemic, with loss of appetite and energy, followed by cough and some expectoration. As the disease progresses the lungs are gradually destroyed, until the patient dies in the course of two or three years.

Treatment involves a long period of time, and should be undertaken in a sanatorium. Rest of the lungs and an outdoor life are important, and cod-liver oil is beneficial.

A substance called tuberculin, prepared by Koch in 1890 from cultures of the tubercle bacilli, has been used in the treatment and diagnosis of tuberculosis. See Notification.

TUBEROSE (*Pollanthes tuberosa*). Bulbous herb of the order Amaryllidaceae, a native of Mexico. It has narrow lance-shaped leaves and a tall flower stem ending in a spray of many creamy-white, funnel-shaped, highly fragrant flowers. Pearl is one of the best varieties. Pron. tu-ber-ose.

TÜBINGEN. Town of Württemberg, Germany. It stands on the Neckar, 22 m. S. of Stuttgart. The buildings include the town hall, built in the 15th century, and the Stiftskirche, also of the 15th century. The 16th century dual castle houses the observatory, library, and other parts of the university. Tübingen is noted for its university, founded in 1477. Its professors have included F. C. Baur and other critics of the Bible; hence the term Tübingen school applied to them and their followers. Tübingen has chemical works and is a publishing centre. Pop. 20,276.

TUDOR. Name of a family that gave five sovereigns to England (1485-1603). Its earliest members lived in Anglesey. Owen Tudor married Queen Catherine, widow of Henry V and mother of Henry VI. Their son, Edmund, was made earl of Richmond and married Margaret Beaufort, a descendant of Edward III through John of Gaunt. Their only child was Henry VII. The Tudors retained the throne until the death of Elizabeth

in 1603. From Henry VII, through his daughter Margaret, wife of James IV of Scotland, James I of Great Britain and the later Stuarts are descended. See England: Royal Family.

The name Tudor rose is given to the union of the red and white roses of Lancaster and York, which formed the royal badge of England in 1486.

The term Tudor style is applied to the late stage of Gothic architecture which prevailed in England 1485-1603. See Gothic Architecture.

TUGELA. River of Natal. Rising in the Mont-aux-Sources, where are the Tugela Falls, and running E to the sea between Unvoti and Port Durnford, it forms the boundary between Zululand and Natal proper. It is about 300 m. long.

The river is memorable for a series of actions fought in Dec., 1899, and Jan and Feb., 1900, to bring about the relief of Ladysmith. Several attacks were made on the Boer positions in the hills above the river, but it was not until Feb. 26 that Buller, after crossing the Tugela for the seventh time, was able to make his final advance on Ladysmith. See South African War.

TUILERIES. Former royal palace in Paris. It was so named from the tile yards (tuileries) once on the site. It stood between the Louvre and the Place de la Concorde. Designed by Philibert de l'Orme for Catherine de' Medici, and begun in 1564, the Tuileries long served as a pleasure house for the kings of France. When Louis XVI was brought back to Paris by the revolutionists, the palace became his regular residence; it was subsequently used by the Bonapartes and Bourbons until 1871, when it was burned by the Commune. Its garden, however, remains as a public park, and retains some remarkable statuary. See French Revolution: Paris.

TUKE, HENRY SCOTT (1853-1929). British artist. Born at York, June 12, 1853, the son of a doctor, he studied art at the Slade School and then in Italy and Paris. In 1879 he first exhibited at the Royal Academy. In 1900 he was elected A.R.A. and in 1914 R.A. Two of his paintings, *All Hands to the Pumps* and *August Blue*, were bought by the Chantry Trustees. Tuke died March 13, 1929.

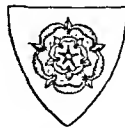
TULIP (*Tulipa*). Genus of brilliantly flowering bulbous plants of the order Liliaceae. Garden tulips were introduced into Britain



Tulip. Brilliantly coloured flowers of the bulbous plant
Sutton & Sons

through Holland about 1550. They are of various heights, from 9 ins to over 2 ft., and the flowers are of all shades and colours and combinations of shades and colours, except blue, from whitest to very dark purple. The parent of the garden tulips is *T. gesneriana*, a rich deep crimson flower with a cup almost as large as a clenched fist, and from it have sprung, by hybridisation, hundreds of nursery-raised kinds. When the foliage has died down, tulip bulbs are lifted and stored in a dry place until the time for planting again arrives.

TULIP TREE (*Liriodendron*). Beautiful flowering, summer-leaving tree of the order Magnoliaceae. It is a native of North America, and was introduced into Britain in 1668.



Tudor rose, in heraldry

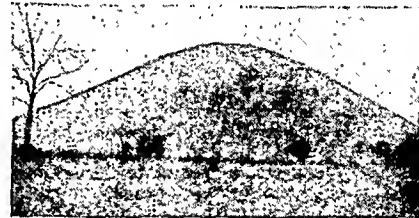
It frequently attains a height of 80 to 100 ft., and, when matured, bears in summer large green, lemon and orange-coloured flowers, shaped like the cups of a tulip.

TULLAMORE. Urban dist. and county town of Ossaly (King's County), Irish Free State. It is 58 m. from Dublin, on the G.S. Rlys. It has an agricultural trade. Pop. 4,930.

TULLUS HOSTILIUS. Third of the seven legendary kings of Rome. He was reputed to have reigned from 670-640 B.C. He was a warlike monarch, and conquered and utterly destroyed Alba, transporting the inhabitants to Rome. It was in this war that the famous incident of the Horatii (q.v.) and Curiatii occurred. He was killed by Jupiter for seeking more than mortal should know.

TULSA. City of Oklahoma, U.S.A. It stands on the Arkansas river, 121 m. N.E. of Oklahoma City. Bricks, glass, and cotton-seed oil are manufactured, and coal mining and oil refining carried on. The neighbourhood produces large quantities of natural gas and crude oil. Pop. 124,478.

TULSE HILL. Dist of S.W. London. In the bor. of Lambeth (q.v.), it lies E. of Brixton Hill and Streatham Hill, and includes Brockwell Park. It is on the Southern Rly.



Tumulus. Silbury Hill, a tumulus in Wilts, probably dating from Neolithic times. See below

TUMMEL. Name of a river and loch in Perthshire, Scotland. The river empties from the E. end of Loch Rannoch, flows E for 9½ m. and then broadens into the loch, ¼ m. wide and 3 m. long. The river thence flows 8 m. E to the falls of Tummel, where it turns S.E. to join the Tay, 7 m. N.N.W. of Dunkeld, receiving the Garry just below the falls.

TUMOUR. A swelling or morbid enlargement due to a mass of tissue which grows independently of the surrounding tissue. Tumours are described as "innocent" or "malignant." The former grow only in the spot on which they first appear; they do not spread to other parts of the body. From malignant tumours small pieces are carried in the blood stream to various parts of the body, where they set up secondary growths. The cause of tumours is unknown.

TUMULUS (Lat. hillock). Burial or memorial mound, especially one distinguished by size, form, or association. Such were Silbury Hill in the Kennet Valley, Wilts; the grave, 100 ft. across, of Patroclus at Troy; the mound, 30 ft. high, raised to Athenian warriors at Marathon, 490 B.C.; the Lydian tomb near Sardis, 200 ft. high, of Alyattes II, 560 B.C.; the Lion Mound at Waterloo. See Barrow; Mastaba; Stone Monuments; Stupa; Teocalli.



Tulip Tree. Showy flower of the N. American tree

TUN. Measure of liquid capacity, containing 252 wine gallons. As the name of a large barrel, the word is probably an older form of ton. A tun of sweet oil is 236 galls.

TUNBRIDGE WELLS. Borough and watering place of Kent. Picturesquely situated on the border of Sussex, it is 5 m. S. of Ton-



Tunbridge Wells. The Pantiles, once a fashionable promenade for visitors taking the waters
Dixon Scott

bridge, on the Southern Rly. At the end of the Parade, long famous as The Pantiles, are the mild chalybeate springs which, discovered in 1606 by Lord North, made the place a celebrated resort of fashion in the 18th century. The church of King Charles the Martyr dates from 1685. Near the town are Penshurst, Rusthall Common with the Toad Rock, Eridge, and other places of interest. A local industry is the manufacture of Tunbridge ware, toys, workboxes, etc. Tunbridge Wells has adopted Bouzincourt. Pop. 35,551.

TUNDRA. Extensive barren lowlands bordering the Arctic coastlands of N. America, Europe, and Asia. The mean temperature of the warmest month falls below 48° F., the winters are long and severe, and the total annual precipitation does not reach 10 ins. Therefore the tundra is a cold desert. The only plants are stunted berry-bearing shrubs, mosses, and lichens. The chief animals are reindeer, caribou, and musk oxen. In winter the tundra is a dreary wilderness of ice and snow. The tundra is sparsely inhabited by Eskimos (N. America), Lapps, etc.

TUNGCHOW. Port of Peking, China. It lies a few miles E. of the city, on the Peiho. There is another city of the same name on the left bank of the Yang-tze near its mouth, in the prov. of Kiangsu.

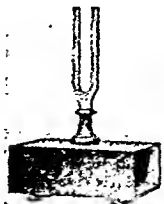
TUNGSTEN. Metallic element. Its chemical symbol is W; atomic weight 184; atomic number 74. It is a hard, grey, brittle metal with a melting point of 3,302° C. It is not found native, but occurs in wolfram and other minerals. It forms a number of compounds. Sodium tungstate is used as a mordant in dyeing and printing, and for fireproofing textiles. The metal increases the hardness of steels, and alloyed with nickel it is used for ballistic purposes. Drawn into fine wire, tungsten is used in the manufacture of incandescent lamp filaments. See Wolfram.

TUN-HUANG OR TUNG-HWANG. Town and oasis in outer Kansu, China. Its former importance arose from its propinquity to the high roads from China to the Roman Orient, and from Tibet to Mongolia. In 1907 Sir Aurel Stein explored its hundreds of cave shrines, and from a cella walled up in 1036 at the Caves of the Thousand Buddhas procured

for the British Museum many paintings on silk, linen, and paper, mostly of the Tang period. See Turkistan.

Tunicata or Urochorda. Group of lowly vertebrate marine animals comprising the ascidians etc See Urochorda.

TUNING FORK. Steel rod bent in the middle, and having at the fold a handle or foot. Owing to its permanence of tone and its almost complete lack of upper partials, it is used for indicating definite pitch.



Tuning fork used for indicating musical pitch
By courtesy of Harkes & Son

TUNIS. Capital of Tunisia. It lies on a lagoon near the S.W. end of the gulf of Tunis, in the N.E. of the country, and is connected by rail with Bizerta and the principal cities of Tunisia and Algeria, and with the sea by a channel dredged in the lagoon to the port at Goletta. The ancient Arab city is of great interest and contains many fine mosques. About three miles distant are the ruins of Carthage. Pop. 185,996. See Africa;

Carthage.

TUNISIA (Fr. La Tunisie). French Protectorate in N. Africa. It extends 550 m. along the Mediterranean between Algeria and Libya. Important cities are Tunis, the capital, Sfax, Susa, and Bizerta. The area is about 48,300 sq. m. Pop. 2,159,708.

Much of the country is occupied by hills, in the S. changing into desert steppes, and in the E. into low and sterile desert tracts; but portions are extremely fertile. Between the mountain chains of the interior are elevated valleys producing cereals, oranges, dates, figs, vines, almonds, and olives. The most important river is the Medjerda. There are several lakes. The chief industry is agriculture. There is considerable mineral wealth, while there is a large production of phosphates. Since the French occupation Tunisia has made rapid progress and is traversed by railways.

In the 7th century B.C. exiles from Tyre and Phoenicians founded the city of Carthage (q.v.). Subsequently passing under the Romans, Arabs, and, in 1575, the Turks, Tunisia contains many remains of antiquity. Under Turkish control it became practically independent. In 1881 a French expedition was sent to the country, and the treaty signed May 12, 1881, placed it under French protection.

TUNNEL (Fr. tonneau, cask). Arched passage cut through a hill, or under a river, to facilitate traffic. Tunnels are also made for mining and sewage purposes.

High-level tunnels through hills and mountains are lined with

masonry where they traverse loose material, and are inclined, so as to enable water to drain away by gravitation. In solid rock no lining is needed. Rock tunnelling has been revolutionised by the power drill. It is now customary to drive tunnels under rivers and cities with a shield, where loose or soft material is encountered, and to line them with rings of cast-iron segments, bolted together. Water is excluded from the workings by air at a suitable pressure. See Blackwall; Ceniz, Mont; Shield.

TUNNEY, GENE (b. 1898) American boxer. Born May 25, 1898, after serving with the U.S.A. forces he became prominent as a heavy-weight boxer. He challenged Jack Dempsey (q.v.), the world champion, and defeated him on Sept. 23, 1926, at Philadelphia. He again defeated Dempsey in 1927, and at the Yankee Stadium, New York, June 26, 1928. Tunney knocked out Heeney in the eleventh round, thus retaining the heavy-weight championship of the world. Shortly after he retired from the ring. In June, 1930, Schmeling, by defeating Sharkey, became champion. Tunney had the reputation of being a student.



Tunny. Large Mediterranean food fish, occasionally found in British waters

TUNNY (Thunnus thynnus). Large fish, belonging to the mackerel family. It is very common in the Mediterranean, and occasionally occurs round the British coasts. The fish frequently grows to a length of over 10 ft., sometimes weighs half a ton, and is a valuable food fish, with flesh which looks very much like beef. It is eaten both fresh and preserved in oil. See Bonito.

TUNSTALL. District of Staffordshire. In the heart of the Potteries, it forms part of the borough of Stoke-upon-Trent (q.v.). It has a station on the L.M.S. Rly.

TUPELO TREE OR OGECHIE LINE (Nyssa capitata). Small tree of the order Cornaceae, native of the southern U.S.A. It grows in swamps, and has alternate, oval leaves, cottony on the under side. The small greenish flowers have the sexes separate. The plum-like fruits are red.

TUPPER, SIR CHARLES (1821-1915). Canadian statesman. Born at Amherst, Nova Scotia, July 2, 1821, he entered the legislature of Nova Scotia in 1855. Secretary of the province, 1857-59, and its prime minister, 1864-67, he was one of the fathers of the confederation of 1867, by which the Dominion was created. Having been minister of inland revenue, customs, public works, and railways, in 1884 he came to London as high commissioner for Canada, but in 1887 returned home to become minister of finance. He returned to his former post in London in 1888, and remained there



Tupelo Tree. Flowering sprays. Inset, left, female flower; right, head of male flowers



Tunisia. Arab in characteristic dress



Sir Charles Tupper, Canadian statesman
Elliott & Fry

until 1896, when he became prime minister of the Dominion. He died Oct. 30, 1915. Tupper was knighted in 1879 and made a baronet in 1888.

His son, Sir Charles Hibbert Tupper (1855-1927), was minister of marine and fisheries, 1888-95; and minister of justice and attorney-general, 1895-96. He was a representative at the Paris tribunal of arbitration in 1892, being made a K.C.M.G. in 1893.



Martin Tupper,
British author

TUPPER, MARTIN FARQUHAR (1810-89). British author. Born in London, July 17, 1810, and educated at the Charterhouse and Christ Church, Oxford, his fame rests almost entirely on his *Proverbial Philosophy*, 1838, which eventually achieved extraordinary popularity; by 1881 a million copies of this commonplace production had been sold in America and 750,000 in Britain. Tupper also wrote mediocre verses, and, in addition, was an indefatigable inventor. He died at Albury, Surrey, Nov. 29, 1889.



Turban as worn
in N. Africa

Early in the 19th century the turban became fashionable among some European women. It is worn by some Indian army units.

TURBINE (Lat. turbo, whipping-top, reel). Machine for converting the kinetic energy of steam or of water directly into rotary motion. The earliest steam engine of which we have any record, the aeolipile of Hero of Alexandria (130 B.C.), was a turbine. It consisted of a hollow ball with two bent arms projecting, and was balanced on pivots. When partly filled with water and heated, steam issued from the arms and caused the vessel to rotate. This was the prototype of the reaction turbine. The other great class of turbine, known as impulse machines, is represented in its elementary form by a wheel having blades set round its periphery on which impinges a jet of steam. The simplest form of turbine is the single-expansion impulse turbine introduced by De Laval in 1888. Cupped buckets are mounted round the rim of a wheel, and into them is directed steam, which is expanded in a divergent conical nozzle, thereby gaining velocity while losing pressure.

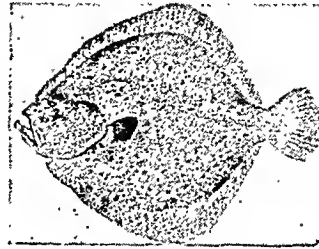
The Parsons compound reaction turbine, introduced in 1884, is made up of a large number of elements or "stages," each consisting of a row of fixed guide blades and a row of moving blades, the latter being attached to a rotating drum and projecting outwards, while the former project inwards from the casing. In order to accommodate the increasing volume of the constantly expanding steam, these elements are made gradually larger from the high-pressure end of the turbine to the low-pressure or condenser

end. At each stage the steam undergoes a small drop of pressure with gain of velocity, and after impinging on the moving blades leaves them with a push-off or reaction effect.

The first use of the steam turbine was for driving electric generating machinery, and so suitable has it proved that turbo-generators are now generally employed in modern steam power stations. The application of the turbine to the propulsion of ships dates from 1897, when the *Turhinia*, a little vessel with the then almost incredible speed of over 32 knots, made her appearance. Within the next decade the turbine had been fitted in fast liners and in warships generally.

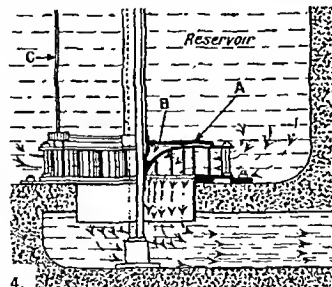
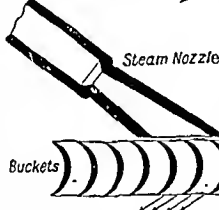
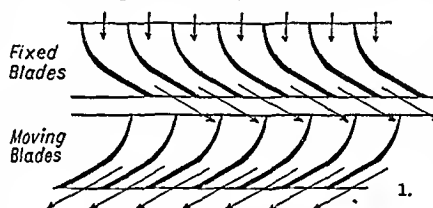
Hydraulic turbines are used for converting water power into mechanical—or more often electrical—energy. The two chief forms, the Pelton wheel and the Francis turbine, are described in the article *Hydro-electric Machinery*.

TURBOT (Rhombus maximus). British food fish. Next to the sole, it is the most highly esteemed of the flat fish for the firmness and delicacy of its flesh. It is greyish brown in colour, with darker spots, and the scales when present are small and inconspicuous. It feeds mainly on other fishes. The turbot fishery is largely carried on off the N.E. coast of England, chiefly by trawling. See Brill.



Turbot, the flat food fish caught off the British coasts

TURCO. Name given to Algerian riflemen. They belong to the regiments, each of six



Turbine. 1. Diagram of blading in reaction turbine. 2. De Laval impulse turbine. 3. Runner of a 10,000 h.p. Pelton wheel. 4. Diagram showing one-half vertical elevation and section of Francis inward-flow turbine. A. Fixed guide wheel; B. Runner; C. Regulator

Persian and Afghan frontiers. Hardy and predatory, they form nine tribes, mostly dwelling in winter villages and summer encampments. They number about 300,000. See Turkmenistan.

TURENNE, HENRI DE LA TOUR D'AUVERGNE, VICOMTE DE (1611-75). French soldier. A nephew of Maurice of Nassau, and

grandson of William the Silent, he was born Sept. 11, 1611, and joined the French army in 1630. In the civil wars of the Fronde, Turenne at first supported the rebels, but later joined Mazarin, and led the royal armies to victory. In the wars of Louis XIV he again proved himself the greatest living master of the art of war, especially in the brilliant campaign of 1674. He was killed July 27, 1675.

TURGENEV, IVAN SERGEIEVITCH (1818-83).

Russian novelist. Born at Orel, in Central Russia, he began his literary career by writing verses. In 1852 came his first volume of studies of peasant life, *A Sportsman's Sketches*, which contributed to the emancipation of the serfs in 1861. He left Russia in 1855, and passed the rest of his life abroad. Turgenev died at Bougival, near Paris, Sept. 4, 1883.

His novels include: *Rudin*, 1856; *A House of Gentlefolk*, 1859; *On the Eve*, 1860; *Fathers and Children*, 1862, which is generally accepted as the author's masterpiece; *Smoke*, 1867; and *Virgin Soil*, 1876. Most of Turgenev's works have appeared in English translations.

TURGOT, ANNE ROBERT JACQUES (1727-81). French statesman and economist. Born May 10, 1727, in 1761 he became intendant of Limoges, effecting remarkable economic reforms in that district. In Aug., 1774, he was entrusted by Louis XVI with the financial administration of France, taking office as comptroller-general. Turgot instituted drastic economies; established free trade in corn; and at the beginning of 1776 he attacked the virtual exemption from taxation of the privileged classes. Those classes united in an attack upon him, and he was dismissed in May, 1776. He died March 20, 1781.

TURIN or **TORINO** (anc. Augusta Taurinorum). City of Italy. It is situated at an alt. of 785 ft. on the Po, 80 m. N.W. of Genoa. It is a modern-looking, well-built city of rectangular plan with straight streets, in parts arcaded. The Piazza Castello in the N.E. is the focus of civic life; here are the Palazzo Madama, once a Roman gateway, the Porta Decumana, later a castle, and a 13th century fortress, enlarged at various dates. From the Piazza radiate important streets, the chief, the Via di Po, leading to one of the city bridges. N. of the Piazza is the Royal Palace. Near is the cathedral of S. John the Baptist (1492-98), with interesting frescoes and relics. The university was founded in 1405. Turin was the capital of the kingdom of Sardinia until 1860 and of Italy, 1861-65. Manufactures include motor cars and artificial silk. Pop. 591,316. See illus. p. 1361.

TURKEY (Meleagris gallopavo). Large bird of the pheasant family (Phasianidae). It is a native of N. America

from S. Canada to Mexico, but is now extinct in the wild state in the settled areas. On its introduction to England it was supposed to have come from the Moslem east, then loosely called Turkey. It is distinguished by its large size, heavy body, and almost bare neck and head, bluish with red warts.



Vicomte de Turenne,
French soldier
After Latouche



Ivan Turgenev,
Russian novelist

The plumage in general is coppery bronze colour marked with black. There is a broad band of white at the tip of the tail coverts and a similar band on the feathers of the tail proper. The male bears on the chest a hanging bunch of black bristles about 9 ins. long. It is omnivorous, and there are many domesticated breeds.

TURKEY. Republic of Europe and Asia, until 1921 the Ottoman Empire. In the 16th century the Turks occupied immense areas in S.E. Europe and N. Africa, but they were gradually deprived of all the latter and nearly all the former. When the Great War began they retained in Europe only about 10,000 sq. m. around and including Constantinople (Istanbul), their old capital, but in Asia they still held upwards of 600,000 sq. m., comprising Asia Minor, Armenia, Kurdistan, Mesopotamia, Syria, Palestine, and large tracts of Arabia, as well as some islands in the Mediterranean.

By the treaty of Lausanne, which in 1923 defined the European and to some extent the Asiatic frontiers of Turkey, the Turkish territories were considerably modified. A treaty of 1925 made further changes. In Asia she retains Asia Minor as far as Transcaucasia and Persia in the E., the S.E. boundaries being Syria and Iraq. Angora is the capital. The area is estimated at 294,416 sq. m. Pop. 13,648,270. In the W. the outstanding natural features are the straits which connect the Black Sea and the Aegean by the Bosphorus, the sea of Marmara and the Dardanelles. A range of hills skirts the sea of Marmara and continues into the Gallipoli peninsula. Around Istanbul the land is flat.

The soil is fertile, but agriculture is primitive. Crops include cereals, tobacco, figs, opium, olives, and cotton. Sheep, goats, and other live stock are reared. The minerals, which are little worked, include chrome ore, silver, zinc, manganese, copper, borax, coal, lignite, and arsenic. European Turkey is traversed

state of disorder, that it seemed as if it must collapse, but, chiefly through the mutual jealousies of the Powers, it survived.

In 1908 the general discontent, which resulted in the Young Turk movement, compelled Abdul Hamid II to restore the constitution and summon parliament. In the next year the Young Turks under Enver Pasha successfully revolted, and parliament voted the deposition of Abdul A. war with Italy in 1911 east Turkey Tripoli (q.v.) and Cyrenaica; the next year saw the outbreak of the Balkan Wars (q.v.), the outcome of which was that Turkey in Europe was reduced to Constantinople and other small districts.

In the Great War Turkey sided with the Central Powers, and after severe losses was granted an armistice, Oct. 30, 1918. In 1920 a government was set up at Angora, and under Mustafa Kemal Pasha (q.v.) this soon became the dominating power in the country. In Jan., 1921, the Angora government, through the

TURKISH BATH. Hot air bath. The temperature varies from 116° to 165° F., inducing copious perspiration, which clears the skin and eliminates noxious matter from the blood. The air bath is followed by soaping, washing, shampooing, massage, and cooling in rooms of suitable temperature before re-dressing. The first Turkish bath was introduced into London in 1860, by a Turk, and they are now found in all large towns. See Baths.

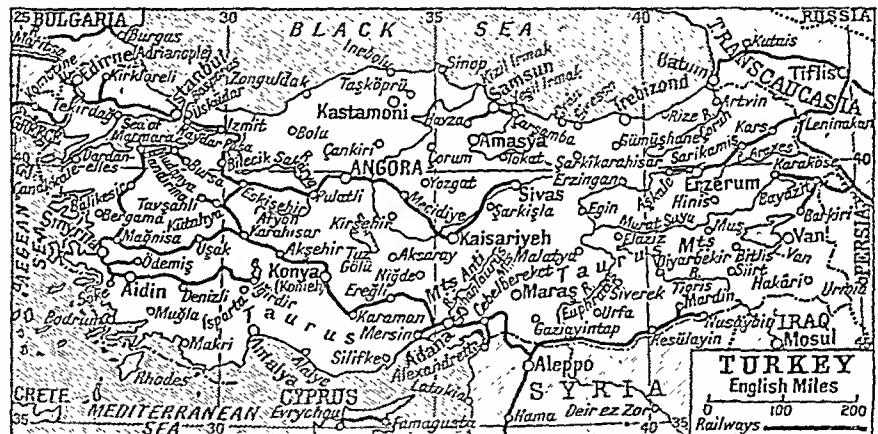
TURKISTAN (Pers. Turk-land). Term used at different times for an extensive region, variously defined, in Central Asia. Besides being applied to the northernmost prov. of Afghanistan, the name has been given to a former governor-generalship of Tsarist Russia and also to a part of Sinkiang, an outer territory of China. The population has always been a medley of Turanian and Iranian elements.



Turkey. Cock and hen of the North American bird now domesticated in Great Britain
Charles Reid



Turkey. Woman wearing the yashmak, now largely discarded



Turkey. Republic as determined by treaties of 1923 and 1925, by which territory lost in 1920 was regained

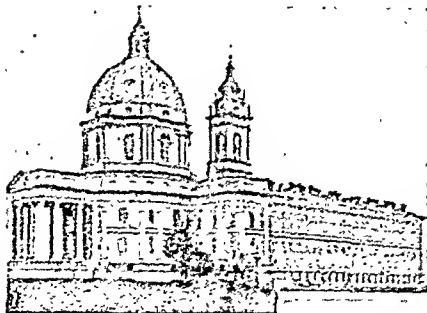
Grand National Assembly set up there by Kemal Pasha, declared all legislative and executive power to be vested in that body. The designation Ottoman Empire was abolished.

Kemal Pasha became president of the national assembly, and when in October, 1923, Turkey was declared a republic, president of the Turkish republic. On Mar. 3, 1924, the Grand National Assembly at Angora disestablished the Moslem religion in Turkey, abolished the Caliphate, and expelled the remaining members of the imperial family. The republic is governed by the president, with a council of ministers. Kemal Pasha was re-elected president, Nov. 1, 1927. See illus. pp. 741 and 790.

TURKEY BUZZARD (Cathartes aura). Vulture of the family of Cathartidae. It is found from Saskatchewan to Tierra del Fuego and the Falkland Isles. It is mainly black, with whitish bill and a tuft of bristles on front of the red eye. The head and upper neck are naked, the crimson skin smooth. There are two other species: *C. burrovianus*, from Mexico to Brazil; and *C. pernix*, of the Amazons.

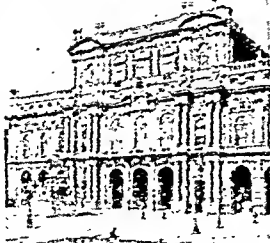
In 1919 the Soviet government established its authority in Turkistan. In 1920 Soviet republics were set up in Khiva and Bokhara, and in 1921 the old governor-generalship was formed into an autonomous soviet republic. In 1924 it was decided to re-apportion the territories of Turkistan, Bokhara, and Khiva on a national basis, and, accordingly, in 1925 the new states of Turkmenistan, Uzbekistan, and Tajikistan, as well as various autonomous regions, were created.

Until the middle of the 19th century Turkistan was an unknown land to Europeans, save for the narrative of Marco Polo. In 1863 A. Vambéry crossed the Turcoman desert, penetrating to Khiva, Bokhara, and Samarkand. In 1868 Yarkand was reached, and in

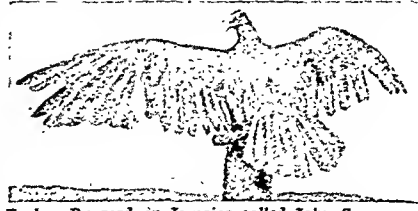


by the Oriental Rly., which passes through Sofia, Belgrade, and other centres. In Asia the lines include the Bagdad, Anatolian and Smyrna Rlys.

The Ottoman Empire derived its name from Othman (1259-1326), who took the title of sultan in 1299. At the close of the 19th century the empire—"the sick man of Europe"—had shrunk so much, and was in such a



Turin. 1. La Superga, where many kings of Sardinia are buried. 2. Carignano palace, once a royal residence, now a museum. See p. 1360



Turkey Buzzard, in Jamaica called John Crow, sunning itself with wings outspread
W. S. Berridge, F.Z.S.

1870 E Turkistan was mapped for the first time. Between 1890 and 1908 Sven Hedin made important additions to our knowledge of Gobi, E. Turkistan, and Tibet.

The greatest achievements of all were those of three British expeditions by Sir Aurel Stein in 1900-1, 1906-8, and 1913-16. The remains secured include pieces of stucco ornament, fresco panels, wood carvings and implements, metal objects, and woven fabrics. Paper, wood, and other materials bear inscriptions in Sanskrit, Chinese, and Tibetan, besides three vanished Indo-European dialects. See Kazak; Russia; Tajikistan; Uzbekistan.

TURKMENISTAN Republic of Soviet Central Asia. Mainly peopled by Turcomans, it is bounded N. by the autonomous Kazak republic, S. by Persia and Afghanistan, E. by Uzbekistan, and W. by the Caspian Sea. Agriculture is the chief occupation. The country is famed for its carpets. Ashgabad (Pol-taratsk) is the capital. The area is 189,603 sq. m. Pop. 1,030,549. See Turkistan.

TURKS ISLANDS. Group of islands in the British W. Indies, S.E. of the Bahamas. With the Caicos Islands they form a dependency of Jamaica. The area is about 165 sq. m. Pop. 5,612.

TURMERIC. Rhizome of *Curcuma longa*, a perennial reed-like plant of India. Turmeric, when powdered, has a bright yellow colour and a peppery taste. It is the most important constituent of curries, and is used in India and China for dyeing cotton and silk. A tincture is used for making turmeric paper, this being a test for alkalis and horic acid.

TURNBERRY CASTLE. Ruined castle in Ayrshire, Scotland. On the coast, 5 m. N. of Girvan, it was a stronghold of the earls of Carrick, one of whom was Robert the Bruce. Turnberry is now noted for its golf links.

TURNER, JOSEPH MALLOD WILLIAM (1775-1851). British painter. Son of a barber, he was born near Covent Garden, London, on April 23, 1775. In 1789 he entered the R.A. schools, being elected A.R.A. in 1799 and R.A. in 1802. In his first paintings the influence of Vandervelde, Claude, and Poussin is marked, but such pictures as *Ulysses Deriding Polyphemus*, 1829, *The Fighting Temeraire*, and *Modern Italy* 1838, showed his individual mastery of colour. In 1807 he began the *Liber Studiorum*, a collection of parts of five plates each, continued until 1819.

About 1840 came a remarkable change in his style. More and more he concentrated attention on the suggestive effects of colour, whether glowing and brilliant, as in the *Burial at Sea*, 1842, or the cold greys of *Snowstorm*, a seascape of 1842. He continued this tendency to leave behind him the form and composition of his earlier work, and some of his late painting almost seems to foreshadow certain impressionist painters. Among late work should be mentioned *Light and Colour*, 1844; *Rain, Steam, and Speed*, 1844; several Venetian pictures, 1844-45; and *Undine*, 1846. Turner died at Chelsea, Dec. 19, 1851. Most of his great works are in the Tate Gallery.

TURNHAM GREEN. Dist. of greater London. It adjoins Chiswick, W. of Hammer-smith, and has a station on the District Rly. In Nov., 1642, the royalist forces were checked here when on the way to London.

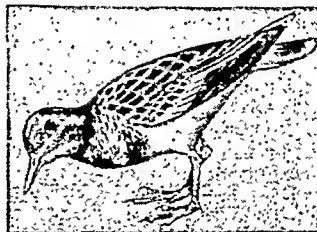
TURNIP (*Brassica campestris*) Biennial herb of the order. Cruciferae, native of Europe and N. Asia.



Turnip. Edible leaves and root-stocks of the white or garden variety
By courtesy of Sutton & Sons

A common British weed, it is erect in habit, from 1 ft. to 2 ft. high, with bristly leaves deeply cut in from the margins and yellow flowers. In the cultivated turnip the primary root and lower portion of the stem have become enlarged as a store for reserve material, and by selection and intercrossing this tendency has been increased until it has produced the juicy, white fleshed garden turnip and the larger and more solid-fleshed swede, used as a winter cattle food. As compared with the white turnip, the swede or field turnip yields a higher percentage of solids, greater nutritive value, and is less liable to disease. The yellow flesh of the root is often tunneled by the caterpillar of the turnip moth; and seedlings are ruined by the fungus *Plasmiodiophora*, which produces the malformation finger and toe. See Rape.

TURNSTONE (*Arenaria interpres*) Shore bird, belonging to the plover tribe. It is about 9 ins long, and the plumage is black and white on the head and neck, black and chestnut on the back, and white on the under parts, the breast banded with greyish black. It arrives in Great Britain about the beginning of Aug. and remains about the S. and W. coasts all through the winter, leaving in the month of May for the breeding grounds in the Arctic regions.



Turnstone, the British shore bird which breeds in the Arctic regions

TURNTABLE. Revolving platform by means of which wheeled vehicles may be turned so as to face in a different direction. Its most general application is to railway vehicles.

A locomotive turntable comprises a pair of girders carrying a railway track. The girders are suspended at their centre upon a steel cup and ball pivot resting on a pedestal in the middle of a circular pit. The girder ends are fitted with wheels which just clear a circular rail laid round the inside of the pit. An electric motor is sometimes substituted for hand power.

TURNUS. In Roman legend, king of the Rutuli, an Italian tribe, and betrothed to Lavinia, the daughter of Latinus, previous to the arrival of Aeneas. When Latinus promised his daughter to the latter, Turnus and his people took up arms, but he was killed outright in single combat with Aeneas.

TURPENTINE. Oleo-resin which exudes from various species of Coniferae and from which oil or spirit of turpentine is obtained by distillation. The term turpentine is, however, often applied to the distillate. European turpentine is obtained from *Pinus sylvestris* in Russia and Finland, from *Pinus laricio* in Austria and Corsica, and from

Pinus maritima in France. American turpentine is the product of *Pinus australis* and *Pinus taeda*. The chief use of oil of turpentine is as a solvent for making varnishes and as a diluent of paint. Canada turpentine, also known as Canada balsam (q.v.), is the produce of *Abies balsamea*.

TURPIN, RICHARD (1706-39). English highwayman. Born at Hempstead, Essex, the son of an innkeeper, he joined a gang of robbers, who, under his leadership, plundered many lonely farms. Traced, by the theft of a horse, to Whitechapel, Turpin there accidentally shot his companion, but escaped to York, where he became a horse dealer. He was hanged for horse stealing, April 7, 1739.

TURQUOISE (Fr. Turkish stone). A hydrated aluminium and copper phosphate. A precious stone, it is opaque and waxy in appearance; its colour varies from blue to green, the blue varieties being the most valuable. The finest turquoise are Persian in origin, and their importation into Europe via Turkey is commemorated in the name. Mexico also yields valuable stones. See Gem.

TURRET (Lat. *turris*, tower). Small tower, usually built for decorative purposes, on a large building.

In a battleship the turret is a circular armoured structure on the deck in which the heavy guns are mounted. By hydraulic or electrical power the turret can be moved round as required. Its under structure goes to the bottom of the ship, where are the magazines, and the gun ammunition is sent up inside the turret. See Battleship.

TURRIFF. Burgh of Aberdeenshire, Scotland. It is 11 miles from Banff, on the L.N.E.R. The trot of Turriff is the name given to a fight here, May 14, 1639, between a force of Covenanters under the Master of Forbes and a body of royalist Gordons. Pop. 2,152.

TURTLE. Name given to members of the tortoise tribe specialised for marine life. They differ from land tortoises in having the feet modified into paddles; the carapace is usually heart-shaped and somewhat flattened; and the head can be only partly retracted. In the breeding season they visit the shores to deposit their eggs in the sand. The green turtle (*Chelone mydas*) is used for turtle soup. The hawksbill turtle (*C. imbricata*) is the chief source of the best tortoiseshell. The loggerhead turtle is remarkable for the great size of the head. See Tortoise.



Turtle. Hawksbill turtle, whose carapace supplies tortoiseshell. Above, edible green species
H. S. Derridge, F.Z.S.

TURTLE DOVE (*Streptopelia turtur*). Species of small migratory pigeon which visits Great Britain in the summer. It has a reddish tinge on the head and neck, a black and white collar, rusty red wings with black spots, and a dusky tail. It is slightly under a foot in total length. It arrives in April. It lives in



J. M. W. Turner, British painter
After Charles Turner

the woods, where it usually nests in low trees and hedges, and is shy and wary. See Pigeon.

TURTON. Urb. dist. of Lancashire. With a station on the L.M.S. Rly., it is 4 m. N. of Bolton. The principal industries are cotton mills, etc. Pop. 12,157.

TUSCAN ORDER. In classic architecture, one of the orders used by the Romans. It was a modification of the Greek Doric with the mouldings bolder and fewer and the triglyph (q.v.) omitted. See Rome.

TUSCANY (Ital. Toscana). Territorial division and former grand duchy of Italy. The country is very fertile, producing wheat, maize, olives and wine. Important cities include Florence, Pisa, Lucca, Leghorn, and Siena. The area is 8,890 sq. m. Pop. 2,886,019.

Tuscany roughly corresponded to the ancient Etruria (q.v.). It was granted by Charlemagne to the Frankish Boniface, whose descendants ruled until 1114, when the last representative of the family, Matilda, bequeathed her estates to the Church. The emperor disputed the will, and the chief Tuscan cities proclaimed themselves republics. The rise of the great families was fatal to the republics of Italy; Florence became a principality under the Medici family, who in 1567 became grand dukes of Tuscany. Napoleon made Tuscany the core of the kingdom of Etruria. See Florence; Italy; Painting.

TUSCULUM. City of Latium. It lies among the Alban Hills, 15 m. S.E. of Rome. The city became a Roman ally in 497 B.C. Near the end of the Roman period Tusculum became a municipium and a favourite country residence of wealthy Roman citizens. In 1191 the ancient city was razed by the Romans. An amphitheatre, theatre, and city walls have been excavated. See Frascati.

TUSK. Name given to certain teeth of beasts, developed enormously in excess of the others in a set. These are always either incisors or canine teeth. Perhaps the most remarkable is the single tusk of the narwhal, which stands straight in front of the upper jaw to a length of ten feet. The Atlantic walrus has a pair of tusks in the upper jaw, which represent canines. In the pig tribe the lower canines of the wild boar develop into large curved tusks. The lower canines of the hippopotamus develop into enormous tusks.

TUSSAC or **TUSSOCK GRASS** (*Aira caespitosa*). Perennial grass of the order Gramineae, a native of the temperate, Arctic and mountain regions.

It has stout, smooth, leafy stems three or four feet in height, the leaves leathery. The flower cluster is plume-like, many-branched, bearing shining purplish spikelets.

TUSSAUD, MARIE (1760-1850). Swiss wax modeller. Born at Berne, daughter of Joseph Grosholtz, she was taught modelling by her uncle, J. C. Curtius, who established a wax cabinet in the Palais Royal, Paris. She married in 1794, and in 1802 transferred the waxwork museum to London, establishing it first in the Strand, then at Blackheath, and in 1833 in Baker Street, whence in 1884 it was transferred to the Marylebone Road. Madame Tussaud died in London, April 16, 1850. Burned down on March 18, 1925, Madame Tussaud's was re-opened in 1928.



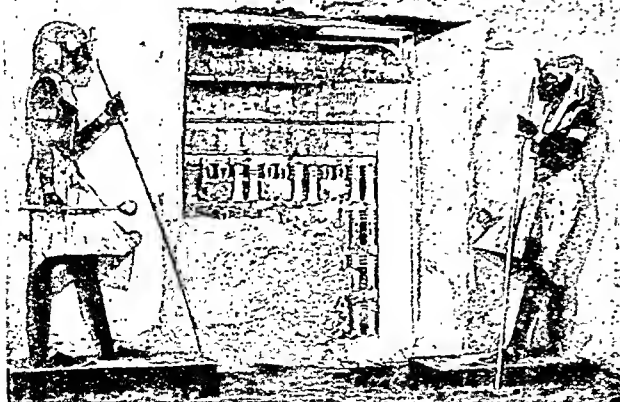
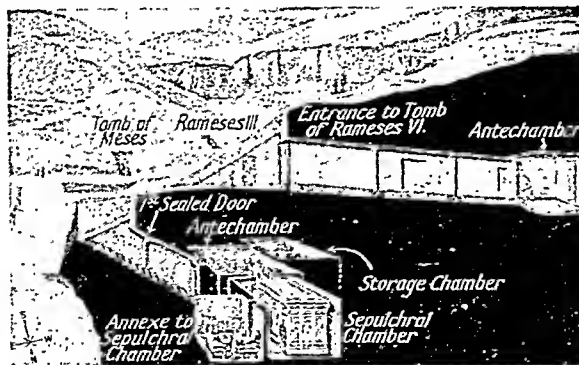
Marie Tussaud, Swiss wax modeller

TUTANKHAMEN. Egyptian king of the XVIIIth dynasty. Though little is known of his life, the reign



Tutankhamen, Egyptian king; from a life-size wooden model painted and gilded.

On Nov. 5, 1922, the entrance to Tutankhamen's tomb was discovered by Howard Carter. On Feb. 16, 1923, he entered the sepulchral chamber, bringing to light an astonishing collection of art treasures, nearly



Tutankhamen. Above, diagram showing position of the king's tomb relative to that of Ramesses VI. Below, doorway leading from the ante-chamber, revealing the antechamber of the first shrine of the sepulchral chamber

It is situated on the Volga, 90 m. N.W. of Moscow. In the 13th century Tver was capital of an independent principality, annexed by Ivan the Terrible in 1582. Pop. 106,387.

TWAIN, MARK (1835-1910). Pen-name of Samuel Langhorne Clemens, American author and humorist. Born at Florida, Missouri, Nov. 30, 1835, in 1851 he became a steamboat pilot on the Mississippi, later taking his pen-name from the call of the leadman when reporting the soundings. His first story, *The Celebrated Jumping Frog of Calaveras County*, appeared in *The Californian*, 1867. His first book, *Innocents Abroad*, 1869, the result of his first visit to Europe, established his reputation as a humorist. Then came *The Adventures of Tom Sawyer*, 1876; *Life on the Mississippi*, 1883, full of vivid narrative; and *Huckleberry Finn*, 1885. Meanwhile, a second trip to Europe had produced *A Tramp Abroad*, 1880. Of his other works the most notable are *A Connecticut Yankee at the Court of King Arthur*, 1889, and *Personal Recollections of Joan of Arc*, 1896. Mark Twain died at Redding, Connecticut, April 21, 1910.



Mark Twain, American writer. H. W. Barnett

TWEED. River of Scotland and England. It rises in Peeblesshire, and flows across that county, Selkirkshire, and Roxburghshire. Beyond Kelso it forms the boundary between Berwickshire and Northumberland. Its length is 97 m. Among its tributaries are the Ettrick, Gala, Eden Water, Till, and Teviot. The Tweed is noted for its salmon and trout.

Tweed is the name of a soft, flexible twilled woollen fabric, which was first made of the famous Cheviot wool in the district along the river. Harris tweed is made in the Hebrides.

TWEED, JOHN. British sculptor. He studied under Rodin, and soon made a reputation. One of his finest pieces of work is the national memorial to Earl Kitchener in the Horse Guards Parade, London. He was also responsible for the equestrian statue of Sir G. White in Portland Place, London, the statue of Sir John Moore at Shorncliffe, and several war memorials. His busts include J. Chamberlain, Queen Victoria, and Cecil Rhodes.

TWEEDMOUTH. Seaport of Northumberland, part of Berwick-upon-Tweed. It has a little shipping; other industries are fishing and engineering. See Berwick-upon-Tweed.

TWEEDMOUTH, EDWARD MARJORIBANKS. 2ND BARON (1849-1909). British politician. Born July 5, 1849, he was the son of Dudley Coutts Marjoribanks, M.P. (1820-94), the 1st baron, whose title was conferred in 1881. He entered the House of Commons in 1880 as Liberal M.P. for Berwick, and remained there until he succeeded to the peerage in 1894. Having been chief liberal whip, he was chosen first lord of the admiralty in 1905. In that capacity, a letter he wrote to the German Emperor in March, 1908, aroused some criticism and he was transferred in 1908 to the office of lord president. Tweedmouth died Sept. 15, 1909, his son, Dudley Churchill (b. 1874), becoming the 3rd baron.

TWELFTH DAY. Day of the feast of the Epiphany, also called Old Christmas Day. The night of Jan. 6, Twelfth Night, was formerly a time of merry-making.

In the Middle Ages men representing the Three Kings or Magi used to take part in a ceremony in church on this day. Under the Stuart kings masques were performed on Twelfth Night. Shakespeare's comedy, *Twelfth Night*, or *What You Will*, was perhaps designed for Twelfth Night performances at court, 1600. See Epiphany.

all in splendid preservation. See Egypt; Tell-el-Amarna.

TUTBURY. Town of Staffordshire. It stands on the Dove, 4 m. from Burton-upon-Trent, on the L.M.S. Rly. St. Mary's church contains Norman work. The ruined castle was a prison of Mary, Queen of Scots. Pop. 2,062.

TUXFORD. Town of Nottinghamshire. It is situated 12 m. from Newark, has a station on the L.N.E. Rly., and is a market for the cattle of the dist. Pop. 1,191.

TVER. City of the Union of Socialist Soviet Republics, capital of the prov. of the same name.

TWELVE TABLES, THE. Oldest code of Roman law, according to tradition promulgated in 451 and 450 B.C. by a commission of ten Decemviri. The code, of which fragments are extant, was written in archaic Latin on copper tablets set up in the forum of Rome. It was in the main a summary recapitulation, under 12 heads, of the old criminal and civil law, but contained no constitutional enactments. The tables, which were venerated by the later Romans, are believed by some scholars to be a private compilation, perhaps of the 3rd century B.C. See Roman Law.

TWERTON-ON-AVON. Suburb of Bath, Somersetshire. It was one of the first places in England famous for its woollen and weaving industries, and is still notable for its cloth mills. Its ancient church, restored, has a Norman doorway. Fielding was living at Twerton when he wrote part of *Tom Jones*.

TWICKENHAM. Borough of Middlesex. It is 11½ m. from Waterloo on the Southern Rly, between Isleworth and Teddington. Alexander Pope (q.v.), who was buried here, is commemorated by a modern house on the site of his villa. Among other famous residents were Horace Walpole, Mrs. Fitzherbert, Lady Mary Wortley Montagu, and several members of the Orleans family. Twickenham Eyot, opposite York House, is popularly known as Eel Pie Island. The football ground of the Rugby Union, where international matches are played, is at Twickenham. Pop. 34,790.

TWILIGHT SLEEP. Name given to a method of relieving or preventing the pains of childbirth by the administration of scopolamine-morphine. It demands continuous skilled medical observation.

TWO-STEP. American dance. A modified polka, adapted to American rag-time music, it was introduced into Europe at the end of the 19th century. There are many variants, such as the Boston two-step, the Military two-step; it is also included in the Maxixe.

TWO THOUSAND GUINEAS. English horse race. It was inaugurated in 1809, and is run at Newmarket on the Wed. of the first spring meeting. It is run over the Rowley mile by three-year-old colts and fillies, and is one of the five so-called classic races. See Horse Racing.

TWYFORD. Common place name in England. One Twyford (pop. 2,214) is 3 m. S. of Winchester with a station, Shawford and Twyford, on the Southern Rly. Another (pop. 1,269) is in Berkshire, 31 m. from London. It is the junction on the G.W. Rly. for Henley. Twyford Abbey is a parish of Middlesex, on the Brent, between Alperton and Hanger Hill. It is 11½ m. from London, with a station (Twyford Abbey and Park Royal) on the Metropolitan Rly.

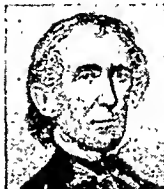
TYBURN. Name of a small stream now running underground from Hampstead through Regent's and Green Parks to the Thames at Westminster. It gave its name to the Middlesex galleys, which stood near the junction of the Edgware and Bayswater Roads from the 12th century until 1783, when it was transferred to Newgate.

TYLDESLEY, JOHN THOMAS (1873-1930). English cricketer. Born near Manchester, Nov. 22, 1873, he received his early training in Lancashire club cricket, and first played for Lancashire in 1895. In 1897 he made over 1,000 runs, and achieved that performance for London in successive seasons. He scored over 1,000 runs four times. His highest innings in Nov. 1904, was out against Kent at Old Trafford here when he was out against Nottinghamshire in 1904,

and 221 in 1901. In all he scored 37,803 runs in first-class matches, making 86 separate centuries. He took part in test match cricket, appearing for England in 16 games in this country, and went to Australia in 1901-02 and also two years later. His total runs in test matches was 1,452. He died suddenly in Manchester, Nov. 27, 1930. His elder brother, Ernest, was also a noted cricketer. See Cricket.

TYLDESLEY - WITH - SHAKERLEY. Urb. dist. of Lancashire. It is 5 m. S.W. of Bolton, on the L.M.S. Rly. The principal industry is the cotton trade, and there are collieries. Pop. 15,651.

TYLER, JOHN (1790-1862). American statesman. Born at Greenway, Charles City county, Virginia, March 29, 1790, he was elected vice-president of the U.S.A. in 1840. He succeeded Harrison as president in 1841. One of the leading Whigs, his veto of the tariff bill of 1842 led to the resignation of most of his cabinet and a public repudiation of him by his party. During his term Texas was annexed, and the Ashburton-Webster treaty with Great Britain concluded. He died at Richmond, Virginia, Jan. 18, 1862.



John Tyler,
American statesman

TYLER, WAT (d. 1381). English rebel. He appears to have been a tiler at Dartford, Kent, and came into notice when the poll tax of 1381 was being collected. The story goes that a tax-collector insulted his daughter and was killed by him. This brought the discontent to a head, and under Wat Tyler and Jack Straw, men from Kent and Essex marched to London. They met Richard II at Smithfield and there, June 15, 1381, Tyler was killed by the lord mayor.

TYLOR, SIR EDWARD BURNETT (1832-1917). British anthropologist. He was born at Camborwell, Oct. 2, 1832. A Mexican tour with Henry Christy, 1856, resulted in *Anahuac: or, Mexico and the Mexicans, 1861*, followed by his *Early History of Mankind, 1865*. His *Primitive Culture, 1871*, made him the leading anthropologist of the age. He became reader in anthropology at Oxford, 1884; and first professor, 1895. He was made F.R.S. in 1871, knighted in 1912, and he died at Wellington, Somerset, Jan. 2, 1917.

TYNAN, KATHARINE (b. 1861). Irish poet and novelist. She published her first book of verses, *Louise de la Vallière*, in 1885. Other volumes of verse include *Ballads and Lyrics, 1890*; *The Wind in the Trees, 1898*; *Collected Poems, 1901*; and *Flower of Youth, 1915*. In 1893 she married H. A. Hinkson (1865-1919), barrister and author. Among her many novels are *The Handsome Brandons, 1898*; *The Dear Irish Girl, 1899*; *A Midsummer Rose, 1913*; *John-a-Dreams, 1916*; *The Second Wife, 1920*; *Sally Victrix, 1921*; *Wives, 1924*; *The Infatuation of Peter, 1926*; and *A Fine Gentleman, 1929*. She published reminiscences of Irish and London literary life.

TYNDALE, WILLIAM (c. 1492-1536). English translator of the Bible. Born in Gloucestershire, he was ordained priest in 1521. Removing to London, 1523, he preached at the church of St. Dunstan's-in-the-West, and in the house of Humphrey Monmouth, a rich draper, began translating the Scriptures. Forced to leave England, he visited Luther at Wittenberg, began printing the N.T. at Cologne, 1525, and continued the work at Worms, whence several copies reached England. At the instigation of Henry VIII, Tyndale was strangled and burnt at Vil-

vorde, near Brussels, Oct. 6, 1536. There is a monument to him at Nibley, Glos. See Bible.

TYNDALL, JOHN (1820-93). British physicist. Born at Leighlin Bridge, co. Carlow, Ireland, August 2, 1820, he became an assistant in the ordnance survey of Ireland, 1839. Early showing a strong interest in mathematics and science, Tyndall went to the university of Marburg in 1848.

A lecture before the Royal Institution, 1853, on *The Influence of Material Aggregation upon the Manifestations of Force*, brought him into the front rank of physicists. In 1867 he succeeded Faraday as superintendent of the Institution. In 1866 he became scientific adviser to Trinity House, and carried out researches on sound. He retired from the Institution, 1887 and died Dec. 4, 1893.



John Tyndall,
British physicist

TYNDAREUS. In Greek mythology, king of Sparta. His wife Leda became by Zeus the mother of Castor and Pollux, and, according to some legends, of Clytemnestra and Helen.

Tyndareus was the name of a British steamer owned by the Ocean Steamship Co. While conveying a battalion of the Middlesex Regt. she struck a mine off Cape Agulhas, South Africa, Feb. 6, 1917. No lives were lost.

TYNE. River of England. The N. Tyne rises in the Cheviots and flows S.E. and S for 32 m.; the S. Tyne rises in the Pennines and flows N. and then E. for 33 m. to join the N. Tyne near Hexham, whence the united stream flows 30 m. E. to the North Sea. The lower reach, bordered by the Tyne ports, is a busy industrial region. See Newcastle-upon-Tyne.

TYNEMOUTH. County borough and seaport of Northumberland. At the mouth of the Tyne, 8½ m. from Newcastle, it has stations on the L.N.E. Rly. There are ruins of a Benedictine priory. The castle was the scene of fighting in the Civil War. The port has a considerable shipping trade. Pop. 63,770.

TYNWALD. Name for the old parliament of the Isle of Man. The Tynwald court to-day is composed of the two branches of the legislature when they meet together for executive business, which includes the control of the finances. Tynwald Hill is the hill where the laws of the island are promulgated after receiving the royal assent. In 1928 the king presented it to the island. See Keys, House of; Man, Isle of; also illus. p. 1365.

TYPE. In printing, piece of metal or wood containing a raised letter or figure, from which an impression is to be made. Type for books and newspapers is of metal, 1½ inch high, and rectangular in section, the letter on the type face being in a form reversed from that of its appearance in print. Movable type is cast in founts of varying sizes and styles, the chief of which in ordinary use are as follows, each having a distinctive name or being distinguished according to the American point system, a point being 0.0138 inch, 72 points to the inch. See Printing.

This line is set in 5 point (pearl)

This line is set in 6 point (nonpareil)

This line is set in 7 point (minion)

This line is set in 8 point (brevier)

This line is set in 9 point (bourgeois)

This line is set in 10 point (long primer)

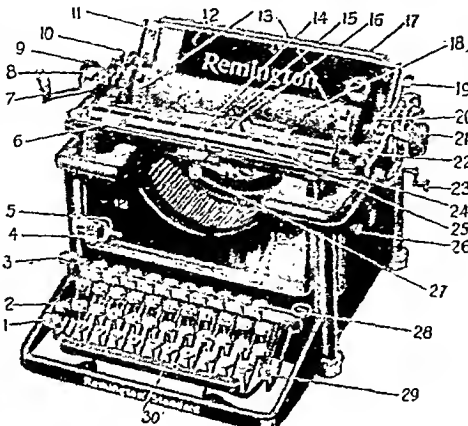
This line is set in 11 point (small pica)

This line is set in 12 point (pica)

Types used for ordinary text are divided into Old Style and New Style Roman. with CAPITALS, SMALL CAPITALS, lower case, italic, figures, points (, ; : .), accented or other marks, signs, etc. For large poster work wooden letters are used. See Black Letter; Compositor; Linotype; Monotype.

TYPE FOUNDRY. Type is cast from type metal by means of a mould to which is fitted a copper matrix made by a stamping machine from a steel punch or die. The metal used is usually a mixture of lead and antimony, sometimes with the addition of tin, nickel, copper, or bismuth. Early printers made their own punches and cast their own type. Type founding as a distinct industry began at the close of the 16th century, but did not approach uniformity and general excellence in England until the time of Caslon in the first half of the 18th century. Type-casting machinery has been much improved, and British type foundries in particular have made remarkable progress. See Printing.

TYPEWRITER. Machine for writing in characters resembling print. The first machine to be put to practical use was invented by Charles Thurber in 1843. It was followed in 1856 by that of A. E. Bech for printing embossed letters for the blind, and, about the same time, by an invention of Sir Charles Wheatstone. Then, after several years of experiment, Charles Latham Sholes produced a machine, which was embodied in the American Remington put on the market in 1874.



1 and 29, Shift keys. 2, Shift lock. 3, Back spacer key. 4, Ribbon indicator. 5, Stencil lever. 6 and 24, Marginal stops. 7, Line space and carriage return lever. 8 and 22, Carriage release keys. 9 and 21, Thumb wheels. 10, Line space gauge. 11, Paper side guide. 12, Paper table. 13, Paper fingers. 14, Pointer. 15, Line gauge. 16, Type guide. 17, Tabulator stop scale. 18, Cylinder. 19, Feed roll release lever. 20, Paper finger release arm. 23, Ribbon spool crank. 25, Marginal stop bar. 26, Ribbon spool door knob. 28, Tabulator key. 30, Space bar.

Typewriter. Diagram showing principal parts of Remington visible machine, No. 12

By courtesy of the Remington Typewriter Co., Ltd.

tamination of the water supply is undoubtedly the commonest cause; but infection may also be conveyed by milk or food, and some outbreaks have been traced to infected shellfish.

The period of incubation ranges from 8 to 14 days or more. Early symptoms are headache, shivering attacks, diarrhoea, nose bleeding, and abdominal pain. The temperature during the first week rises steadily. Towards the end of the week there is an eruption of rose-coloured spots on the abdomen. During the second week the fever remains high and the

symptoms become aggravated. Death may occur at this stage. In the third week in a hopeful case the temperature gradually begins to decline, accompanied by a general improvement.

TYPHOON OR **TYPHOEUS** In Greek mythology, a monstrous, fire-breathing giant with 100 heads. He was the son of Gé, the Earth, and was the father of the three-headed dog Cerberus, the Chimæra, and other monsters. Having revolted against Zeus, he was slain with a thunderbolt, buried under Mt. Etna, and seems to have personified earthquakes and volcanoes.

Violent revolving cyclone experienced mainly in August, Sept., and Oct. in the Philippines and along the margins of Eastern Asia. Typhoons possess all the characteristics of European cyclones, but in an intensified form. Typhoons appear to originate over the S. China sea, the necessary conditions being calm and intense heat.

In advancing they produce enormous and, in many cases, destructive waves. See Cyclone, Tornado.

TYPHUS FEVER (Gr. typhos, smoke, stupor). Acute infectious disease, also known as hospital fever, spotted fever, gaol fever, and camp fever.

The organism responsible for the disease has not been isolated, but infection is conveyed by lice, and typhus is closely associated with filth and overcrowding.

The incubation period is about 12 days. The onset is usually abrupt, with chills or shivering fever, headache, and pains in the back and legs. The temperature rises rapidly, the tongue is white, the face flushed, and vomiting severe. An eruption appears on the skin from the third to the fifth day. In severe cases coma supervenes, the action of the heart becomes feeble, and death occurs from exhaustion. Cold sponging or cold packs are of value when the temperature is high. Mild aperients are necessary.

TÝR (Old Norse týr, god). Scandinavian name of the old Teutonic god of war, called in Anglo-Saxon Tiw, and in Old High German Ziu. His name is cognate with Lat. deus, Sanskrit devas, god, and Greek Zeus. The son of Odin, Týr was identified with the Roman Mars, whence the third day of the week. Martis dies, was called Tiwes daeg or Tuesday.

TYRANNOSAURUS OR **ALLOSAURUS**. Genus of carnivorous dinosaurs whose remains are found in the Cretaceous and Jurassic formations of North America. Specimens range in length from 30 to 40 ft., and are up to 20 ft. high. The fore limbs, relatively small, are fitted for grasping, and have five toes. The large and powerful hind limbs bore three toes with sharp claws. The skull was about 4 ft. long, and the huge jaws were furnished with sabre teeth.

TYRANT (Gr. tyrannos). In Greek history, a name applied to a despot who ruled without constitutional sanction. In the 7th and 6th centuries B.C. oligarchies of nobles, which had replaced the old kings, ruled most of the city states of the Greek world, and were overthrown by able leaders of the unprivileged classes, wealthy or poor. These leaders were often vigorous rulers, who increased the power of the state, erected splendid buildings, and encouraged literature and the arts. See Dionysius; Hiero I.

TYRCONNEL, **RICHARD TALBOT**, Earl of (1630-91). Irish soldier. The son of Sir William Talbot, an Irish politician, he left Ireland on the defeat of the royalist cause to serve the royal family. In 1660 he returned to England and was attached to James, duke of York, serving with the fleet. When James became king, Talbot was made commander-in-chief in Ireland, and was created earl of Tyrconnel. As lord deputy after 1687 he worked to secure Ireland for James. Tyrconnel died at Limerick, Aug. 12, 1691.



Earl of Tyrconnel, Irish soldier
After S. Harding

TYRE (anc. Tyros; mod. Sur, rock). City of ancient Phoenicia. The city itself was built partly on the mainland, partly on two small islands. Its greatness dates from the 10th century B.C.

In ancient times it was frequently besieged, finally coming under Roman rule. Its extensive trade and manufacture of metal and glass wares, of woven stuffs, and especially of purple dyes, made it extremely prosperous. In 638 it fell into the hands of the Arabs. It was taken by the crusaders, but in 1291 was recovered and occupied by the Mahomedans.

The modern town, about 50 m. S of Beirut, has some 5,000 inhabitants; it is the seat of a Greek archbishopric. The harbour is now choked up with sand, and trade has been diverted to Beirut. See Phoenicia.

Tyrol. Alternative name for the district better known as Tirol (q.v.).

TYRONE. County of Northern Ireland. It has an area of 1,218 sq. m. It is mainly hilly, herein being the Sperrin Mts. and other ranges, but in the east is a level tract. The rivers include the Derg, Blackwater, and Foyle. On the E. boundary is Lough Neagh. Omagh is the co. town; other places are Strabane, Dungannon, Newtown Stewart, Clogher and Dromore. Oats, potatoes, and flax are grown. The G.N. of Ireland, Rly. serves the county. Pop. 132,792. See map, p. 1366.

The Irish title of earl of Tyrone was conferred on Conn O'Neill in 1542. His grandson,



2nd Earl of Tyrone, Irish patriot

Hugh, the 2nd earl, was the leader of the Irish in their rising against Elizabeth and James I. Having been attainted in 1614, he died in Spain, July 20, 1617. In 1673 Richard Power was made earl of Tyrone, but in 1704 the title became extinct. One of his descendants



Tynwald Hill (left) and the church of S. John. See p. 1364

This machine had the type bars pivoted about a horizontal ring, the arms being connected by vertical rods to the levers leading to the keyboard. A rubber cylinder moved the paper, and the impression of the type was supplied by an inked ribbon which unwound from a spool. The pressing down and release of each key in turn moved the paper-carrying cylinder along one space by means of a spring.

The Remington machine was followed by others embodying new ideas and improvements. The keyboard has become standardised, and various standard improvements have been introduced. Further developments are specialised machines for typing into books, tabulating, adding, subtracting, etc. By means of carbon papers duplicates can simultaneously be made of the original typescript, and by the use of the stencil sheet of waxed paper a large number of impressions may be obtained by a copying machine.

TYPHOID OR **ENTERIC FEVER**. Infectious disease caused by the bacillus typhosus. Con-

married Sir Marcus Beresford, Bart., who, in 1746, was made earl of Tyrone. His son was made a peer of the U.K. in 1786, and in 1789 marquess of Waterford (q.v.).

TYRRELL GEORGE (1861-1909). British theologian. Born in Dublin, Feb. 6, 1861, he was educated at Rathmines, and in 1879 joined the Roman Catholic communion. After being admitted to the Society of Jesus and attracting notice as a fervent Thomist, he acted for a time as schoolmaster at Malta. He was ordained priest in 1891, and for two years engaged in mission work, which he left for literary work. Then began a period of controversy, aroused by a paper on hell which Tyrrell contributed to *The Weekly Register*, Dec. 16, 1899. Tyrrell left the Society of Jesus in 1906, and died at Storrington, Sussex, July 15, 1909.



George Tyrrell,
British theologian
Edward Arnold

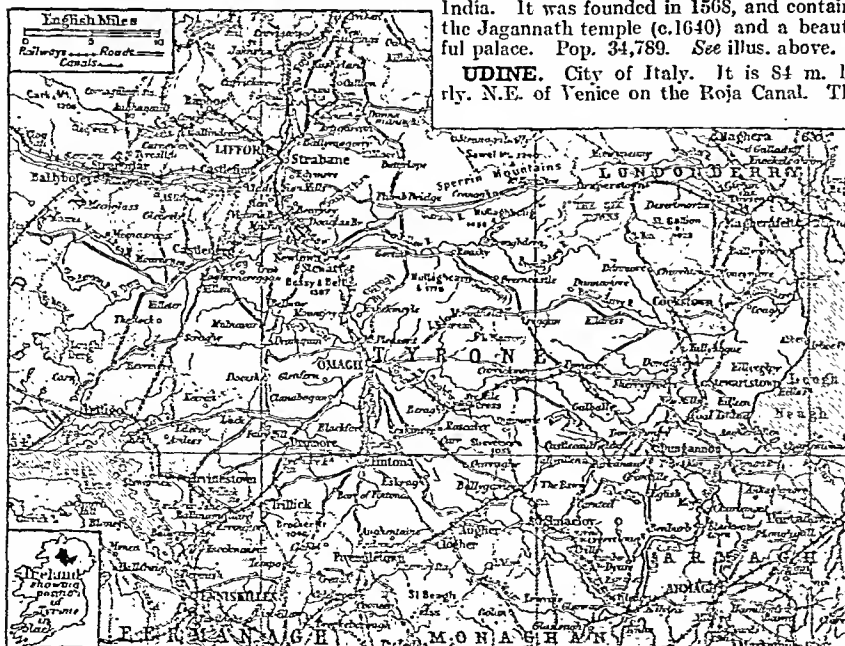
contributed to *The Weekly Register*, Dec. 16, 1899. Tyrrell left the Society of Jesus in 1906, and died at Storrington, Sussex, July 15, 1909.

TYRRELL, WILLIAM GEORGE, 1ST BARON (b. 1866). British diplomatist. Born Aug. 17, 1866, in 1889 he entered the Foreign Office, where he remained, except for a short period in Rome, until 1928. From 1907 to 1915 he was a senior clerk and private secretary to Sir Edward Grey. He then became assistant under-secretary and was under-secretary from 1925 to 1928, when he went to Paris as ambassador. In 1929 he was made a peer as Baron Tyrrell.

TYRWHITT, SIR REGINALD YORKE (b. 1870). British sailor. Born May 10, 1870, he entered the navy in 1886. He commanded the destroyer flotillas in the battle of Heligoland, Aug. 28, 1914, led the destroyer flotillas at the battle of the Dogger Bank, Jan. 24, 1915, for his services in which he was awarded the D.S.O. and C.B., and was in command of the *Arethusa* when she was wrecked in Feb., 1916. Promoted rear-admiral, Dec., 1919, he was made a knight, 1917, a baronet, 1919, and an admiral, 1929.



Sir R. Y. Tyrwhitt,
British sailor



Tyrone. Map of the Ulster county, since 1921 under the parliament of Northern Ireland. See p. 1365

U. Twenty-first letter and fifth vowel of the English and Latin alphabets, if it be regarded as distinct from V in the latter. It has various sounds, whether used alone or in combination with other vowels. It equals a long oo in truth, short oo in bull, pull, short u in nut, iu (yu) in duke, funeral, short i in busy, business, and short e in bury. See Alphabet: Phonetics.

UAKARI. Genus Uacaria of small American monkeys, distinguished by their short tails. There are three species, whose names—the bald uakari, the red-faced uakari, and the black-headed uakari—indicate their distinctive points. The two former have brilliant scarlet faces. The third species has yellowish back and sides, reddish-brown loins, and black head and feet. The nakaris occur in companies in the tops of the trees in forests, living on fruit and flowers.

UBANGI. River of Africa. It rises as the Welle near the Sudan frontier of the Belgian Congo, and flows W as far as Fort de Possel and thence almost due S. to its junction with the river Congo. The Ubangi and its N tributary the Bomu (Abomu) form part of the boundary of the Belgian Congo.

U-BOAT. Name given to the German submarine (unterseeboot) in the Great War. These vessels had the prefix U, followed by a number, e.g. U 28, or were named U A, U B, U C, followed by a number. They numbered about 810. It is definitely established that 210 were lost in action or foundered. The largest was the U 142 type. These were 320 ft. in length, with a surface displacement of 2,160 tons. They carried a crew of 53, and their radius was 20,000 m. at 6 knots. See Submarine; Tirpitz, A. F.

UDAPUR. Native state and city of Rajputana, India. The state, also known as Mewar, lies S. of Ajmer-Merwara. The N. contains the wildest portion of the Aravalli Hills. Maize and tobacco are grown. Its area is 12,691 sq. m. Pop. 1,380,000. The city is one of the most picturesque in India. It was founded in 1568, and contains the Jagannath temple (c.1640) and a beautiful palace. Pop. 34,789. See illus. above.

UDINE. City of Italy. It is 54 m. by rly. N.E. of Venice on the Roja Canal. The

Romanesque cathedral, a fine archiepiscopal palace, the Palazzo Bartolini, with a museum of antiquities, and a large library are the chief buildings of interest. Udine figured prominently in the Great War, being until Oct., 1917, an important base of the Italian army on the Isonzo front. Pop. 67,000.

UFA. Town of Russia, capital of the Bashkir autonomous republic. It is near the



Udaipur, India. The Jagnewas palace, built on an island. See below

confluence of the Ufa and Bictlaia, 200 m. N. of Orenburg and on the Trans-Siberian Rly. Pop. 97,444. See Bashkir.

UFFIZI GALLERY. Art gallery in Florence. Designed originally by Giorgio Vasari as government offices (uffizi) for the dukes of Tuscany, it became the home of the art treasures of the Medici family. In 1860 it passed into the hands of the Italian government. Among the world-famous masterpieces in the gallery are Botticelli's *Veus Rising from the Sea* and *Adoration of the Magi*, Sodoma's *S. Sebastian*, Filippino Lippi's *Adoration of the Magi*, Michelangelo's *Holy Family*, Fra Angelico's *Coronation of the Virgin*, Sebastiano del Piombo's *Fornarina*, and Titian's *Flora*. See Vasari, G.

UGANDA. British protectorate in Central Africa. It lies between the Anglo-Egyptian Sudan and Kenya Colony, and between Abyssinia and the Belgian Congo. Of its area of 94,200 sq. m., about 15,000 sq. m. are water comprising parts of Lakes Victoria, Edward and Albert, and the whole of Lakes George, Kioga, and Salisbury. The population is something over 3,000,000.

The Uganda Rly. runs from Mombasa on the coast to ports on Lake Victoria. This and other railways, with steamers on Lakes Victoria, Kioga, and Albert, and numerous roads, afford means of communication. The British headquarters are at Entebbe, which with Jinja and Port Bell are the chief ports on Lake Victoria. Kampala is the chief native capital and commercial centre. By the Anglo-German agreement of 1890 Uganda became British.

Various parts of the country are still ruled by native kings, the chief of these being Buganda. The whole, however, is controlled by the British governor, who is assisted by an executive and a legislative council. The standard coin is the shilling, which has replaced the rupee. It is divided into 100 cents. There is a common customs tariff for Uganda, Kenya, and Tanganyika, which it is proposed to unite more closely. Uganda is a noted centre for big game hunting. Elephants, buffalo, lions, leopards, and wild pigs haunt the tall elephant grass of the savanna; hippopotamus and water fowl abound. See Africa.

UHLAN (Turk. oghlan, a youth). Word used by the Tartars for a certain type of soldier. It was adopted by the Poles for mounted men armed with the lance. Later the Prussians gave the name to regiments of cavalry, these being armed with lance and used chiefly for scouting purposes.

UHLAND, JOHANN LUDWIG (1787-1862). German poet. He was born April 26, 1787, at Tübingen, and studied law at the university

there. He published his Poems in 1815, and added many fresh pieces to the new editions which were constantly demanded. His ballad *The Luck of Edenhall* is familiar in Longfellow's translation. He was professor of literature at Tübingen, 1829-33, and in 1848 was a prominent member of the German National Assembly. Uhland died at Tübingen, Nov. 13, 1862.

UIST. Two islands, north and south, of the Outer Hebrides, in the co. of Inverness. North Uist is about 18 m. long and in average width about 6½ m. At the head of Loch Maddy, a good natural harbour, stands Lochmaddy, the principal village. Pop. 3,223.

South Uist lies 7 m. S of North Uist, Benbecula lying between the two. Its greatest length is 22 m. Pop. 4,844. Pron Wist.

UITENHAGE. Town of Cape Province, South Africa. It is 21 m. by rly N.W of Port Elizabeth, lies in the valley of the Zwartkops river, and is an important agricultural centre. On irrigated land there are fruit and flower nurseries. Pop. 8,121 (Europeans).

UITLANDER (Dutch, foreigner). Term applied in the Transvaal to white men of other than Boer nationality. On the formation of the South African Republic, the burghers refused civil rights to all aliens, though much of their revenue was obtained from the taxation of Uitlanders. The attempts of the latter to redress their grievances gave rise to the Jameson raid and culminated in the South African War (q.v.). The word is sometimes translated into English as Outlander.

UJJI. Town of Tanganyika Territory. Formerly the terminus of the great caravan route to Lake Tanganyika, the town is on the E. side of the lake, 4 m. from Kigoma. It was an important slave centre. Occupied by the Germans in 1900, it was captured by the Belgians in 1916. In 1921 it was handed over to Great Britain. Pop. 25,000.

UKRAINE. Soviet republic of S.W. Russia, and a member of the union of Soviet Republics. On disputed authority it has been asserted that a Ukraine state was established in the 9th century with a capital at Kiev. This state passed under Polish, and later Austrian and Russian suzerainty, and disappeared as a sovereign state in the 17th century.

In Nov., 1917, the Ukrainian people's republic was established as a member of the Russian federal republic; and in 1919 the Russian Ukraine joined the Austrian Ukraine (E. Galicia). In 1920 a Soviet government was set up, and by the treaty of Riga, March 19, 1921, Poland and Russia agreed to recognize the independence of the Ukraine. In 1923 it was one of the states that formed the Union of Soviet Socialist republics.

The Ukraine covers an area of 166,368 sq. m. and its pop. is about 29,000,000. Kharkov is the capital. Other places of importance include Kiev, Odessa, Dnepropetrovsk, Stalingrad, and Nikolaev. Quantities of coal and iron ore are produced and steel and iron goods are manufactured. The produce comes down the Dnieper and the Dniester for shipment from Odessa and other ports on the Black Sea.

A branch of the Russian race, numbering about 35,000,000, the Ukrainians mainly inhabit the Ukraine proper, while about 3,000,000, known as Ruthenians, Russianians, or Red Russians, live in Poland (E. Galicia), Czechoslovakia, and Rumania (Bukovina). See Russia; Ruthenes.

ULCER. Open sore other than a wound. An ulcer may be due to a simple localised infection of the skin or mucous membrane, or to constitutional disease such as syphilis or tuberculosis, or may arise in the course of malignant disease, or may be due to

sluggishness of the circulation in the veins. Chronic ulcers require local treatment, and resting the limb affected is important.



Ullswater. The southern reach of the lake from Place Fell, looking across to Glenridding Frith

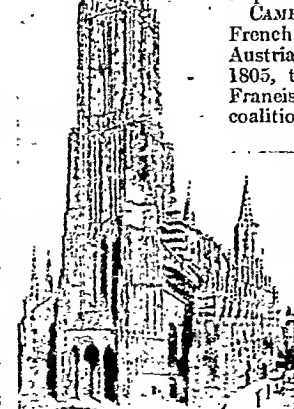
ULLSWATER. Lake in Cumberland and Westmorland. It has a total length of 7½ m. and an average width of ½ m. The lake is divided into three reaches, of which the southern is set in some of the most beautiful of the Lake scenery. See Lake District.

ULLSWATER, JAMES WILLIAM LOWTHER, 1st Viscount (b. 1855) British politician. Born April 1, 1855, a grandson of the second earl of Lonsdale, he was educated at Eton and Trinity College, Cambridge. In 1883 he became M.P. for Rutland, and after a short absence was returned as a Conservative member for a Cumberland division in 1886. He was under-secretary for foreign affairs, 1891-92, and in 1895 was made chairman of committees and deputy speaker. In 1905 he succeeded W. C. Gully as Speaker, and he held the office until 1921, when he retired and was made a viscount. He presided over the parliamentary conference that drew up the scheme of electoral reform introduced in 1918.



Viscount Ullswater, British politician Russell

ULM. City of Württemberg. It stands on the Danube, 46 m. S.E. of Stuttgart, and is joined with New Ulm by bridges across the Danube, which here becomes navigable. The cathedral, founded in 1377, is famous for its size and high tower. The town hall dates from the 16th century. Brass founding, bleaching, brewing, and the manufacture of leather, hats, and tobacco are the chief industries. Ulm was a free imperial city in the 14th and 15th centuries, was annexed to Bavaria in 1803, and to Württemberg in 1819. Pop. 59,357.



Ulm, Germany. West front and tower of the Gothic cathedral

CAMPAIGN OF ULM. French success over Austria. In August, 1805, the adhesion of Francis I to the third coalition involved Napoleon in war with Austria. The Austrian forces under General Mack had taken up a position between Ulm and Memmingen. Napoleon passed his armies, aggregating 190,000 men, swiftly through Han-

over and the smaller German states, and reached the Danube in rear of Mack. Napoleon succeeded in hemming in Mack with 60,000 men at Ulm, the investment being completed on Oct. 14, and Mack was forced to capitulate three days later.

ULSTER. Most northerly of the four provs of Ireland. It consists of the cos. of Donegal, Londonderry, Antrim, Tyrone, Cavan, Fermanagh, Monaghan, Armagh, and Down. Six of the Ulster counties, all save Donegal, Cavan and Monaghan, form the district known since 1920 as Northern Ireland. The total area is 8,329 sq. m. Pop. 1,556,652.

When in 1921 two states were set up in Ireland, Ulster was divided between the two, and consequently ceased to have any but an historic interest. (See Belfast; Ireland; Northern Ireland.)

The Ulster king of arms is the registrar of the order of S. Patrick and the chief heraldic official in Ireland.



Ulster Rifles: Badge of the Regiment

ULSTER RIFLES, ROYAL. British regt. known until Jan., 1921, as the Royal Irish Rifles. Formerly the 83rd and 86th Foot, this regiment dates from 1793, and in the following year shared in the war in San Domingo. It was present at the capture of Cairo, 1801; in 1802-4 it saw service in the Maratha War in India, and in 1806 assisted at the capture of the Cape of Good Hope. In the Peninsular War the regt. served in Picton's "Fighting Division," and in the Indian Mutiny the 2nd battalion distinguished itself. In the Great War nine battalions of the regt. were in the Ulster division. The depot is at Belfast.

ULTIMATUM (Lat. ultimus, last). Final terms or conditions presented, after inconclusive negotiations, by one state to another, usually with a time limit for acceptance or rejection. An ultimatum may be given in order to put an end to delaying tactics on the part of an opponent, or may offer terms impossible of acceptance, and so lead to war.

ULTRAMARINE (Lat. ultra, beyond; mare, sea). Blue pigment originally obtained by grinding up lapis lazuli. This method made the cost excessively high, and attempts were made to manufacture it artificially. It was first so produced commercially in 1828.

ULTRAMONTANE (Lat. ultra, beyond; montanus, pertaining to mountains). In general, term applicable to things on the farther side of mts., and in practice referring to the Alps; it is thus a term relative to the geographical position of those using it. In common usage Ultramontane designates that element in the R.C. Church which lays special stress on the absolute supremacy of the pope in matters of faith and ecclesiastical discipline. In France, Germany, and Austria the Ultramontanes have played important parts in politics, for example, the German Centre Party.

ULUNDI. Village of Zululand, S. Africa. It is situated 115 m. from Durban, and was the headquarters of Cetshwayo and other Zulu kings, the word meaning the high place. Here on July 4, 1879, the Zulus were decisively defeated by a British force under Lord Chelmsford. The Zulus lost about 1,500, the British casualties being about 100.

ULVERSTON. Urban district, seaport, and market town of Lancashire. On Morecambe Bay, near the mouth of the Leven, 26 m. N.W. of Lancaster. It has a station on the L.M.S. Rly. It is the centre of a mining district, with ironworks and foundries. Market day, Thurs. Pop. 10,121.

ULVERSTONE. Town of Tasmania. It stands on the river Leven, in the midst of a fertile, arable district, 94 m. by rly. from Launceston. Pop. 2,750.

Ulysses. Latin form of the name of the Greek Odysseus (q.v.).

UMBEL. Form of inflorescence in which all the footstalks of a cluster of flowers radiate from a common point at the top of the flower stem. See Flower; Inflorescence.

UMBRA (Lat. shadow). In astronomy, word used in two senses: (1) The darkest portion of the shadow cast by the earth on the moon or the moon on the earth. It is surrounded by the penumbra. (2) The darker, but not the darkest, portion of a sunspot.

UMBRELLA (Lat. umbra, shade). Instrument carried for protection against rain or sun; when used for the latter purpose it is commonly termed a sunshade or parasol. It is made of silk, cotton, paper, etc., stretched on a steel or wooden radiating, folding frame, supported on a rod. In England Jonas Hanway (q.v.) was one of the first to make a habit of carrying one.

By the invention of the Paragon ribs, Samuel Fox improved upon the old umbrellas with wooden ribs and did much to stimulate the trade of umbrella making. In the East umbrellas were used as symbols of royalty and power from early times. In ancient Egypt and Nineveh sculptured remains show them carried in procession, and they are found pictured on Greek vases.

UMBRELLA TREE (*Magnolia umbrellata*). Small tree of the order Magnoliaceae, native of N. America. The oval-lance-shaped leaves are 1 ft. to 2 ft. long, crowded at the summit of the flowering branches in an umbrella-like circle. The flowers are slightly scented.

UMBRIA. Dept. of central Italy coterminous with the prov. of Perugia. The ancient Umbria extended more to the E., and touched the Adriatic coast. The people were akin to the Oscans and Latins. They were defeated by Rome in 308 B.C., and finally conquered at the battle of Sentinum in 295 B.C. After the Social War their history merged into that of Rome. See Rome.

UMTALI. Mining and agricultural centre of Southern Rhodesia, 171 m. by rly. from Salisbury. Here are the workshops of the Beira-Mashonaland rly. Gold, silver, lead, and copper are mined. European pop. 2,299.

UNCIAL (Lat. uncia, an inch). Ancient style of writing in capital letters. Derived from an expression of S. Jerome's, the term denotes the rounder and less regular characters resulting from the adaptation of stone-incised capitals to vellum writing. See Alphabet; Palaeography; Writing.

UNDERCLIFF. Name given to the coast of the Isle of Wight between Ventnor and St. Catherine's Point. It has a very mild climate. See Wight; Isle of.

UNDERWRITER. Originally one who insured ships and their cargoes against loss and damage, but now most underwriters undertake almost every kind of risk. The name is due to the fact that such write their names under the wording of the policy. It is also used for those who underwrite, i.e. insure, appeals to the public for capital, whether such are made by states, municipalities, or business houses. The underwriter, in return for a commission, undertakes to take up all that the public does not subscribe for. Risks of almost every other kind can be insured. The association of underwriters in London is known as Lloyd's (q.v.).

UNDSET, SIGRID (b. 1882). Norwegian novelist. Born May 20, 1882, the daughter of a professor of archaeology, she worked for a time in an office. Her early stories won popularity, but wider and European recognition came in 1912 with *Jenny* (Eng. trans. 1920). Later she wrote *Kristin Lavransdatter*, a story of Norway in the Middle Ages, and in 1928 she received a Nobel prize.

UNEMPLOYMENT. Condition of being without work. It was at first treated as a subject for charitable effort, and when it became unusually acute funds were raised by public subscriptions for the sufferers. The trade unions gave subsistence allowances to their unemployed members, but this left much unemployment untouched, while state schemes for providing employment usually failed.

In 1911 a national scheme of insurance against unemployment was introduced, while, as a subsidiary method of dealing with the problem, labour, or employment, exchanges were opened throughout the country. The insurance scheme greatly mitigated the hardships attendant on unemployment, but did little to lessen its volume, and after the Great War it attained great proportions. In Great Britain the number of unemployed on the register was hardly ever below 1,000,000, and in 1930 it rose to over 2,300,000.

UNEMPLOYMENT INSURANCE. At first this was confined to certain specified classes of workers, but in 1916 many munition workers were brought in. In 1920 there was a large extension, and the scheme now applies to all employees who receive less than £250 a year, certain classes only being exempted. The chief classes of these are agricultural labourers and domestic servants.

The contributions to this scheme are paid in the same way as contributions to the national health insurance scheme. Every week the employer must stamp a card for each employee insured. Part of the cost of this stamp falls on himself, but part he can deduct from the wages of the employee. The weekly contribution is as follows:

	Employer.	Employee.	Total.
Men (18 to 21) ..	8d.	7d.	1s. 3d.
Boys (16 to 17) ..	7d.	6d.	1s. 1d.
Women (18 to 21) ..	7d.	6d.	1s. 1d.
Girls (16 to 17) ..	6d.	5d.	11d.
Boys ..	4d.	3d.	7d.
Girls ..	3d.	3d.	6d.

Contributions cease to be payable when the employee reaches the age of 65, as he or she is then qualified for an old age pension. If, however, the employee continues to remain at work, the employer must pay his share of the joint contribution.

The benefits are at the following rates:

	s.	d.
Men (18 to 21) ..	17	0 a week
Boys (17 to 18) ..	14	0 "
Women (16 to 17) ..	9	0 "
Girls (18 to 21) ..	6	0 "
Boys (17 to 18) ..	15	0 "
Girls (16 to 17) ..	12	0 "
	7	6 "
	5	0 "

In addition there are allowances for dependants, these being 9s. for an adult and 2s. for a child. Thus an unemployed man with a wife and three dependent children will draw 32s. a week. No contributions are required during periods of unemployment.

UNGAVA. Dist. of Canada, formerly a territory of the Dominion and now part of Quebec. It is the northern part of the Labrador peninsula and its area is 351,780 sq. m. The climate is too cold for most agricultural pursuits. There are rich deposits of iron, lead, and copper, and quantities of fur-bearing animals. A good deal of the land is covered with forests. Ungava was originally part of Rupert's Land, and as such belonged to the Hudson's Bay Company. In 1869 it was purchased by the Dominion, and in 1895 the territory of Ungava was created out of it. In 1912 this was added to the province of Quebec.

Ungava Bay extends S. from Hudson Strait and receives the waters of the Leaf, Koksoak, Whale, and George rivers. It is about 175 m. wide, extends inland for about the same distance, and contains the island of Akpatok.

UNGULATA OR UNGULATES. Order of mammals which includes all the hoofed forms, as the cattle, sheep, antelopes, giraffes, deer, camels, llamas, pigs, hippopotami, rhinoceroses, horses, hyraxes, and elephants. In these the limbs have lost the power of grasping, and the feet are adapted for running only, the toes being protected by an external casing of horny substance known as a hoof. The ungulates are divided into two groups. The odd-toed ungulates include the horse, elephant, etc.; while the Artiodactyla, or even-toed ungulates, include the cattle, deer, sheep, etc. See Ruminant.

UNIAT (Russ. *uniyat*, from Lat. unus, one).

Oriental church which has been brought into communion with the Church of Rome, but retains its ancient rites, liturgies, and customs. Their clergy are allowed to be married; they communicate in both kinds, and they use leavened bread in the Eucharist. They originated in Poland in 1596, when part of the Lithuanian Church submitted to the pope, but in the 18th and 19th centuries, under Russian pressure, many of their congregations rejoined the Greek Church. This Ruthenian Church, as it is called, is still by far the largest of the Uniat Churches.

UNICORN (Lat. unum, one; cornu, horn).

Fabulous quadruped, resembling a horse, with a single long, forward slanting horn on its forehead. Ctesias mentions it as inhabiting India, but at a later date it was placed in Africa. It is probably derived mainly from the rhinoceros, perhaps also from the oryx, depicted on ancient monuments in profile, but its spirally twisted horn is the tusk of the narwhal (q.v.). The unicorn, it was believed, was fierce and swift, but could be immediately tamed by a virgin. Cups of its supposed horn, really rhinoceros horn, were thought to make poison harmless. Represented with cloven hoofs and a tufted tail, it is used as a device and supporter in heraldry. The supporters of the royal arms of Scotland are two unicorns argent, crined and gorged or.

UNIFORM. Dress of one pattern (una forma) or colour distinguishing those belonging to one service, e.g. naval, military, court, diplomatic, police, nursing, and boy scout, or one class, e.g. occupants of a convict prison. See Army; Fire Brigade; Grenadier; Police; Sergeant-at-Arms.



Umbrella or 750 B.C., from an Assyrian bas-relief. Above, Nigerian state umbrella



Umbrella Tree. Flower and cluster of leaves

UNIFORMITY. Condition of similarity or agreement. In England the Acts of Uniformity, four in number, were statutes passed to secure general uniformity in the doctrines, services, and observances of the Church of England. The first accompanied the issue of the first book of common prayer in 1549. The second accompanied the issue of the second prayer book in 1552.

The third came on the accession of Elizabeth, with the issue of the third prayer book in 1559. The fourth Act of Uniformity followed the Stuart restoration (1660), and the accompanying revision of the liturgy, in May, 1662. It ordered the use of the revised liturgy in every church and chapel, the regular ordination according to the Anglican rite of all incumbents before St. Bartholomew's Day following, and a formal declaration from all of their entire acceptance of the service book. The result was the resignation of over 1,200 incumbents. See Nonconformity: Prayer Book.

UNIGENITUS (Lat. unus, one; genitus, begotten). Name given to the papal bull issued to suppress the Jansenist heresy, 1713. After many years of controversy and attempts on the part of the Church to convert the Jansenists from their errors, Clement XI issued the bull which condemned 101 propositions of heretical doctrine taken from the works of Pasquier Quesnel. The French high ecclesiastics and universities declared against the bull and formed a new party. See Jansenism.

UNION. 1. local government, the combination of two or more contiguous parishes for poor law purposes. Unions were first formed in 1782, and later under the Act of 1834. The term is popularly applied, like "Housc," to a union workhouse. See Poor Law.

Union Day. Day on which the union of the S. African states was established, May 31, 1910. It is observed as a general holiday.

UNIONIST. Name of a political party in the United Kingdom. It was created in 1885, when, rather than accept Home Rule, a number of Liberals under Lord Hartington, afterwards Duke of Devonshire, and Joseph Chamberlain, left the party. In 1895 some Liberal Unionists entered the ministry of Lord Salisbury, and gradually the coalition of Conservatives and Liberal Unionists became known as the Unionist Party. The party organizations, however, remained distinct until 1912. In 1915 the Unionist leaders joined the coalition government, and the party supported the ministries of Asquith and Lloyd George.

In Oct., 1922, the Unionists broke up the Coalition govt., and from then until Jan., 1924, and again from Oct., 1924, to May, 1929, were in power as a separate party. The party organization is the National Unionist Association, 1, Palace Chambers, Bridge Street, Westminster, S.W.

UNION JACK. British national flag. It is composed of the banner of S. George, white with a red cross, for England; the banner of S. Andrew, blue with a white saltire or diagonal cross, for Scotland; and the banner of S. Patrick, white with a red diagonal cross, for Ireland. The first Union flag showed the blending of the banners of England and Scotland at the union in 1603, and was confirmed in 1707. This blending was done by placing the cross of S. George fimbriated argent, i.e. with a narrow border of white, over the Scottish saltire. At the union with Ireland in 1801 the banner of S. Patrick was added, this being done by placing the red saltire fimbriated as the

cross of S. George, combined with the white saltire of S. Andrew, but, not to give undue preference, the two saltires were "counter-charged" in such a way that in the first and third quarters the white saltire, and in the second and fourth the red saltire is uppermost.

The Union Jack Club is a British institution for sailors, soldiers and airmen. It is in Waterloo Road and was opened in 1907. See Flag.

UNITARIANISM. System of theology, a belief that God exists in one Person. It has no creed, and is opposed to dogma. Its modern position in Great Britain has been defined as a belief in the unity of God, in the humanity of Jesus, who is regarded as a prophet superhumanly endowed: in progressive revelation: and in the immortal hope for all mankind. While believing in the fatherhood of God and the brotherhood of man, Unitarians deny the doctrine of the Trinity; the verbal infallibility of the Bible, and eternal torment.

The first Unitarian church in London was founded by Theophilus Lindsey (1723-1808) in Essex Street, Strand, W.C., where, at Essex Hall, are the British headquarters. The British and Foreign Unitarian Association was founded in 1825; a national Unitarian conference was organized at Liverpool in 1882. There are training colleges at Manchester and Oxford. In the United Kingdom are 350 ministers and 345 places of worship.

UNITED FREE CHURCH. In Scotland a presbyterian church, now part of the Church of Scotland (q.v.). It was formed in 1900 by the union of the Free Church of Scotland and the United Presbyterian Church.

No doctrinal difference existed between the Free Church and the United Presbyterians, and their church organization had much in common, so that it had long been apparent that there was no valid reason for their separate existence. But a small section of the Free Church—commonly known as the Wee Frees—held out, and when the union of the two bodies was accomplished in 1900 they held aloof, and claimed that they were now the Free Church of Scotland, and entitled to its property (see Free Church of Scotland). In 1929 negotiations for the union of the U.F.C. with the Church of Scotland were completed.

UNITED IRISHMEN. Society of disaffected Irishmen first formed in Dublin in 1790 by Hamilton Rowan and Wolfe Tone. It was a product of the French Revolution in Ireland and there was much discontent among the Roman Catholics on account of their political disabilities, and among the peasantry generally on account of the impoverished state of agriculture. The necessity for parliamentary reforms provided common ground for a combination of Protestants and Roman Catholics in the new society—hence the name—but with the progress of the French armies a programme of Irish independence emerged.

Risings were arranged and expeditions sent from France. In Dublin the rebel leaders were taken, and the only serious fighting took place on Vinegar Hill, where the rebels were defeated by British troops on June 26, 1798.

UNITED KINGDOM. Short name for the kingdom long known as the United Kingdom of Great Britain and Ireland, and since 1923 as the United Kingdom of Great Britain and Northern Ireland. It may be said to date from 1707, when the parliaments of England and Scotland were united, but the name was not actually taken until 1800, when the parliament of Ireland was incorporated.

At this time the British sovereign was Queen Anne, but seven years later (1714) she died childless, and the arrangement made by the Act of Settlement of 1701 came into force. George I became king and the Hanoverian dynasty was on the throne. From this time is usually dated the beginning of the system of government by party, although it was some years before it was firmly established. Just before the reign began the peace of Utrecht had ended the war with France and secured colonies in America and other advantages for Britain.

The thirteen years of George I's rule were troubled by the first rising of the Jacobites in 1715 and by the South Sea Bubble, but these dangers were

overcome, and the king was able to leave a fairly contented country to his son George II. This was partly due to Sir Robert Walpole, who in 1721 had begun his long spell of office as Britain's first prime minister. His main consideration was peace, and until 1739 he kept the country from war, with consequent advantage to her finances and her trade.

Walpole left office in 1742, and for the next 40 years none of his successors enjoyed very long spells of power, Lord North perhaps being an exception. The greatest of them was William Pitt, afterwards earl of Chatham, but before he rose to high place the second rising of the Jacobites had been crushed at Culloden. In the Seven Years' War, which broke out in 1756, after a peace lasting for eight years, Pitt put new life into the naval and military operations, and by this and his policy of subsidising Frederick the Great and other allies contributed greatly to the very substantial gains, notably Canada and India, made by Britain at the peace of 1763.

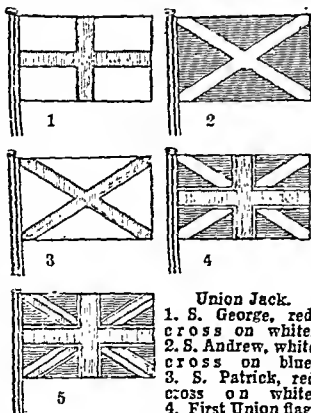
By this time George III was on the throne. Young and ambitious, he was anxious to take a controlling part in the affairs of state. His first attempt, made through Lord Bute, was a failure, but he was more successful when he had Lord North for his prime minister. King and premier must bear some part of the responsibility for the policy which led to the loss of the American colonies. These revolted in 1776, and in 1783 their independence was recognized by Great Britain.

Compensation for the loss of the American colonies was found in the wealth created by the industrial revolution, which in 1783 was in full swing. In that year William Pitt became prime minister. During the early years of his long tenure of power he was able to put the national finances on a sound footing, but his schemes of reform were stopped by the outbreak of war with France in 1793.

The conduct of the French war occupied Pitt for the rest of his days, except for a short period of peace in 1802, and when he died in 1806 it was still raging. In addition he had to deal with a rebellion in Ireland in 1798, which was followed by the union of 1800. In the war against France, Great Britain was the financial mainstay of the several alliances, her fleets won some resounding victories, Trafalgar especially, and her army contributed to the final overthrow of Napoleon.



United Kingdom. Arms borne by the sovereign



Union Jack.

1. S. George, red cross on white.
2. S. Andrew, white cross on blue.
3. S. Patrick, red cross on white.
4. First Union flag.
5. Union Jack.

The new era which began after Waterloo was at first marked by a good deal of privation and consequent unrest, the result of a long and costly struggle. Gradually, however, conditions improved, but with the improvement came, more strongly than ever, the demand for political and social reforms long overdue.

George III, who died in 1820, was succeeded in turn by his sons, George IV and William IV, but neither reigned long. When, in 1837, William died without legitimate issue the crown passed to his niece Victoria, daughter of another son of George III, Edward, duke of Kent Hanover, where the law did not permit a woman to succeed, was separated from Great Britain after a union of 123 years.

The accession of Victoria was the beginning of an era of unprecedented material progress. Never before did wealth and population increase as rapidly as they did in the first 40 or 50 years of the queen's reign. Many causes contributed to this, but the most potent was the creation of new means of communication in the shape of railway engines and steamships and the use of the same power, steam, to produce goods on an enormous scale. Equally momentous were the political and social changes which made the country into a real democracy, controlling its own destinies, and the centre of the group of countries and colonies that make up the British Empire.

During the queen's early years her leading ministers were Lord Melbourne and Sir Robert Peel, leaders of the Whigs and Tories respectively. The next prominent pair were Lord Palmerston and Lord John Russell, occasionally rivals, but of the same Whig creed, who dominated the country at a time when the Tories were broken by the split over the corn laws. They were followed by Gladstone and Disraeli, and during their time the Liberals and Tories were more evenly matched than before. After the Liberal split over home rule in 1885 came a period of Conservative, or rather Unionist, dominance, and Disraeli's successor, Lord Salisbury, was prime minister when Queen Victoria died in 1901.

In domestic affairs there was a constant stream of legislation, directed in the main to improving the condition of the people, to which writers and thinkers, like Carlyle and Ruskin, paid a good deal of attention, if the employers of labour did not. The reform bills of 1867 and 1884, following the lines laid down in 1832, gave the vote practically to all male adults and more representatives to the large towns. Other reforms were economic. These began with the abolition of the corn laws, by which bread was freed from taxation. Gladstone removed the taxes from other articles in common use, and a free trade system was established.

Other outstanding political events were the disestablishment of the church in Ireland and the introduction of compulsory, and later free, education. Ireland was a constant source of anxiety, sometimes, as in the period 1880-84, very serious anxiety indeed, but Gladstone's attempt to settle the difficulty by the grant of home rule in 1885 only succeeded in splitting his party. During the last 25 years of the queen's reign much was heard of Imperialism.

This may be dated, perhaps, from 1876 when the queen was made empress of India, or 1878, when her ministers took a leading part in settling the affairs of Europe in Berlin. It was marked by a belief that the extension of Britain's authority was beneficial for all concerned. In 1890, by agreement with Germany, much of Africa was partitioned between these and other powers, and Britain's intervention in Egypt, a decade earlier, led to large tracts of the Sudan passing under her control. At the other end of the continent the war with the Boers, a legacy of misfortunes and mistakes on both sides, was still raging when Queen Victoria died in Jan., 1901.

Victoria's successor, Edward VII, only reigned for nine years, but he exercised a good deal of influence on foreign affairs, chiefly in the direction of friendship with France. In 1905 the long period of Unionist rule came to an end and a general election in 1906 put the Liberals in power. Social reforms, such as old age pensions and insurance, were introduced, and over the Budget of 1909 there broke out the oft threatened quarrel with the House of Lords. In 1910 there were two general elections, and after the second the Parliament Act, limiting the powers of the Lords, was passed. In the midst of the crisis, in May 1910, King Edward died.

With George V on the throne the Liberals made use of the Parliament Act to pass measures for home rule for Ireland and the disestablishment of the Welsh Church. The former led to serious trouble in Ulster, which was at its height when the Great War was threatened. Its outbreak on Aug. 4, 1914, composed this and other differences and the operation of the measures was postponed. The war was begun by the Liberals, but after April, 1915, was carried on by a coalition government, first under Asquith, and from Dec., 1916, under Lloyd George.

Lloyd George and the coalition remained in power until 1922, being responsible for the conduct of the peace negotiations and the granting of the parliamentary vote to women. After his fall the Unionists and the Labour party had each brief spells of office, the latter forming a government for the first time in 1924. At the end of that year a Unionist ministry took office and remained in power until 1929, when the second Labour government was formed. The cost of the war and the new social services pressed heavily on the country's resources, involving taxation on an enormous scale. The redeeming virtue was that Britain paid her way without recourse to dubious financial experiments. See England; France; Ireland; George, Lloyd; Pitt, W.; Scotland; Victoria; Walos; Walpole, R.; War, World; Waterloo. Campaign of; etc.

UNITED METHODIST CHURCH. The Religious denomination now forming one branch of the Wesleyan Methodist Church. It was constituted in 1907 as the result of the amalgamation of three Methodist churches—the Methodist New Connexion, the Bible Christian Church (q.v.) and the United Methodist Free Ch. ch.

According to recent statistics for Great Britain the United Methodist Church had 2,216 churches, with a membership of 153,757, and 713 ministers. It has 4,735 lay preachers and 242,886 Sunday scholars. See Methodism; Wesleyan Methodist Church.

UNITED PROVINCES. Province of India. It is composed of Agra and Oudh, and is bounded by Tibet and Nepal N., the Punjab and Rajputana W., Central India S., and Bihar and Orissa E. It comprises the plains of the Upper Ganges, the Jumna, and their tributaries and adjacent hill tracts N. toward the Himalayas and S. toward the scarp of the Deccan. Important cities include Benares, Lucknow, Agra, Cawnpore, and Allahabad. The area is 112,562 sq. m. Pop. about 45,500,000.

UNITED STATES OF AMERICA. Federal republic occupying the whole of the S. part of the N. American continent, excepting Mexico. It extends from the Atlantic Ocean to the Pacific, and from the Canadian frontier to Mexico and the Gulf of Mexico. Outlying territories comprise Alaska, Hawaii, Porto Rico, the Philippine Islands, Guam, and some islands in the W. Indian and Samoan archipelagoes. Washington is the capital, and New York City the chief financial and commercial centre. The area of continental U.S.A. is 3,026,789 sq. m. Pop. 120,000,000, of whom only 355,500 are Indians.

The surface is roughly made up of two great mountain ranges, the Appalachians and the Rockies, with vast plains between. E. of the Appalachians are the Atlantic coast lowlands, including Dismal Swamp and other marshland. E. of the Rocky Mts., the main watershed of the country, lie the Bad Lands, great tracts useless for agriculture, and the Prairie Belt. The Coast Range, with the parallel inland range formed by the Cascade Mts and Sierra Nevada, is separated from the W. coast by the narrow Pacific Slope, a fertile region with a genial climate. The broad zone between the Rocky Mts. and the Sierra Nevada is a high plateau, broken by depressions. It contains the Great Basin, chiefly in Utah and Nevada, a large area of internal drainage.

The Mississippi river system is the most important in the U.S.A.: many of the rivers included in it have a navigable length of hundreds of miles. Few of the rivers discharging into the Atlantic, such as the Hudson, Delaware, and Potomac, are navigable for any great distance. Among the rivers draining towards the Pacific are the Columbia, Sacramento, and Colorado. In the N.E., close to the Canadian border, are the Great Lakes (q.v.). Between Lakes Erie and Ontario are the Niagara Falls. The chief lake of the Great Basin is Great Salt Lake.

In Yellowstone Park, a national reserve in Wyoming, many animals that were in danger of becoming extinct are kept as far as possible at liberty. Here, too, are numerous geysers and hot springs, and a Grand Canyon, though in grandeur it cannot compare with the Grand Canyon of Arizona. The Yosemite Valley, in California, unites the sublime with the beautiful in its cliffs and crags and waterfalls. Broadly, the E. is the mixed farming region; the centre the wheat-growing belt; between the Mississippi and the Rockies the grass-land area, where cattle are raised in enormous numbers; the S. is a cotton growing area.

Proceeding from E. to W., and grouping the 48 states under convenient headings, we have first the New England states: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut. Next come three Atlantic states: New York, New Jersey, and Pennsylvania, all highly industrialised. The S. states are Delaware, Maryland, Virginia, W. Virginia, N. Carolina, S. Carolina, Georgia, Florida, Kentucky, Tennessee, Mississippi, Alabama, Louisiana. The middle west includes Ohio, Indiana, Illinois, Missouri, Iowa. The N. central states are Michigan, Wisconsin, Minnesota, N. Dakota, S. Dakota. Then come some which may all be considered western: Arkansas, Oklahoma, Kansas, Texas, Nebraska, Wyoming, Montana, Colorado, New Mexico, Arizona, Utah, Idaho, Nevada. Lastly come the Pacific states: Washington, Oregon, and California.

There are over 262,000 m. of railways. The country is well supplied with ports. New York has a magnificent harbour and extensive accommodation. Other important ports include Boston, New Orleans, Philadelphia, Baltimore, San Francisco, Savannah, and Galveston.

The country has a written constitution. The executive power is vested in the president, who, as well as the vice-president, is elected every four years. The president chooses the heads of the departments who comprise the cabinet. The vice-president presides over the senate, and, in the event of the president's death, fills out his term. The legislative power is vested in Congress, which consists of the Senate and the House of Representatives. The Senate consists of two members from each state chosen by popular vote for six years. The House of Representatives is elected every second year by the votes of qualified citizens, their numbers being determined by the census. In 1929 there were 435 members.

HISTORY. The first white settlers in the United States were Spaniards, who made their home in Florida. In 1607 some Englishmen settled at Jamestown, and around it the colony of Virginia grew. In 1620 others landed at Plymouth Rock, and the colony of Massachusetts took its rise. Other colonies were then founded. One group, inhabited chiefly by Puritans, was in what was called New England. In the south was another group, inhabited by men less narrow in their religious opinions, including the Roman Catholic colony of Maryland. Between these two groups were Dutch settlements and Pennsylvania, the Quaker colony founded by William Penn.

The Dutch settlements became English after a war in 1664 and the name of the chief town was changed to New York. A temporary union of the New England colonies was founded in 1643 and external danger forced other unions upon them, but they were still independent of each other when George III and his ministers decided to tax them. The Boston riots and the answering repressive measures of the British government put the match to the fire, and in 1775 war broke out.

In 1776 the colonists declared that they no longer recognized the royal authority, and in the Declaration of Independence proclaimed themselves free and independent states. In 1778 the French government openly recognized the new nation and made an alliance with it. It was not until 1782, however, that peace was made. The treaty gave independence to the 13 colonies and ceded to them the land as far as the Mississippi.

Now came the difficulty of framing a constitution, and the even greater difficulty of finding money with which to carry on the government of the new republic. Thanks largely to Alexander Hamilton, a federal form of union was adopted; the constitution then framed has remained in force ever since. In 1789 Washington took office as first president, and the new congress set to work. The first political contests occurred between the Federalists, who were for firmly exerting the authority of the central government over the states, and those who would have interpreted the constitution more liberally. The latter called themselves Democratic Republicans, and so the Democratic Party came into being.

The republic soon turned its attention to extending the area under its control. In 1803 Louisiana was purchased from France, and in 1819 Florida was bought from Spain. Between these dates the U.S.A., as a neutral, had difficulties with both Great Britain and France, who were at war, and from 1812-14, owing to this and other reasons, there was an inconclusive war with the former power. In 1846-48 there was a war with Mexico. The American troops won a series of victories, and as the result part of California, as well as New Mexico and Texas, were given up by Mexico. In 1853 further territory was acquired from Mexico, this time by purchase. In 1867 Alaska was bought from Russia.

The civil war opened in 1861 and lasted for four years. Under Lincoln the northerners, or federalists, opposed the right to secede

demanded by the southerners, and in the end their cause proved victorious. The main result of the war, however, was to end slavery, as by a proclamation issued in 1862 all slaves were emancipated. The war over, the country set itself to the work of reconstruction, and began to make enormous advances in wealth and prosperity. Its vast natural wealth was revealed, and immigrants from Europe provided the necessary labour to work it. Except for the short war with Spain, the country was at peace until it intervened in the Great War in 1917.

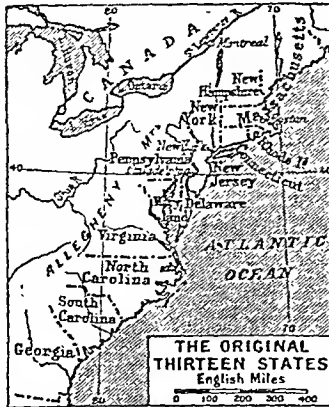
The years after the Great War proved that America was more determined than ever to keep clear of European entanglements. The country refused to join the League of Nations, although this was largely the idea of President Wilson. Conferences on disarmament were initiated by her leaders, who showed the less idealistic side of American politics in their arrangements for the payment of the large debts owing by the European allies.

UNIVERSALIST. Name given to those who believe that all men will ultimately be saved. This view was held, with some limitations, by the followers of Origen (q.v.). The first sect to make it a distinctive feature was founded in London in the 18th century.

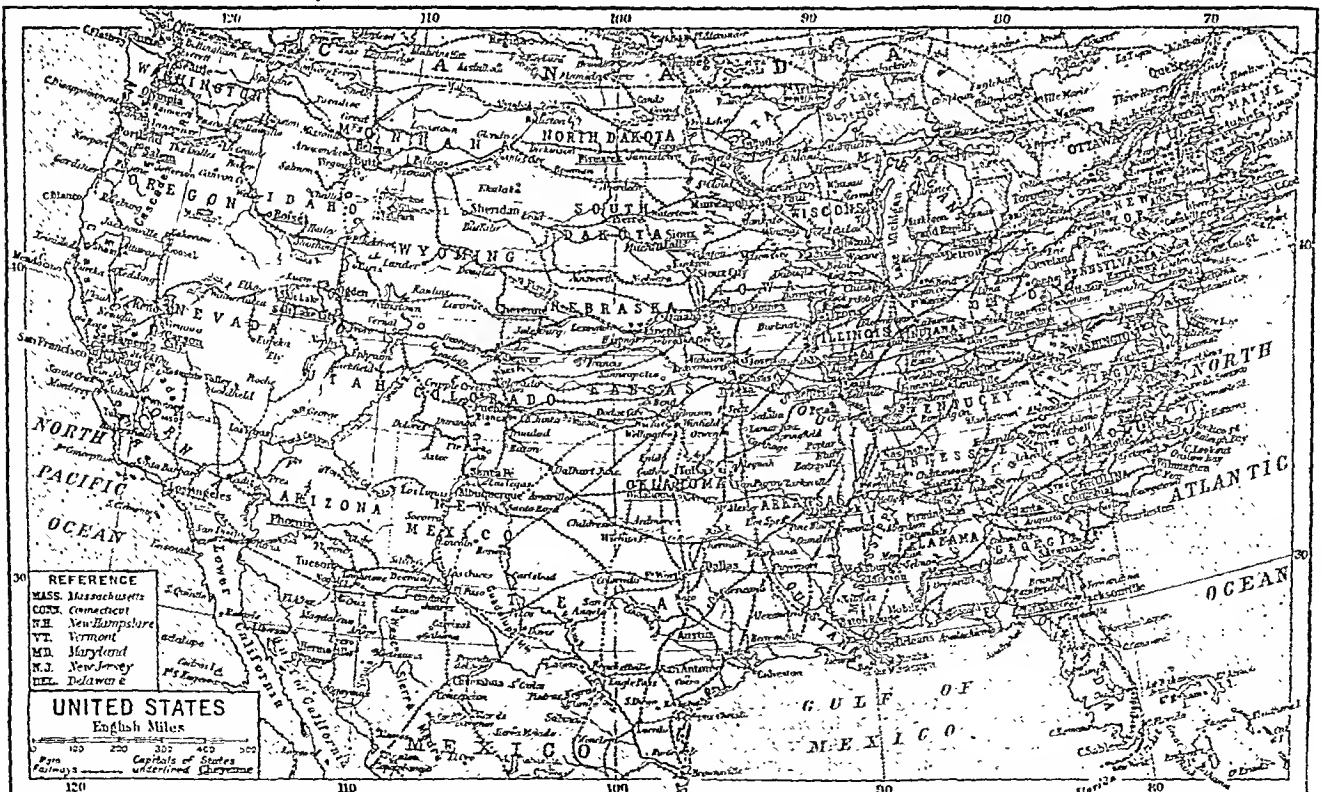
The American Universalists were founded at Gloucester, Mass., 1779, by John Murray, and held its first convention at Boston in 1785. The sect has become subdivided at various times, notably by the secession of the Restorationists in 1840.

UNIVERSAL LANGUAGE. Means of communicating ideas to all the inhabitants of the civilized world by universally understood sounds or written signs. During the Middle Ages Latin filled this want. The chief modern attempts are Schleyer's Volapük (q.v.) and Zamenhof's Esperanto (q.v.).

UNIVERSE. All created things viewed as constituting one system or whole. The term is often particularised in such expressions as the stellar universe, the universe of man, the invisible universe, etc.



United States of America. Map of the states which declared their independence of Britain, July 4, 1776



United States of America. Map showing the boundaries of the states, with their capitals underlined, and the main rivers and railways

UNIVERSITY (Lat. universitas) Name given to a national institution for advanced teaching and study, recognized for that purpose by a charter from the state. A university is empowered to confer degrees upon its students. Entrance to the university is called matriculation. From the time of matriculation to that of taking the degree, the student is called an undergraduate, and after conferment of the degree, a graduate. Degrees are of different grades, usually bachelor, master, and doctor. They can be taken in various groups of subjects, known as faculties. In England each university has a chancellor as its ceremonial head and a vice-chancellor who is the acting head. Each Scottish one has a rector.

Of the English universities Oxford and Cambridge are the oldest and occupy in some ways a unique position. There, and also at Durham, the next oldest, founded in 1832, students are required to reside in a college, or in lodgings licensed by the authorities. At the other universities residence is not obligatory, although there are hostels for those who come from distant places.

Scotland has four universities, St. Andrews, Aberdeen, Edinburgh, and Glasgow, but no new ones. There is a university college at Dundee. Wales has one university, with colleges at Aberystwith, Cardiff, Bangor, and Swansea. In Ireland the oldest is Trinity



University College, London. Front of the college, part of London University, in Gower Street

College, Dublin, long confined to Protestants. There is also the National University of Ireland for the Irish Free State and Queen's University, Belfast, for Northern Ireland. All these universities, either severally or jointly, send members to Parliament.

The University Extension movement originated at Cambridge in 1873. By means of lectures and classes it seeks to bring university teaching within the reach of the public.

University Settlements are centres of social work in poor districts. They are usually conducted by members of the universities. The first was Toynbee Hall (q.v.).

UNIVERSITY COLLEGE. College of Oxford University. It ranks first on the official list of colleges. Its head is the master. The buildings, which front the High Street, date partly from the 17th century.

University College, London, the buildings of which are in Gower St., was opened as the university of London in 1828. In 1836 the university became a distinct institution, but a connexion was kept between the two. Its head is the provost, and it has its own staff of professors. University College, Durham, dates from 1837, and there are university colleges in Nottingham, Leicester, Southampton, and elsewhere. See Cambridge; London; Oxford.

University College Hospital is situated in Gower Street, London. It was founded in 1833, and rebuilt and enlarged, 1897-1905.

UNKNOWN WARRIOR. Name given to a man, regarded as a type, who fell in the Great War. The idea originated in Britain, and took the form of selecting from a war cemetery in France the body of a soldier, whose identity was unknown, to be buried in Westminster Abbey as a symbol of the nation's homage to

the fallen. The body was interred in the Abbey on Armistice Day, Nov. 11, 1920.

Canada, America, France, Italy, Belgium and Portugal have also interred unknown warriors.

UNLEAVENED BREAD. Flat cakes or biscuits (Heb. mazzoth), made without yeast, and eaten ritually by the Jews. According to the Mosaic law (Ex. 12), the feast of unleavened bread, during which all leaven is removed from the house, is celebrated for seven days after the Passover, at which feast also unleavened bread is eaten. In the R.C. and Monophysite Churches unleavened bread is used in the Eucharist. See Leaven; Passover.

UNST. One of the Shetland Islands, about 28 m. N. by E. of Lerwick. It lies almost N. and S., being 12 m. long and averaging 4 m. in breadth. Balta Sound and Uyea Sound furnish anchorage for vessels of medium draught. Pop. 2,100. See Shetland Isles.

UPAS TREE (*Antiaris toxicaria*). Tree of the order Urticaceae, a native of Java. When the bark of the tree is incised, a milky juice exudes that is extremely virulent and is used for poisoning arrows. Its principle is known as antiarin, and is allied to strychnia. On the basis of this single fact a mass of legend was built up, as, for example, the story that nothing could continue to live within a considerable radius—10 or 12 m.—of it so virulent and deadly was its effluvia.



Upas Tree. Leaves and fruit of the Javan tree

UPAVON. Village of Wiltshire. It stands on Salisbury Plain, near the Avon, 10 m. from Devizes. In the 20th century the central flying school for the British air forces was located here. Pop. 767.

UPHOLLAND. Urban dist. of Lancashire. It is 4 m. from Wigan, and is a centre of coal mining and quarrying. A Benedictine priory was founded here in 1318. Pop. 5,532.

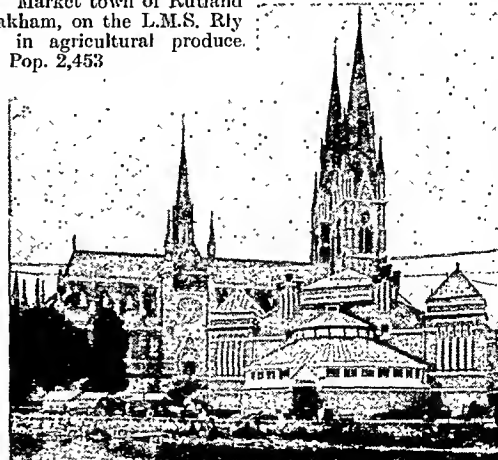
UPINGTON. Town of the Cape Province, S. Africa. On the Orange river, 2,800 ft. above sea level and 258 m. by rly. from De Aar, it is the centre of an agricultural district. Upington was held by the rebels during the S. African rebellion, and later in 1914 was connected by rly. with Prieska. The line was then carried across the Orange to the German frontier at Kalkfontein to facilitate the conquest of German S.W. Africa. Pop. 2,500.

UPPINGHAM. Market town of Rutland. It is 7 m. from Oakham, on the L.M.S. Rly. There is a trade in agricultural produce. Market day, Wed. Pop. 2,453.

Uppingham

School was founded in 1584. In 1853 Edward Thring was appointed headmaster, and under him it became a great public school. It has accommodation for 500 boys. See Thring, E.

UPPSALA or **UPPSALA.** City and metropolitan see of Sweden. It is 41 m. by rly. N.N.W. of Stockholm, and is chiefly renowned for its university, founded in 1477.



Uppsala. The Gothic cathedral, dating from the 13th century. In the foreground is the municipal fish market

and munificently endowed by Gustavus Adolphus. The cathedral, dating from the 13th century, contains the burial chapel of Gustavus Vasa, who built the castle on a hill S. of the city. Pop. 30,208.

UPSET PRICE. In sales by auction, lowest price at which a vendor is willing to sell his property. It thus forms a start for any bidding. See Auctioneer.

UR. Sumerian city. Now represented by the ruins of Al Mugheir, U. stood on the Euphrates, 140 m. S.E. of Babylon. About 3100 B.C. Mes-annipadda founded the first dynasty of Ur, which lasted for five generations. Under the Sargons (see Sargon) Ur remained the centre for the worship of the moon-god Nannar. About 2450 B.C. Ur-Nammu (Ur-Engur) founded the third dynasty, and there ensued the time of Ur's greatest prosperity. The city was practically rebuilt on a magnificent scale, the Ziggurat, or staged tower, a sister structure to the Tower of Babel at Babylon, being one of the most striking ruins in Iraq. Abraham lived at Ur between 2000 and 1900 B.C., the region being mentioned in the Bible as Ur of the Chaldees (Gen. 11).

About 1900 B.C. Hammurabi of Babylon conquered Ur, but it long retained its religious importance. Subsequent kings of Babylon repaired the temples, Nebuchadnezzar being busy in the work of restoration about 600 B.C. By 300 B.C. the city was a heap of ruins. Valuable archaeological discoveries were made at Ur in 1918 and 1922 by the British Museum and the Pennsylvania University expeditions. See Assyria; Babylonia; also illus. p. 1373.

URÆMIA. Form of toxæmia, or blood poisoning, which may develop in the course of nephritis or Bright's disease. Early symptoms are foul breath, coated tongue, headache, palpitation, and sometimes cramp. Treatment consists in active purgation and promoting sweating. See Blood Poisoning.

URAL (Russian Zennoi Poias, girdle of the world). Mountain range in Russia. It extends from the Arctic Ocean to the Caspian Sea, about 1,600 m. The highest point, Teipos (Toll-pos-iz) is 5,433 ft.

The system is rather a broad, low plateau 200 m. wide in the S., with a number of ridges and dome-shaped masses.

It contains rich gold, silver, platinum, copper, iron, coal, and salt mines. The dist. is equally celebrated for precious stones, such as emerald, topaz, diamond, and jasper.

The river Ural rises in the E. slope, runs S.W. and S., and discharges into the Caspian Sea. Its length is about 1,500 m.



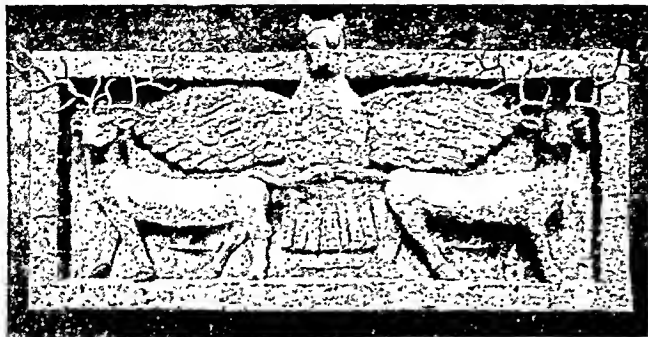
Ur. Headdress of a Sumerian queen, about 3000 B.C., from a stone tomb at Ur. Courtesy of Joint Expedition to Ur

URAL-ALTAIC. Term denoting a family of agglutinating languages. The simpler term Altaic is to be preferred, comprising the W. Altaic sub-families, Samoyedic and Finno-Ugric, including Hungarian; and the E. Altaic sub-families, Turkic, Mongolic, and Tungusic. In these, unlike inflexional Indo-European, the root is unchangeable, suffixes being added, the vowels of which are assimilated to the chief root-vowel by vowel harmony. See Altai Mtns.

URANIUM. Metallic element. Its chemical symbol is U, atomic weight 238.17; atomic number 92. Uranium is a hard white metal with a melting point of 1,600° C. and a sp gravity of 18.7. It was discovered by Klaproth in 1789, but not isolated until 1840. It is not found native, but occurs in pitchblende as uranous

URE. River of Yorkshire, a head-stream of the Yorkshire Ouse. It rises in the Pennines in the N. Riding and flows E. and S.E. through Wensleydale, past Askrigg, Masham, Ripon, and Boroughbridge, to join the Swale, the two streams forming the Ouse.

URFA. Town of Turkey. It is 78 m. S.W. of Diarbekir, and has trade in cotton and wheat. It occupies the site of the ancient city of Edessa (q.v.) Pop. 29,918



Ur. Aerial view of Ur and the temple Ziggurat. Above, relief of the god Imig in copper, reconstructed from fragments found at Tell el-Obeid. See p. 1372. Courtesy of the Joint Expedition to Ur

uranate, in Cornwall, Joachimsthal in Bohemia, Norway, the U.S.A., etc. The metal forms a number of compounds, including five distinct oxides. See Radio-activity: Radium.

URANUS (G. heaven). In Greek mythology, the first king of the gods. He was the son of Ge, the Earth, and by her he became the father of Oceanus, Hyperion, Themis, Cronos, and other gods and giants. These children he confined in Tartarus, and eventually they rose in revolt against him. Pron. Yoora-nus.

URANUS. Outermost planet but one of the solar system. It was discovered, March 13, 1781, by Sir William Herschel, who also detected, Jan. 11, 1787, two of the Uranian satellites, Oberon and Titania. The mean distance of the planet from the sun is 1,782,000,000 m., its period of revolution round the sun 84 years, its diameter 31,700 m. Its period of rotation on its own axis is uncertain. Two further satellites have been discovered, Ariel and Umbriel, both by Lassell in 1851. See Astronomy: Planet.

URBAN DISTRICT. In England and Ireland, a unit for local government purposes. These districts were created by an Act of 1894, populous areas which were not municipalities being made urban districts. Each has an elected council, presided over by a chairman, the election taking place every three years. They are the sanitary authorities for their districts and look after the streets, while the larger ones, those with over 20,000 inhabitants, are responsible for elementary education. See County Council

URGA. Town of Outer Mongolia. It is 170 m. S. of Kiakhia, and trades in wool, hides, furs, and horns. It is the seat of the Bogdo Khan, the chief Lama of the Mongols. Near Urga, in 1925, was discovered a Mongolian burial ground, probably of the 2nd century B.C. Pop. about 30,000.

URIAL (Ovis vignei). Species of wild sheep, found in the Punjab, Tibet, Afghanistan, and Baluchistan. It stands about 3 ft. high, and has greyish brown hair on the upper parts, with whitish under parts. The horns measure about 27 ins. along the curve. Uria are found both in the valleys and on the hills, and usually occur in flocks.

URIM AND THUMMIM. Sacred objects which the ancient Hebrews employed as oracles. They were probably two small stones, representing "yes" and "no," one of which was shaken out of some receptacle. The meaning of the words, which have been translated as Lights and Perfections, or as Light and Darkness, being uncertain.

URINE. Fluid containing waste material abstracted from the blood. Urine is secreted by the kidneys, from which it is passed through the ureters to the bladder, and thence is voided at intervals through the urethra. Normal urine is of a yellow colour, which may vary in tint to a considerable degree. The reaction of the urine in man is usually acid, but less acid in vegetarians, and alkaline



Urial. Big-horned, wild sheep of central Asia

in herbivorous animals. An increase in the amount of urine passed occurs in diabetes, certain forms of nephritis, or Bright's disease, and occasionally in hysterical attacks.

URMIA, URMIEH, or URMIEH. Town of Persia. It is 12 m. W. of the lake of the same name, and has a local trade and exports raisins. During the Great War the surrounding region was the scene of much fighting between the Turks and the Russians. Pop. 20,000.

The lake lies at an alt. of 4,000 ft., has no outlet, and is very shallow. Owing to its saltiness, fish cannot live in it. Its area is 1,795 sq. m.

URMSTON. Urban dist. of Lancashire. It stands on the Mersey, 5 m. from Manchester, of which it is practically an industrial suburb, on the Cheshire Lines Rly. Pop. 8,600.

URN (Lat. urna). Vase of clay, glass, stone, or metal, especially one with an egg-shaped body on a pedestalled base. In ancient Rome they were used for drawing lots, storing water, or depositing before tombs. Ruder sepulchral wares were placed in neolithic, bronze-age, and late-Celtic graves in Britain and elsewhere. See Canopus.

Urn burial is the name given to the interment of human remains in a jar-shaped receptacle, usually of clay.

UROCHORDA or UROCHORDATA. Class of lowly vertebrate marine animals comprising the ascidians or sea squirts. Sometimes termed the Tunicata or Tunicates, many of them assume the form of a tubular bag of leathery tissue attached by the base to a rock, etc. In the larval stage the animal is a free swimming tadpole-like organism with a well-developed notochord and a central nerve tube ending in an expansion which is the forerunner of the brain in higher vertebrates. These features disappear when the animal becomes adult. See Ascidian; Animal

URQUHART or URCHARD, SIR THOMAS (c. 1611-c. 1660). Scottish author and translator. Eldest son of Thomas Urquhart of Cromarty, he was educated at King's College, Aberdeen. As an opponent of the Covenant, he took part in the abortive movement in the north in 1639, and then took refuge at the English court, where he was knighted in 1641. In 1649 he joined the Royalists, and was taken prisoner, but was released in 1652. Urquhart's reputation rests on his fine translation of Rabelais. Little is known of his later years.



Urn-depicted in bas-relief on a Greek stela of the 5th century B.C.



Sir Thomas Urquhart, Scottish author

URSA MAJOR or THE GREAT BEAR. One of the northern constellations. It is also known as the Plough or Charles's Wain, and is a familiar constellation in the N. sky. It consists of seven bright stars denoted by the first seven letters of the Greek alphabet and a number of fainter stars. α and β Ursae Majoris are called the pointers from the fact that the line joining them points approximately to the pole star.

Ursa Minor, or the Lesser Bear, is a constellation between Ursa Major and the north pole.

URSULA. Virgin martyr, the patron saint of maidens. She is said to have been the daughter of a Cornish prince in the 5th century, and to have fled to Gaul to escape the Saxon invaders of Britain. After a visit to Rome she is reported to have been slain with many others by the Huns about 453, and to have been buried at Cologne. She is commemorated with her fellow virgin martyrs on Oct. 21.



Ursulines. Habit of the Order

URSULINES. R.C. religious order for women. It was founded at Brescia in N. Italy in 1537 by S. Angela di Merici (1470-1540). The original institution was an association of young ladies, living at home, who should devote their spare time to works of piety. In 1544 the association was changed to a religious congregation by Pope Paul III, and it was made an enclosed religious order under the rule of S. Augustine by Gregory XIII in 1572. The Order is famed for its schools.

The Company of S. Ursula was founded at Dôle in 1606. It has many houses on the Continent and a convent at Oxford.

URUGUAY. River of S. America. With the Paraná it forms the Plate river. (See La Plata.) It rises in S. Brazil and flows W.N.W. as the Pelotas. Most of its course of 1,000 m. is over the plateau. For the lowest 100 m. it is a broad stream, 6 to 9 m. across. Sea-going vessels reach Paysandú, 150 m. upstream, smaller vessels are stopped by rapids at Salto, 50 m. farther: above the rapids barges traverse the next 300 m. The chief affluent is the Rio Negro. For the lowest 400 m. it separates Uruguay from Argentina. See Argentina, map p. 121.

URUGUAY. S. American republic. It is wholly within the S. temperate zone, on the Atlantic coast, S. of Brazil, separated from Argentina by the Uruguay on the W. and by the estuary of the Plata on the S.W. The old name of the country, still in local use, is La Banda Oriental. Important towns are Montevideo, the capital; Paysandú, Salto, and Mercedes. The area is 72,153 sq. m. Pop. 1,808,286.

The country is an extension of the treeless grassy plain of the Argentine Pampa, though the Uruguayan open country is less flat and uniform. Six considerable rivers flow into the River Plate system, and three others into the Lago Merim. The Rio Negro divides the republic into two unequal parts. Important among the products and exports are meat, wool, and hides, and there are large establishments for making meat extracts and freezing meat. Gold, silver, copper, lead, manganese, and lignite occur. There are over 1,700 m. of rlys.

Formerly part of the Spanish viceroyalty of Rio de la Plata, and later a prov. of Brazil, Uruguay declared its independence in 1825. During the Great War Uruguay broke off diplomatic relations with Germany and gave the Allies large credits for the purchase of the Uruguayan harvests. A new constitution was adopted in 1919. See Argentina, map p. 121; Rosas, J. M.; South America.

Urundi. Dist. of the Belgian Congo, formerly in German East Africa. See Ruanda.

USEDOM. Prussian island in the Baltic Sea. With the island of Wollin it forms the N. side of the Stettiner Haff. It has an area of 158 sq. m. The people engage in cattle

rearing, farming, and fishing. There are sea-bathing resorts along the coast. Swinemünde and Usedom are the chief towns.

USHANT. English name for the island of Ouessant, France. The westernmost of the islands of Brittany, it lies 26 m. W. by N. of Brest. Of granite formation, baro and treeless, it covers about 20 sq. m. On July 27, 1778, an indecisive naval engagement took place off Ushant between the English fleet, under Keppel (q.v.), and a French fleet, under d'Orvilliers. On June 1, 1794, Lord Howe defeated the French off Ushant. Pop. 3,000. Pron. ush-ant.

USHAW. Village of Durham. It is 4 m. from Durham. Here is the Roman Catholic College, founded in 1808, the successor of the one at Donai, closed in 1794.

USK. River of S. Wales and Monmouthshire. An affluent of the Severn, it rises on the border of Carmarthenshire and Brecknockshire, cuts between the Brecknock Beacons and the Black Mts., continues S.E., and reaches the lowlands at Abergavenny, whence it flows S. to the Bristol Channel.

USK. Urban dist. and market town of Monmouthshire. It stands on the river Usk, 11 m. from Monmouth. There are ruins of a 13th century castle, and the chief building is S. Mary's church. In 1928 a new bridge across the Usk was opened. Market day, Mon. (alternate). Pop. 1,496.

ÜSKÜB or **SKOPJAE.** Town of Yugoslavia. It is 130 m. N.W. of Salonica, with which it has rly. connexion. Leather and dyes are made, and there is trade in tobacco, grain, agricultural products, fruit, and opium. Near are chrome mines. Üsküb was taken from the Serbians by the Turks in the Balkan War in 1912, and by the Bulgarian army during the Great War in 1915. Pop. 72,000.

USSHER or **USHER, JAMES** (1581-1656). Irish prelate. Born in Dublin, Jan. 4, 1581. He was educated at Trinity College there, and was ordained in 1601. He became chancellor of S. Patrick's Cathedral, Dublin, in 1603, regius professor of divinity at Trinity College in 1607, was consecrated bishop of Meath in 1621, and was translated to Armagh four years later. During his closing years he was preacher at Lincoln's Inn, London, and he died at Reigate, March 21, 1656. Ussher calculated the chronology found in old editions of the Bible and wrote several books.



James Ussher, Irish prelate

USURY (ultimately from Lat. *uti*, to use). Originally, any interest payable for the loan, i.e. use, of money. The taking of usury or interest from the Hebrews was expressly forbidden by the Mosaic Law, and the practice was regarded by the Christian Church as a form of robbery down to the 16th century. In England, from the reign of Henry VIII onwards many statutes were passed regulating the rates of interest. All these were repealed in 1854. See Moneylender; Pawnbroker.

USWORTH. Colliery district of Durham. It is 5 m. from Gateshead and consists of Great and Little Usworth. It is served by the L.N.E. Rly. Pop. 8,114.

UTAH. State of the U.S.A. In the Rocky Mts. area, it covers 84,990 sq. m. The Wasatch Mts. traverse the central part of the state from N. to S. To the E. are the Uintah Mts., and farther S. broken groups occur, while the area W. of the Wasatch Mts. forms part of the Great Basin and has a consistent elevation of about 5,000 ft. The Colorado, with its tributaries, drains the E.; the rivers of the W

discharge into the Great Salt, Utah, and other lakes. The chief crops are wheat, oats, and potatoes. Stock raising is important. The mines yield gold, silver, copper, lead, and coal. Utah university provides higher instruction. The rlys. have a total length of over 2,500 m. Salt Lake City is the capital. Mormons settled in the state in 1847, and form over 75 per cent. of the church membership of the state. Pop. 531,000. See Mormons.

UTERUS or **WOMB.** Organ in which the foetus or immature offspring develops and is nourished before birth. The uterus in the human species is a pear-shaped body about 3 ins. long, situated in the pelvis. During pregnancy the uterus expands very largely, contracting again after delivery.

The commonest tumour is known as a fibroid. This is non-malignant, and is usually curable by an operation. Cancer of the uterus is much more frequent in women who have had children. The first symptom is generally haemorrhage from the vagina, having no relation to the menstrual periods. If the disease is diagnosed early there is very good prospect of complete removal of the growth by operation.

UTICA. Ancient city of N. Africa. Founded by the Phoenicians, it was the greatest city of ancient Africa after Carthage, and was situated 20 m. N.W. of that city. It was generally the ally of Carthage, but in the Third Punic War sided with the Romans, and on the fall of Carthage was granted the greater part of that territory. Its remains include the amphitheatre, an aqueduct, and ruins of the harbour.

UTICA. City of New York, U.S.A. It stands on the Mohawk river, 94 m. W.N.W. of Albany, and is served by the New York Central and other rlys. and by the State Barge Canal. It is noted for the number of its charitable institutions. Its manufactures include hosiery and knitted goods. Pop. 101,604.

UTILITARIANISM (Lat. *utilis*, useful). System of ethics which sets up as the rule of conduct the best interests either of the individual or of the community. It began in the more selfish form, in the hedonist schools of the Cyrenaics and Epicureans.

A scientific system was first formulated by Jeremy Bentham, whose objective was the greatest happiness of the greatest number. His theories took no account of the quality of pleasure, a defect remedied by John Stuart Mill, who introduced the view that certain pleasures possessed an intrinsic value which rendered them superior to others. Herbert Spencer introduced a further modification in the form of evolutionary influences.

UTOPIA (Gr. *ou topos*, nowhere). Romance written by Sir Thomas More. It describes an imaginary island commonwealth where community of goods is the rule. It was written in Latin and first published in 1516, and gave rise to the epithet Utopian for any desirable but impracticable reform.

UTRAQUIST. Name applied to those followers of John Hus (q.v.) who demanded the reception of communion in both kinds (Lat. *sub utraque specie*). The Utraquists are also known as the Calixtines.

UTRECHT.

City of the Netherlands. It is on the Kromme Rhyn (Crooked Rhine), 21½ m. by rly. N.E. of Rotterdam. It is an important railway junction and has many manufacturing industries.



Utrecht. 14th cent. tower separated from the rest of the cathedral

The canals known as the Oude Graecht and the Nieuwe Graecht run through the centre of the town, the main part of which is surrounded by the Buiten Graecht. These, with their bridges and old houses, are a picturesque feature. The Gothic cathedral of S. Martin has a tower (338 ft.) with a carillon of 42 bells. Close by is the main building of the university, which has a fine library and geological and zoological museums. Pop. 151,600.

A small town in Natal, 28 m from Newcastle, is called Utrecht. It is a coal mining centre and is on a branch railway.

TREATY OF UTRECHT. This was signed in 1713 and put an end to the War of the Spanish Succession (q.v.). France gave up to Great Britain Nova Scotia, the Hudson Bay district and St. Kitts. Spain gave up Gibraltar and Minorca. Spain and her colonies in America were given to Philip V, a grandson of Louis XIV, while the Spanish possessions in Italy and the Netherlands went to his rival, Charles of Austria, as did Naples, Milan, and Sardinia.

UTTOXETER. Urban dist. and market town of Staffordshire. It is 15 m. from Stafford, near the river Dove, and is served by the L.M.S. and L.N.E. Rlys. The chief building is S. Mary's church, modern save for the tower. The place has associations with Johnson. Uttoxeter had fairs, and its markets were important until about 1800. Market day, Wed. Pop. 5,361.

UXBRIDGE. Urban dist. of Middlesex. It is about 16 m. W. of London on the G.W. and Met. Rlys., and has tramway connexion with Shepherd's Bush. The Grand Union Canal runs here between two branches of the Colne. The 15th century church of S. Margaret was restored by Sir G. Scott in 1872. Other buildings include the market house, town hall, corn exchange, and assembly rooms. At the Crown, or Old Treaty House, in 1645, the abortive conference between 16 commissioners of Charles I and representatives of the Parliament took place. Pop. 12,919.

UXMAL. Ruined city of Mexico, in the N.W. of Yucatan. Situated 37 m. S. by W. of Mérida, it has many magnificent ruins, including one called the governor's palace, containing fine sculptures. See Maya.

UZBEGISTAN. Soviet republic of Central Asia. It was founded in 1924, and in 1925 joined the union of socialist soviet republics. It covers 131,400 sq. m. and has a pop. of 5,270,000. Samarkand is the capital. Other places of importance are Bokhara, Khiva, Kokand, and Tashkent. The name comes from the Uzbeks or Uzhegs, a people of Turkic stock.

UZZIAH OR **AZAR'AH.** King of Judah. Son of Amaziah (q.v.), whom he succeeded at the age of 16 years, he is said to have reigned 52 years. Uzziah restored the town of Elath, and when he became a leper his son Jotham acted as his representative (2 Kings 14 and 15; 2 Chron. 26).

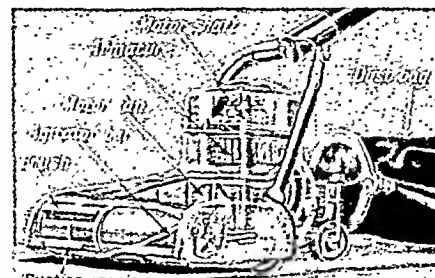
V. Twenty-second letter of the English and Latin alphabets, if it be regarded as distinct from U in the latter. It is a soft labial or lip-sound, corresponding to the hard F. In form it is a variant of U. In the Latin alphabet it fulfilled the double function of vowel and consonant in early times, but in a later age u became exclusively used as a vowel. Its sound is invariable, as in vat, love. See Alphabet: Phonetics.

VAAL, KAI GARIEP, OR **YELLOW RIVER.** River of S. Africa. It rises in the Drakensberg Mts. in the S.E. Transvaal and flows some 500 m. W. to the Orange river, of which it is the chief tributary. It forms the boundary between the Orange Free State and Transvaal.

VACCINATION (Lat. vacca, cow). Term popularly applied to protective inoculation against small pox. The human system having

once survived an attack of small pox, contains for some years an excess of protective substances rendering it immune from further attacks.

In 1721 Lady Mary Montagu introduced from Turkey the practice of inoculating into healthy individuals lymph from the rash in mild cases of actual small pox. In 1796 the modern vaccination was discovered. It was, before that time, well known among farmers and dairymen in the west of England that, through a scratch on the hand, cow pox was contracted while milking an infected animal. They found also that the eruption produced upon the hands and arms protected the milkers afterwards against small pox.



Suction opening.
Vacuum Cleaner. Phantom view of electric cleaner showing suction fan, agitator or beater, and brush
Courtesy of Hoover, Ltd.

Edward Jenner, having learned this fact, deliberately inoculated a boy with lymph from a case of cow pox and found, six weeks later, when he tried to inoculate him with virulent small pox, that the disease would not develop. This new vaccination became rapidly and widely popular. As a result, not only was the incidence of small pox remarkably reduced, but its severity also.

LEGISLATION. The first English legislation dates from the Vaccination Act of 1840, which prohibited variolation and recommended vaccination. A law of 1853 ordered that every child should be inoculated before reaching the age of three months. Acts of 1867 and 1887 amended and superseded these, and the age limit was raised to six months.

This legislation gave birth to the anti-vaccination movement, which, after 1867, especially in the Midlands, attained large proportions, many parents being prosecuted for failing to comply. In 1898 an Act relieved parents who declared they had a conscientious objection to vaccination from the necessity of having their children vaccinated. The relief was extended by an Act of 1907, but neither of these applies to Scotland or Northern Ireland. In the United Kingdom the National Anti-Vaccination League exists to promote the movement against vaccination. Its offices are at 25, Denison House, Vauxhall Bridge Road, London, S.W.

VACCINE. Emulsion of dead bacilli intended to be injected into the system for the treatment or prevention of disease. This method of treatment has now been applied to many infectious diseases, often with highly satisfactory results, one of the most striking instances being the immunity against typhoid acquired by this method. See Bacillus; Inoculation; Vaccination.

VACHELL, HORACE ANNESLEY (b. 1861). British novelist and dramatist. Born Oct. 30, 1861, he became an officer in the Rifle Brigade, but later took to literature. His novels include *The Shadowy Third*, 1902; *Brothers*, 1904; *The Hill*, 1905; *The Waters of Jordan*, 1908; *Quinney's*, 1914; *The Fourth Dimension*, 1920; *Quinney's Adventures*, 1924; *A Woman in Exile*, 1926; *Miss Torrobin's Experiment*, 1927; and *The Enchanted Garden*, 1929. A dramatised version of Quinney's was presented in 1915, and he has written a number of other plays, including *Plus Fours*.

VACUUM (Lat. empty). Strictly, a contained space that has been completely emptied of ponderable matter. It is not possible completely to empty such a space, and the term is applied in practice to the more or less exhausted state produced by the air pump. The piston air pump can only go on working while the air remaining in the vessel that is being exhausted has enough elasticity to lift the valves of the pump. Consequently the vacuum thus produced must always be incomplete. Mercurial air pumps, used in exhausting the bulbs of filament lamps, etc., can be made to produce a much more nearly perfect vacuum. Still higher degrees of exhaustion have been produced by the use of the molecular pump, in which a stream of mercury vapour carries away the particles of air or other gas.

The measurement of a vacuum is made by observation of the character of the electric discharge in it, or by the McLeod gauge. The latter measures the pressure of the vacuum by allowing mercury to enter. An electric discharge is ribbon-like at first, followed by a luminous glow, and a fluorescent appearance of the glass container, as the exhaustion becomes more complete. In a more perfect vacuum no discharge takes place.

VACUUM CLEANER. Mechanical device for the removal of dust and dirt from floors, walls, furniture, etc., by air suction. The three essentials of a vacuum cleaner are the apparatus for producing the vacuum, i.e. some form of air pump (usually worked by an electric motor), the separator, where the dust and dirt are retained from the sucked air; and the nozzle, which passes over the surface.

VACUUM FLASK. Glass vessel having a storage chamber or receptacle surrounded by a vacuum space. It is used for containing liquids for more or less lengthy periods without heat or cold being transmitted to them from their surroundings, or heat being dissipated by conduction and radiation.

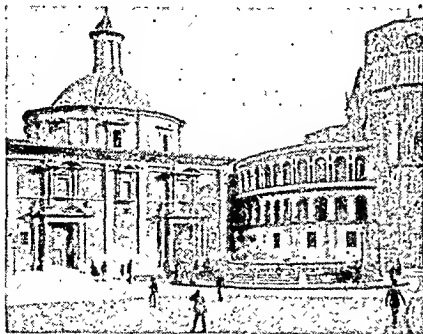
VACUUM TUBE. Glass tube made in various shapes, and filled with air or gases at pressures below that of the atmosphere. Wires fused through the ends project into the interior. If these wires be connected with the terminals of an induction coil, and charges of high-tension electricity be passed through the tube, the interior becomes luminous. The character and colour of the glow vary with the nature of the contents, the degree of rarefaction, and the shape and composition of the tube. Sir William Crookes, using very high vacua, discovered that rays from the cathode terminal of a tube, though invisible themselves, rendered the walls of the tube phosphorescent. Lenard subsequently proved that the rays could affect objects outside the tube. Röntgen in 1895 announced the discovery of cathode rays different from those observed by Crookes, as they could not be deflected by a magnet or prism. These are called X-rays (q.v.).

VAIR. In heraldry, fur, represented by small cup-like white and blue shields. These are placed in rows, the bases of the white resting on the bases of the blue. In a variant, known as counter-vair, the bases of one tincture are placed base to base. See Heraldry.

VALDES LEAL, JUAN DE (1630-91). Spanish painter. Born at Seville or Córdoba, in 1638 he went to Seville, and in 1663 became president of the new academy founded by Murillo. Valdes practised sculpture, engraving, and architecture with indifferent success. In the museum at Seville is a series of scenes by him from the Life of S. Ignatius. He died at Seville, Oct. 14, 1691.



Vacuum Tube. Typical Crookes electric tube



Valencia. Left, archiepiscopal palace, containing a famous library. Right, Cathedral of Our Lady

VALENCIA. City and seaport of Spain. It is 2½ m. from the mouth of the Guadalaviar, 185 m. E.S.E. of Madrid. Its outpost, El Grao, at the mouth of the river, is one of the best harbours of the east coast of Spain.

The cathedral of Our Lady, with a fine octagonal tower, El Miguelete, was commenced in 1262 on the site of a Roman temple. The churches of San Andrés and Corpus Christi are adorned with fine frescoes and paintings. The provincial museum of paintings occupies the former Convento del Carmen. The silk exchange, erected on the site of the Moorish Alcázar, is a glorious Gothic edifice. The Aduana, once a custom house, is now a tobacco factory. The bull ring is reputed the finest in Spain. There are several magnificent squares. The walls have been replaced by boulevards, but the watch towers are specimens of medieval fortifications. The university was founded in 1411. According to tradition the first printing press in Spain was established in Valencia in 1474. Pop. 269,700.

Valencia was at one time the capital of a small Moorish kingdom. This came into existence about 1020, and lasted until 1238, when it was conquered by the king of Aragon. Later it was incorporated with Castile.

VALENCIENNES. Town of France. It lies on the Scheldo, here joined by the Rhônelle, 20 m. by rly. E. of Douai, and is a rly. junction. The hôtel de ville has a fine façade, rebuilt 1867-68. The chief churches are Notre Dame de S. Cordon, 1850-64, and S. Géry, with modern restorations and tower. The 16th century Jesuit college is now a lycée. The museum has a collection of Flemish paintings and tapestries. Occupied by the Germans during the Great War, the town was retaken by Canadian troops, Nov. 4, 1918. Pop. 34,425.

The town gives its name to a variety of pillow lace. Originally made by hand at Valenciennes, it is now largely manufactured by machines in Nottingham.

VALENCY. Maximum combining power of a chemical element. The valency is expressed in relation to the number of hydrogen atoms with which one atom of another element can combine. For example, chlorine, bromine, and iodine combine with one and can replace one atom of hydrogen, these elements being called univalent or monads. When an element such as oxygen combines with two atoms of hydrogen it is termed bivalent or dyad, when with three atoms (e.g. nitrogen), trivalent or triad, and with four (e.g. carbon), quadrivalent or tetrad.

Other elements show higher valencies, the terms used being quinquivalent or pentad, sexivalent or hexad, septivalent or heptad, and octavalent or octad. Where an element such as argon does not combine with another element it is said to be non-valent.

VALENS, FLAVIUS (c. 328-378). Roman emperor of the East, 364-378. He was the younger brother of Valentinian I, who assigned to Valens the government of the

Eastern provinces. His reign was marked by fighting with the Persians and with the Goths. Valens let the Goths settle in Thrace, but at Adrianople, Aug. 9, 378, the Roman arms were completely defeated, and Valens disappeared. During his reign the Arian controversy raged fiercely. The emperor supported the Arians and persecuted orthodox Christians.

VALENTIA. Island of eo. Kerry, Irish Free State. Lying 3 m. S.W. of Cahirciveen, it is 7 m. in length and 3½ m. in breadth, more than half being uncultivated. It is separated from the mainland by Valentia Harbour, which is landlocked. Valentia is a terminus of the Anglo-American Telegraph Co.'s cable service. Pop. 1,600.

The Irish title of Viscount Valentia has been borne by the family of Annesley since 1621. Arthur, the 11th viscount (1843-1927), was a Unionist M.P., 1895-1917, and controller of the royal household, 1898-1905. In 1917 he was made a peer of the U.K. as Baron Annesley. His seat is Blethington Park, Oxford.

VALENTINE (Lat. Valentinus). Name of several saints. Two of the name, a priest and a bishop, are said to have been martyred near Rome on the same day, Feb. 14, about 270. The practice of sending love tokens on their festival, Feb. 14, seems to have been a survival of the Roman custom of boys drawing the names of girls by lot in honour of Juno Februalis at the Lupercalia about the same date. See St. Valentine's Day.



Valenciennes, France. The modern façade of the 17th century Hôtel de Ville in the Grand Place

VALENTINIAN Name of three Roman emperors. Valentinian I (321-375) was born at Pannonia, and rose to high rank in the Roman army. On his election by the troops as emperor he associated his brother Valens with himself in the government. The rebellion of Procopius was crushed in 366. Fighting against the Alamanni on the Rhine frontier kept Valentinian in Gaul for a great part of his reign. A ruler of considerable ability, he endeavoured to alleviate the condition of his subjects. He died Nov. 17, 375.

Valentinian II became joint emperor in 383, when only a child. His uneventful reign ended with his murder in 392. Valentinian III succeeded Honorius in 425. He reigned until he was killed in 455.

VALERIAN (Valeriana officinalis). Perennial herb of the order Valerianaceae, a native of Europe and Asia. The leaves are deeply cut into two rows of lance-shaped segments. The stem, from three to five feet in height, terminates in many clusters of small, pale pink, funnel-shaped flowers. The root-stock is used in medicine as an antispasmodic. In drying it develops a fetid odour, attractive alike to cats and rats.

Spur valerian, or red valerian (*Kentranthus ruber*) is a herb of the same order, native of Europe, W. Asia, and N. Africa. The lower part of the stem is woody, and from it erect, round, hollow branches are produced, with opposite lance-shaped, thick grey-green, undivided leaves.

VALERIAN (c. 190-266). Roman emperor. His full name was Publius Licinius Valerianus. A senator, and censor in 251, he was sent by the emperor Gallus against the upstart emperor Aemilianus on the Danube. But both Gallus and Aemilianus were murdered, and Valerian, who had been proclaimed emperor in Rhætia, was acknowledged by the senate. A good soldier and administrator, he deputed his son Gallienus to rule the west, and, after defeating the Goths, 257, he recovered Antioch from the invading Persians and pursued their king, Shapur I, to the Euphrates, but was captured near Edessa, 260, and spent the rest of his life in captivity.

VALERIUS FLACCUUS, GAIUS. Roman poet. Little is known of him, except that he was one of the 15 officials to whom the keeping of the Sibylline books was entrusted, and that he died young, about A.D. 90. He was the author of the *Argonautica*, an account of the voyage of the Argonauts (q.v.), in eight books, dedicated to the emperor Vespasian.

VALETTE, JEAN, PARISOT DE LA (1498-1568). Grand master of the knights of S. John of Jerusalem. A native of Toulouse, he entered the order as a young man, becoming grand master in 1557. His naval operations against the Turks led to their investment of Malta with a fleet of 150 vessels. De la Valette, with a force of 9,000 men, kept them at bay for five months, and when they withdrew their losses were over 20,000 men. He died Aug. 15, 1568. The name is sometimes spelled Vallette, and Valletta is named after him. See Valletta.

VALHALLA (Old Norse valhöll, hall of the slain). Odin's Hall in Asgard on the top of Bifröst. It was thatched with shields, hung with mailcoats, and lit with swords, and had 540 doors through each of which eight hundred champions marched to the last fight. In Valhalla Odin received dead warriors, who there refought their battles by day and feasted by night. See Odin.

Valhalla is the alternative name for the German hall of worthies near Ratisbon; it is also spelt Walhalla (q.v.).

VALKYRIE (Old Norse valkyrja, chooser of the slain). In Norse mythology, name for Odin's warrior maids, half human, half unearthly, who rode to battle over sea and through the air to choose the slain for Valhalla. They belong to the Viking age. The names of thirteen who lived in Vingolf, part of Valhalla, and carried the mead round at Odin's feasts, are recorded.

Valkyrie is the name given to three British yachts, owned by Lord Dunraven, who tried with them to win the America Cup, 1893-95. Valkyrie I competed in 1893, being beaten by the Vigilant. In 1894 she was sunk in the Firth of Clyde after colliding with another vessel. Valkyrie II visited the U.S.A. in 1894, and was also beaten by the Vigilant. Valkyrie III competed unsuccessfully in 1895.



Valerian. Leaves and flower clusters

VALLADOLID. City of Spain. Situated on the left bank of the Pisuerga river, 102 m. direct N.W. of Madrid, it is an important rly. junction, 150 m. by rly. from the capital. Beside the Plaza de Portugalte is the incomplete Renaissance cathedral, begun in 1585. The most interesting church is the Gothic Santa Maria la Antigua. Cardinal Torquemada remodelled in the 15th century the 13th century church of San Pablo, and the duke of Lerma

remodelled it two centuries later; in it the Cortes met frequently. The university, which dates from 1346, replaced an earlier foundation. The palace is now used by the provincial authorities. Valladolid was at one time the capital of Castile, and after the union of the kingdoms was the capital of Spain until 1560. Pop 78,819.



Valladolid, Spain. Façade of the former church of St. Gregory, built in 1466, now the municipal offices

VALLETTA OR VALETTA Capital of Malta. On a promontory on the N.E. coast of the island, it has a commodious harbour on each side, and the lighthouse and fort of St. Elmo at the extremity. Fortified as the chief British naval and coaling station in the Mediterranean Sea, and equipped with docks for naval and other vessels, it is a port of call on the Suez route to the Orient. The governor's residence (1573-77) was formerly the palace of the Knights Hospitallers of St. John. Other notable buildings are the palaces of the Maltese nobility, the university, library, and museum. Pop. 48,240. See Malta.

VALLEY. Depression in the earth's crust. Longitudinal valleys are the hollows between the upfolded mountain ranges, parallel to the mts., and they usually contain a large river. Similar valleys occur between upfolded mts. and the crustal plateau which has resisted upheaval. The Indo-Gangetic valley between the upfolded Himalayas and the Deccan plateau is the largest example of this type. Denudation modifies longitudinal valleys and loads the floor with alluvium; it also carves out valleys down mountain slopes and across plateaux. In S. England the valleys of the Severn and the Thames show the results of denudation, which has carved away the softer rocks and left the more resistant ridges of the Cotswolds, Downs, and Chilterns, which confine the drainage system.

VALLEYFIELD. Town of Quebec, Canada. It is near the head of Beauharnois Canal, and is served by the C.N. Ry. It has textile factories, paper and flour mills. Pop. 9,215.

VALLEY FORGE. Village of Pennsylvania, U.S.A. It stands on the Schuylkill river, 20 m. from Philadelphia. In its neighbourhood Washington and his army passed the winter of 1777-78, suffering greatly from cold, sickness, and starvation. The tract so occupied is now a public park containing relics of the camp and several memorials.

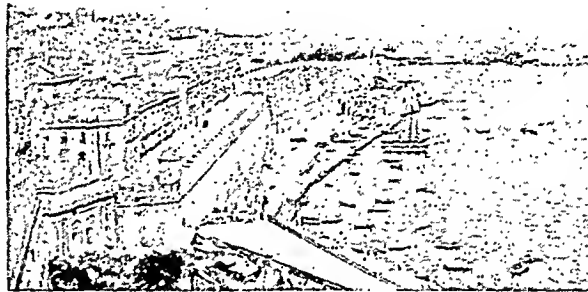
VALLOMBROSA. Pleasure resort of Italy. It is 21 m. from Florence, and stands amid the forests of the Apennines, at an alt. of 3,140 ft., and is reached by a cable rly. Here, about 1030, was founded a Benedictine abbey, which was destroyed in 1527. It was rebuilt, but was suppressed, and in 1870 the buildings were taken for a school of forestry. Here is a meteorological station, founded in 1654. The beauty of the valley inspired Milton's lines.

VALMY. Village of France. In the dept. of Marne, it is 6 m. W. of Ste. Menesbould, on the main road to Châlons, and is the scene of the battle between the French and the Prussians, Sept. 20, 1792. The latter entered French territory on Aug. 12, and on Sept. 20 attacked the French under Kellermann at Valmy, and were defeated.

VALOIS. Name of a famous French family, members of which were kings from 1328 to 1589. The name comes from Vez, a town in the dept. of the Oise, the dist. around which was called Valois. It became crown property under Philip Augustus. In 1285 it was given to Charles, son of Philip III, and a later Philip, the son of Charles, became king of France as Philip VI in 1328. He and his successors are therefore known as the Valois kings. The direct line ruled until 1498, when the branch of Orléans in the person of Louis XII succeeded. The extinction of the royal house of Valois came with the death of Henry III in 1589. See Bourbon.

VALONIA. Acorn cup of *Quercus acgilops*, the Turkish or Greek oak. It contains a high percentage of tannic acid, and is extensively used in the preparation of leather, especially the higher grades. The name is derived from Valona, where the acorns are prepared.

VALPARAISO. City and seaport of Chile. The principal seaport on the W. coast of S. America, it stands on the Bay of Valparaíso, 116 m. by rly. W.N.W. of Santiago. The bay is sheltered on three sides, but is open to the N., and the town is built on the slopes of a range of hills about 1,500 ft. alt. On the S. side of the bay is the finest thoroughfare in the town, the Avenida de las Delicias.



Valletta, Malta. Grand harbour and quays, looking towards Fort Ricasoli; on the left are the old town walls Cribb, Southsea

The western part contains the port, where there are a large number of public buildings and warehouses bordering the docks and quays. Among the principal buildings are the custom house, government house, post office, city hall, exchange, prisons, hospitals, theatres, and police barracks. There are a natural history museum, a naval school and other naval establishments. In the city are several fine squares adorned with monuments. Valparaíso is a port of call for several steamship lines, and there is rly. communication with Buenos Aires through a tunnel in the Andes. Founded in 1536 by Juan de Saavedra, Valparaíso was captured by Drake in 1578 and by Hawkins in 1596. Pop. 286,947.

VALUER. One who appraises for another property or estate, real or personal, generally land or houses for purposes of letting, selling, or mortgaging, for compensation for dilapidation, or compulsory acquisition, or assessing for taxes, rates, etc. A valuer is responsible for loss caused by his ignorance or negligence. He is sometimes called an appraiser, and must take out a licence, which costs £2 a year. See Auctioneer.

VALVE. Device for controlling the passage of liquids and gases through pipes and other channels. Automatic valves, operated by the fluid itself, include pump valves of all

kinds, safety valves, and reducing valves. Mechanically operated valves, the movements of which have a definite time-relation to the movements of other parts, independently of the fluid, are used in hydraulic, steam, gas, and oil engines to govern the admission of the working fluid to the cylinders and its expulsion therefrom. Stop valves, regulating valves, etc., are worked, directly or indirectly, by hand. Large water passages are closed by sluice valves. See Pump; Safety Valve; Steam Engine; Thermionic Valve.

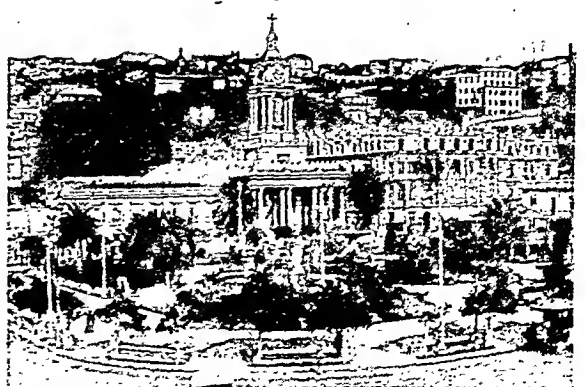
Applied to music, a valve is a piston applied to certain wind instruments, whereby the speaking length is increased, and consequently the range of available sounds extended. Used separately, the first valve lowers the pitch by a tone, the second by a semitone, the third by a tone and a half, and the fourth by two tones and a half. See Cornet; Horn, etc.

VAMPIRE (Serh. vampir). Nocturnal demon of the folklore of Slavonic and other peoples. It is manifested in various forms, the most usual being that of the spirit of the recently dead, or a demon occupying the dead body, returning to suck the blood of the living. The ways of destroying the vampire were either to drive a stake through the body, or to decapitate and burn it. Bram Stoker's *Dracula*, 1897, is a rendering of the legend.

VAMPIRE BAT. Name given to the members of a family of bats (Desmodidae).

Found in Central and S. America, they live by sucking the blood of animals. There are two genera, *Desmodus* and *Diphylla*, with one species each. Both the arrangement of their teeth and the structure of the stomach have been specialised for blood sucking. By a bite with their sharp teeth these small bats remove a very thin slice of skin from their victim and then suck the blood. The large vampyrus, or phyllostoma, of Brazil, and several other bats, formerly thought to be blood suckers, are harmless. See Bat.

VAN. City of Turkey. Standing on the E. shore of Lake Van, it is one of the chief centres of E. Asia Minor. One of its most interesting features is a hill, on the rock face of which



Valparaíso, Chile. Plaza de la Victoria and one of the principal churches

are cuneiform inscriptions of the Urartu (Ararat) kings, who were strong enough to contend with the Assyrians. Pop. 30,000.

In 1895 and 1896 Van was the scene of Armenian massacres, and during the Great War it suffered terribly, being taken and retaken by the Turks and the Russians.

Lake Van is a sheet of salt water, without visible outlet. Its length is about 75 m. from E. to W., its width from N. to S. varying from 20 to 40 m. Its elevation is 5,200 ft.

VANADIUM. Metallic element. Its chemical symbol is V, atomic weight 50.96, atomic number 23. It is a light grey or white metal with a melting point about 1,750° C. The metal was discovered by Del Rio in 1801 and occurs only in combination in a number of rare minerals, including vanadinite, mottamite, etc. Vanadinite, the commonest, is found in Spain and South America. Vanadium forms a number of oxides, a suboxide, monoxide, dioxide, trioxide, and a pentoxide. The lower oxides are metallic powders. The metal has been extensively used in the manufacture of certain high tensile steels.



Irene Vanbrugh,
British actress

VANBRUGH, IRENE (h. 1872). British actress. Daughter of Prebendary Barnes of Exeter, she was born Dec. 2, 1872, and made her first London appearance as the White Queen in Alice in Wonderland at the Gaiety Theatre, 1888. In 1899 she scored her first great success as Sophie Fulgarney in The Gay Lord Quex. Later she appeared on the variety stage as Kate in Barrie's The Twelve Pound Look, and subsequently in short plays and sketches with her husband, Dion Boucicault, whom she had married in 1901.

Her elder sister, Violet, was born June 11, 1867, and first appeared at Toole's Theatre in 1886. In 1891 she was engaged by Irving and scored a success as Anne Boleyn in Henry VIII. In 1893 she joined Daly's company, and in 1894 appeared at the Royalty Theatre. She was especially successful in the part of Queen Katharine in Tree's production of Henry VIII, 1910. Pron. Van-bra.

VANBRUGH, SIR JOHN (1664-1726). English dramatist and architect. Born in London, he studied architecture in France, became a captain in the army, and was arrested as a spy in France and imprisoned in the Bastille. He wrote ten comedies, as grossly indecent as other dramatic productions of the period, but undeniably witty. In his later years Vanbrugh rose to fame as an architect. His finest work is Castle Howard, and his largest mansion



Sir John Vanbrugh,
English dramatist

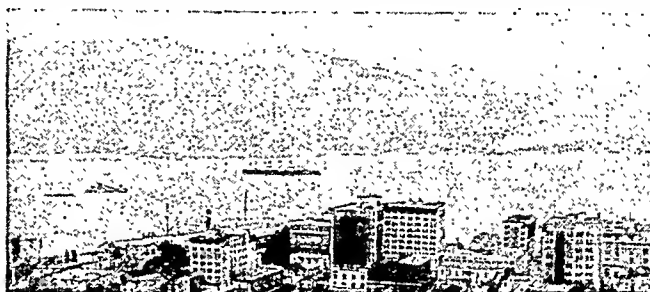
is Blenheim (q.v.). He designed the Haymarket Theatre, 1705, and was its first lessee and manager. He was knighted in 1714, and held the appointment of controller of the royal works. He died March 26, 1726.

VAN BUREN, MARTIN (1782-1862). American president. Born at Kinderhook, New York, Dec. 5, 1782, of Dutch parentage, he became a lawyer, practicing successfully at Hudson and later at Albany. From 1815-19 he was attorney-general of the state, and in 1821 he was elected to the senate, and in

1829 he became governor of New York, being almost immediately made secretary of state by Andrew Jackson. For a few months in 1831-32 he was minister to Great Britain, but in 1832 he was chosen vice-president. For four years he acted as Jackson's lieutenant, and in 1836 he became president. He only held office for one term, four years, as he was defeated in 1840, but he remained a figure in public life until his death, July 24, 1862.

VANCE, ALFRED GLENVILLE (c. 1838-88). British comedian, known as the Great Vance. Born in London, his real name being Alfred Peck Stevens, he became a touring actor, and later opened a dancing school at Liverpool. He again toured as a character singer before appearing on the variety stage at the Metropolitan and South London music halls, where his humorous cockney songs soon became popular. He died Dec. 26, 1888.

VANCOUVER. Canadian island in the Pacific Ocean, part of the province of British Columbia. Off the W. coast of British Columbia.



It has an area of about 13,500 sq. m. It is separated from the U.S.A. by the Strait of Juan de Fuca, and from the mainland of British Columbia by Queen Charlotte Sound and the Strait of Georgia. Victoria and Esquimalt are ports, Nanaimo and Wellington centres of coal mining. Vancouver surveyed the coast in 1792, and Victoria, the first settlement in British Columbia, was staked out in 1842. Pop. 130,000.

VANCOUVER. City and seaport of British Columbia, Canada. It stands on a magnificent harbour on the southern side of Burrard Inlet, on the mainland of British Columbia, 1,480 m. from Winnipeg. The buildings have nearly all been erected since a fire in 1886. The chief industry is shipping, for which there are spacious docks. From here vessels go to the Pacific ports and across to China, Japan, and Australia. It is also the terminus of the C.P. Rly. and is served by the national system. Other industries are sugar refineries, flour mills, saw mills, and shipbuilding. Owing largely to the opening of the Panama Canal, the trade has increased enormously. Improvements include more shipping facilities and elevators for the grain shipped here. Cheap and abundant power has attracted new industries. At Point Grey are the buildings of the university of British Columbia. Pop. 344,000.

North Vancouver, a separate municipality, stands on Burrard Inlet, just opposite Vancouver city, with which it is connected by a ferry. It is surrounded by beautiful scenery, and this, with its position on the coast and facilities for shooting and fishing, makes it a popular place. Pop. 13,492.



Martin Van Buren,
American statesman

VANDAL. Teutonic people of the E. Germanic stock. Having moved from the shores of the Baltic to the middle Danube, they migrated W. At the

beginning of the 5th century they poured into Gaul, and in 409 made their way into Spain. Thither they were soon followed by the Visigoths, who destroyed half of them and penned the rest into the district known as Andalusia. About 428 they left Spain for N. Africa, where they established a powerful dominion, and ruled for a hundred years. Gaiseric carried out the conquest between 429 and 439, and sacked Rome in 455. Their pirate fleets terrorised the Mediterranean, but in 533 Justinian dispatched Belisarius (q.v.) against them, and the Vandal race was blotted out.



Cornelius Vanderbilt,
American capitalist

VANDERBILT. Name of an American family. Its founder, Cornelius Vanderbilt, was born at Staten Island, May 27, 1794. He began a ferry to New York, and in a few years was the owner of a large fleet of harbour craft, among which was the first steamboat to run between New York and New Brunswick, 1817. His interests were organized in 1824 into a company.



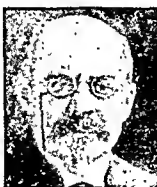
Vancouver. 1. Burrard Inlet, looking towards N. Vancouver. 2. Hastings St., with Dominion Bank Building on right

1. Canadian Pacific Rly.
2. Agent General for British Columbia

He died Jan. 4, 1877, leaving a fortune of over £20,000,000. By his will the Vanderbilt University was founded in Nashville.

His son, William H. Vanderbilt (1821-85), joined him in business and left an enormous fortune. He had four sons, of whom the best known were Cornelius and William Kissam.

VANDERVELDE, ÉMILE (h. 1866). Belgian politician. Born in a suburb of Brussels, Jan. 25, 1866, he studied law at the university there. He early joined the socialist movement, was a conspicuous member of the International, and entered the Belgian Chamber in 1894, soon becoming chairman of the socialist group in parliament. Along with his party he took up a patriotic attitude in the Great War, going into exile with the parliament during 1914-18. He



Émile Vandervelde,
Belgian socialist leader

was a representative of Belgium at the Peace Conference in Paris, 1919, and in 1920 became minister of justice. In 1925-26 he was minister of foreign affairs. He was made professor of political economy at Brussels in 1924.

VAN DER WEYDEN, ROGER (1400-64) Flemish painter. Born at Tournai, he studied under his father, a sculptor, and Robert Campin, and worked at Tournai and Brussels, visiting Italy and Germany. His painting is ascetic in character: one may cite his Deposition, in the Eusebian, the Last Judgement at Beaune, and the Mater Dolorosa and Ecce Homo in the National Gallery, London. He died in Brussels, June 18, 1464. See Charles the Bold.

VAN DE VELDE, ADRIAN (1639-72) Dutch painter. Born at Amsterdam, the son of Willem Van de Velde the elder, he studied under his father, and under Wynants, Wouverman, and Paul Potter. He excelled in landscapes and coast scenes. There are examples of his art in the Rijks Museum, Amsterdam, and the National Gallery, London. He died Jan. 21, 1672.

His brother, Willem Van de Velde (1633-1707), studied under his father and de Vlieger. He settled at Greenwich about 1676, and established the highest reputation as a painter of sea battles and other marine subjects. He died at Greenwich, April 6, 1707.

VAN DIEMEN'S LAND. Island off S.E. Australia, since 1853 known as Tasmania (q.v.). Discovered by A. J. Tasman, 1642, it was named by him after Anton van Diemen (d. 1645), governor of the Dutch East Indies.

VAN DYCK, SIR ANTHONY (1599-1641). Flemish painter. Born at Antwerp, March 22, 1599, he studied under Hendrik van Balen, and about 1618 entered Rubens' studio as an assistant. He had embarked on portraiture with considerable success before his first visit to England in 1620.

The artist returned to Antwerp early in 1621, and later in the same year went to Genoa, thence to Rome, Mantua, Palermo, and Brescia, and back to Genoa, where he remained till 1627. After working at Antwerp and The Hague, he was induced by the offer of a pension to settle in England.

In 1640, Rubens having died, Van Dyck hurried to Antwerp in order to secure the patronage of the Spanish king. His demands, however, were too high, and he went on to Paris, only to find that his objective, the decoration of the Louvre, had been given to Nicholas Poussin. He returned to London, seriously ill, died Dec. 9, 1641, and was buried in St. Paul's.

Van Dyck's paintings are distributed throughout Europe, but most of his English portraits are at Windsor Castle and mansions in England. His output was enormous. He painted Charles I, so it is said, 36 times. See illus. pp. 360, 361, 391, 507, 587, 690, 699, 721, 752, 800, 847, 863, 1007, 1178, 1274, 1287, etc.

VANE. Originally a flag or banner. It was then used for a slip of wood or metal placed at the top of a spire or other elevation to show how the wind blows. It is thus used for a weathercock, and for one of the blades that turn a windmill. See Weathercock.

VANE, SIR HENRY (1613-62). English politician, known as the younger Vane. He was born in May, 1613, and was educated at Westminster School and Magdalen Hall, Oxford. In 1635, having adopted the religious views of the Puritans, he went to Massachusetts, of which colony he was made governor. Returning to England in 1637, Vane entered Parliament, and was knighted in 1640; as one of the parliamentary chiefs he was concerned in the political moves of the next few years,

succeeding Pym as leader in 1643. About 1648, however, he separated himself from his colleagues, and consequently had no part in the king's death, but after it he returned to active political life. In 1662 he was tried for treason, and on June 14 was executed.

His father, Sir Henry Vane (1589-1654), was secretary of state in 1640-41, and until that time was one of the leading advisers of Charles I. A grandson was made Baron Barnard. See Cleveland, Duchess of.

VANGUARD. British battleship. She was lost as the result of an internal explosion, on the night of July 9, 1917, at Scapa Flow. Her nominal complement was 724, and there were only 97 survivors. The Vanguard was launched in 1909, being one of the three battleships of the St. Vincent class. She was 500 ft. long and displaced 19,250 tons. The first Vanguard carried the flag of Sir W. Wynter against the Spanish Armada. Another Vanguard was the flagship of General Monk in 1653, and a Vanguard carried Nelson's flag at the battle of the Nile.

VANILLA (*Vanilla planifolia*) Perennial climbing herb of the order Orchidaceae. A native of Central America, it has large, fleshy, oblong leaves, and green or white and green flowers, succeeded by slender seed-pods, about six inches long, which are utilised for flavouring chocolate, liqueurs, etc. Several allied species are used for the same purpose, but are not equal to *V. planifolia*.



Vanilla. Flowers and leaves of the herb

VANLOO, JEAN BAPTISTE (1684-1745). French painter. Born at Aix, Provence, Jan. 14, 1684, he went to Paris in 1719, becoming an Academician in 1731. He visited England in 1738, where he became a fashionable portrait painter, executing, among others, portraits of Colley Cibber and Sir Robert Walpole. He died at Aix, Dec. 19, 1745. (See Cibber, C.)

His brother, Charles André Vanloo (1705-65), was born at Nice, Feb. 15, 1705, and after studying in Rome, settled in Paris, 1734. He became a member of the Academy, 1735, and died July 15, 1765. His Marriage of the Virgin is in the Louvre. See illus. pp. 411, 624.

VARANGIAN (Gr. Barangoi, from Old Norse vaeringjar, followers, retainers). Name applied to the bands of Norsemen who organized the Russian state in the 9th century, and were gradually absorbed by the Slavs.

The Varangian guard, a mercenary force containing many Englishmen, was maintained at Constantinople by the East Roman emperors. It originated with a body of troops obtained in 988 by Basil II from Vladimir, prince of Kiev. See Russia.

VARDAR. River of the Balkans. It rises in the S. of Serbia, and flows N.E. to the watershed on the other side of which the S. Morava has its source. It then bends S.E. towards Uskub (Skoplje), and, after a S.E. course, falls into the gulf of Salonica, about 10 m. W. of the city of that name. Its length is 200 m. With its tributaries, the Bregalnitsa and the Tehera, it figured in the first and second Balkan Wars and in the Great War. In the last mentioned the river gave its name to two battles fought Oct.-Dec., 1915, and Sept. 15-30, 1918.



Sir Henry Vane, English politician. After Lely

VARDON, HARRY (b. 1870) Professional golfer. Born in Jersey, Vardon was the winner of the Open Championship in 1896, 1898, 1903, and 1911, and won the American championship in 1900. He played for England v. Scotland in 1903-7, 1909, and 1910, and won The News of the World tournament in 1912. With J. H. Taylor as partner, Vardon defeated J. Braid and A. Herd in international foursomes at St. Andrews, Troon, St. Anne's, and Deal in 1905. He is the author of *The Complete Golfer*, 1905, and *How to Play Golf*, 1912. See Golf.



Harry Vardon. Professional golfer

VARIATION. Biological term signifying any departure from the usual fixed characters of a species of plant or animal. Certain variations may occur as the result of the action of environment, but these are almost always the result of injuries or disease, and do not affect the offspring of the next generation. Natural or spontaneous variations, on the other hand, occur all round the specific average, and form the material upon which natural selection works. They take their origin in the protoplasm of germ-cells, which is capable of originating variations in different directions. If these confer an advantage upon the fully developed individual in his struggle for existence, he is naturally selected for survival. See Evolution; Heredity; Mendelism.

MUSICAL VARIATIONS. These are the ornamentation and development of a given theme. In the 16th century composers began to evince a desire to elaborate their music by devices of figuration and imitation, which reached its culmination in such forms as the ground bass, the chaconne, and the passacaglia. In these the theme was either untouched, or was so little altered as to be readily recognizable throughout, but the variations of Beethoven, Mendelssohn, and others subsequently displayed a tendency to regard the theme as affording opportunities of development, so that the interest should be cumulative.

Varicose (Lat. varix, dilated). Word meaning something dilated or enlarged. It is used for veins of this kind in the leg. See Vein.

VARIOMETER. Type of variable inductance used to tune the aerial of a broadcast receiving apparatus. It consists of two coils in series, one free to rotate within the other. By revolving the inner coil the amount of inductance is varied. See Inductance.

VARNISH TREE (*Melanorrhoea usitatissima*). Evergreen tree of the order Anacardiaceae. A native of the East Indies, it grows to a height of 100 ft., and has thick, oval, alternate leaves.

The red flowers are produced in clusters from the base of the leaves. The timber is hard, heavy, and dark-coloured, one of several kinds known as lignum vitae. The sap of the varnish tree is used as a lacquer for various domestic articles. See Lacquer.



Varnish Tree. Spray of leaves. Inset, flower cluster and, top, single flower

VARUS, PUBLIUS QUINTILIUS (d. A.D. 9). Roman general. Appointed to the chief command in Germany, by his vexatious administration he roused the Germans to revolt. Under the leadership of Arminius the Germans caught the Romans in the swamps of the Teutoburger Wald, three legions were annihilated, and Varus committed suicide.

VASARI, GIORGIO (1511-74). Italian author and architect. Born at Arezzo, July 30, 1511, he studied under Andrea del Sarto and Baccio Bandinelli at Florence. He was architect of the Palazzo Vecchio and the enlarged Magistrati of the Uffizi Gallery (q.v.), at Florence, and the painter of several large mural paintings at Florence and Rome, and is famous for his *Lives of the Painters*, 1550. He died at Florence, June 27, 1574.

VASCO DA GAMA (c. 1460-1524). Portuguese navigator. Born at Sines, of an ancient noble family, he took to the sea, and was given command of the expedition sent by Emanuel I to discover a sea route to India, round the S. coast of Africa. His fleet of four ships sailed from the Tagus, July 9, 1497, rounded the Cape, and erept up the E. shores of Africa as far as Malindi, whence, going E., they sighted the Malabar coast at Calicut, May 20, 1498. In 1502 he sailed again to the East with ten vessels, being commissioned to take vengeance for the murder of the crews left at Calicut by P. A. Cabral. Da Gama sacked the town, explored the coast as far as Cochin, and returned home with much merchandise. Appointed viceroy of India, he died of fever three months later, at Cochin, Dec. 24, 1524. See Belem.



Vasco da Gama,
Portuguese navigator
British Museum

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VATICAN. State of Europe ruled by the pope and also the palace in which that potentate lives. The state was created by treaty with Italy in 1929 and is thus the successor of the state, called the States of the Church, over which the popes ruled before 1870. It covers 108 acres in Rome, and in addition 13 buildings in the city are regarded as belonging to it. Foreign powers have their representatives at the Vatican, which has its own officials, railway station, stamps, flag, etc.

The buildings are on a low hill in Rome, immediately to the N. of S. Peter's. They consist of a vast irregular group of palaces, courts, chapels, and offices, covering 134 acres, with a large private garden. The existing buildings were begun about 1450 by Nicholas V, who reconstructed the older palace on a grand scale. Additions were made by later popes, the last important building, the Braccio Nuovo, having been erected under Pius VII. The Vatican palace is said to contain about 7,000 rooms.

The Apostolic Residence is a lofty building surrounding a quadrangle and overlooking the piazza of S. Peter. It contains the private apartments of the pope. E. of it are the barracks of the Swiss Guards. The great N. wing of the Vatican, a quarter of a mile long, consists of the Belvedere, a villa built by

Innocent VIII, and two parallel galleries connecting it with the old palace. This wing houses the library and most of the art collections. The library contains some 34,000 MSS. and about 250,000 printed books. See Rome; St. Peter's: Sistine Chapel.

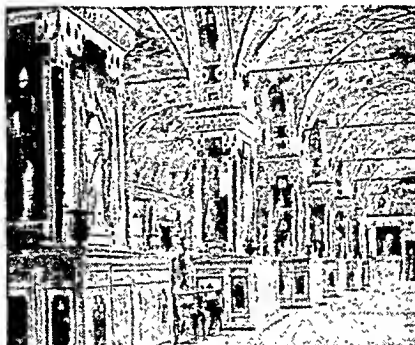
THE VATICAN COUNCIL. This was summoned by Pius IX in 1868. There were over 700 prelates present, including 49 cardinals, 121 archbishops, and 479 bishops. Several sessions were devoted to restating theological points before the real subject of the council was reached, but on July 18, 1870, the definition was made of papal infallibility (q.v.).

VAUBAN, SEBASTIEN LE PRESTRE DE (1633-1707). French soldier and engineer. Born in a Burgundian village, now in the dept. of Yonne, he entered the army about 1650. In charge of various siege operations during the war with Spain, after the peace of 1659 he turned his attention to fortress work in France.

Vauban's fame rests on the work he did for France during the wars of Louis XIV. About forty fortresses were taken under his direction, while he was responsible for the defences of almost every fortress on the French borders, the number being put at over 100. He was a marshal when he died, March 30, 1707.



Sebastien de Vauban,
French soldier
After Lebrun



Vatican. Great Hall of the library, which contains priceless MSS. and books

VAUDEVILLE. In drama, a light and amusing play in which dialogue is intermingled with songs, and almost identical with musical comedy. The term originated in the 15th century with Olivier Basselin of the valleys of the Vire, in Normandy, the author of a number of drinking and love songs, which he circulated under the title *Lais des Vaux de Vire*, of which Vaudeville is a corruption.

The Vaudeville Theatre, on the N. side of the Strand, London, was opened in 1870.

VAUGHAN, CHARLES JOHN (1816-97). British divine. Born at Leicester, he was educated at Rugby and Trinity College, Cambridge, where he was bracketed senior classic. In 1841, being a fellow of Trinity, he was ordained in the Church of England and passed three years as vicar of S. Martin's, Leicester, where his father, Rev. E. T. Vaughan, had preceded him. From 1844-59 Vaughan was headmaster of Harrow, and from 1860-69 was vicar of Doncaster. In 1869 he was chosen master of the Temple, and in 1879 dean of Llandaff. He died Oct. 16, 1897.

VAUGHAN, HENRY (1622-95). Welsh poet, called the Silurist from his native district, the country of the Silures. Born at Newton-on-Usk, April 17, 1622, he studied law, and became a physician at Brecon. A poet of the metaphysical school, he was influenced by Donne, Carew, and Herbert, whose work, *The*

Temple, inspired his volume of devotional poems, *Silex Scintillans*, 1650, which in turn influenced Wordsworth. He died April 23, 1695.

VAUGHAN, HERBERT ALFRED (1832-1903). British cardinal. Born at Gloucester, April 15, 1832, he was the eldest of eight sons of John F. Vaughan of Courtfield, Herefordshire. He was educated for the priesthood at Stonyhurst College, and then in Belgium, Paris, and Rome. Ordained in 1854, he became vice-principal of S. Edmund's College, Ware, and was from 1869 head of a missionary college at Mill Hill before becoming bishop of Salford in 1872. In 1892 he became archbishop of Westminster, and in 1893 a cardinal. He died June 19, 1903. His great work was the erection of the cathedral at Westminster (q.v.).

Vaughan's brother, Bernard Vaughan (1847-1922), joined the Society of Jesus and made a reputation as a preacher in Salford and then in London. He died Oct. 31, 1922.

VAUGHAN, KATE (1852-1903). British actress, whose real name was Catherine Candelon. Born in London, she made her debut as a dancer in 1870, first appearing on the stage as an actress in 1872. From 1876-83 she was acting in burlesque at The Gaiety, and in 1886 organized, with H. B. Conway, the Vaughan-Conway comedy company. On account of her failing health she went to Australia, 1896, and then to South Africa, 1902. She died at Johannesburg, Feb. 21, 1903.



Kate Vaughan,
British actress
Downey

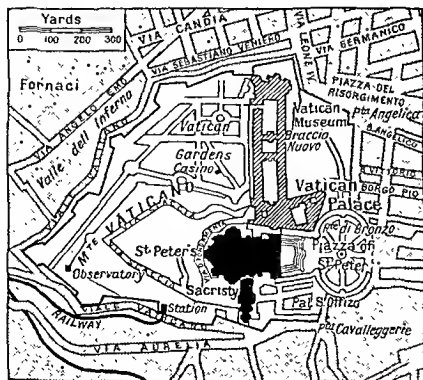
VAULT (Lat. *volvere*, to roll). Literally, an arched roof. It is used also for a chamber with such a roof and, as these are often underground, it has come to be used for cellars where wine is stored.

Architecturally, the earliest form was the barrel vault, shaped like the upper section of a rly. tunnel. This was invented by the Persians, and employed later by the Romans, who discovered how to construct the groined vaults by intersecting two barrel vaults at right angles to each other, the groin being the angle formed by the meeting of the two surfaces. The groined vault was used in Norman building until the introduction of the ribbed vault. See Architecture; Fan Tracery; Gothic Architecture.

VAUXHALL. District of London. On the Surrey side of the Thames, W. and S.W. of Kennington Oval, with a station on the Southern Rly., it is in the bor. of Lambeth. Vauxhall became famous for its gardens, a popular resort. Laid out in Charles II's time, they were finally closed July 25, 1859. Vauxhall Bridge, connecting with Millbank, was rebuilt in 1906.

VEDAS (Skt. *veda*, knowledge, cf. Eng. wit). Oldest sacred literature of the Hindus. Written in Sanskrit, they are regarded as having been the work of poets who lived between 2000 and 1000 B.C. They are divided into the Rig-Veda, Yajur-Veda, a collection of prayers, Sama-Veda, hymns for sacrificial occasions, and Atharva-Veda. See Hinduism; Rig-Veda; Sanskrit.

VEDDA. Primitive people in Ceylon. They are scattered over an area E. of the Mahawale Ganga river. Of Caucasoid stock, they are dark-brown, wavy-haired, long-limbed and long-headed. They consist of forest Veddas, still preserving the primitive



Vatican. Plan of the new European state under the rule of the Pope since 1929

culture. villag. Veddas, who have intermarried with the Sinhalese and practise rude agriculture: and coast Veddas.

VEDRENNE, JOHN EUGENE (1867-1930) British stage manager. He was born July 13, 1867, and, leaving a commercial career, became business manager to various London theatres. In 1904 he took the Court Theatre and, in partnership with Granville Barker (q.v.), made many striking productions, including plays of Euripides, and modern writers, such as G. B. Shaw. The partnership ended in 1907, and Vedrenne became associated with Lewis Waller at The Lyric. He was with Dennis Eadie at The Royalty, 1911-19, and then became lessee of the Little Theatre. He died Feb 12, 1930.

VEDRINES, JULES (1882-1919). French airman. Born at St. Denis, near Épinay-sur-Seine, he became a telegraph boy, then turned his attention to mechanics.

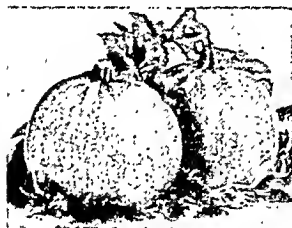
In 1910 he obtained a post as mechanic to Robert Loraine (q.v.), learnt to fly, and within a year was France's best known airman. Among his early remarkable achievements were his winning £2,000 in the circuit of Europe and £4,000 for a flight from Paris to Madrid, May, 1911. Védérines was killed when flying, April 21, 1919.



Jules Védérines,
French airman

VEGETABLE. In its narrow, everyday use, word indicating any herb that is cultivated specially for table use in whole or part, such as turnip (root), cabbage (leaves), broccoli (flowers), peas and beans (fruit). In its widest sense it includes all living things that are not animals—trees, shrubs, herbs, ferns, mosses, seaweeds, fungi, and the microscopic diatoms. See Botany; Plant; Potato. etc.

VEGETABLE MARROW (Cucurbita pepo). Annual creeping and trailing plant bearing edible fruits, of the order Cucurbitaceae. It grows in any ordinary rich soil. The flowers, in which the sexes are separate, are best fertilised by means of a camel-hair brush. Marrows are raised from seed sown in a greenhouse temperature in spring and planted out in the summer. See Gourd.



Vegetable Marrow. Large edible gourds for which the trailing plant is cultivated

By courtesy of Sutton & Sons

VEGETARIANISM. Name given to the movement which aims at making vegetable foods the sole diet of human beings. It began about 1850, and its followers abstain from eating the flesh of animals and birds. Some cat fish, but others do not, while strict vegetarians abstain from all food which comes from animals, such as eggs, milk, butter, and cheese.

One reason for vegetarianism is the dislike of inflicting pain, but it is also advocated as providing a more nourishing and economical diet. It is also claimed that a vegetarian diet makes persons less liable to certain diseases, e.g. cancer. Akin to the vegetarians are the fruitarians, who maintain life solely on fruit.

VEIL (Old Fr. voile, from Lat. velum, cloth). Article of feminine dress, used as a covering for the head, especially the face. In most Mahomedan countries, but not among the nomadic Arabs, custom requires the veiling of women in public or in the presence of men.

The Turkish yashmak, when worn, veils the face from below the eyes.

In the R.C. Church a woman admitted to a religious order takes the white veil of reception on entering her novitiate. When she is fully professed and takes the life vows, she receives the veil of profession, usually black, though in some orders it is white. See Nun.

VEIN Vessel by which venous blood—i.e. blood which has parted with its oxygen, passed through the capillaries, and picked up waste material from the tissues—is conveyed back to the heart. The walls of veins are thinner than those of the arteries, but, like the latter, consist of three coats. They differ also from the arteries in possessing valves, which are so disposed as to prevent the blood from flowing in the reverse direction. The veins from the legs and lower part of the body all pass eventually into a main trunk, the inferior vena cava, and those from the arms, head, and upper part of the body into another main trunk, the superior vena cava, both of which open into the right auricle of the heart.

VARICOSE VEINS. Varicose veins is a condition in which the vessels become lengthened, dilated, and tortuous. The superficial veins of the leg are those most often affected. The affection is due to weakness in the vessel wall, associated with any condition which throws stress on the vein or impedes the circulation, such as the prolonged standing of shop assistants, severe exertion, as in athletic exercises, or the pressure of tight garters.

VEIN. In geology, a mineral deposit in fissures and cracks of rocks. Such mineral ores have usually been deposited from solutions, and may be metallic or non-metallic; as a general rule, the two kinds are found in veins together. The non-valuable mineral deposit in a vein is known as the gangue. Veins are sources of many of the valuable metals, and vary in size from the almost invisible to several hundred feet in thickness.

VELAZQUEZ, DIEGO RODRIGUEZ DE SILVA Y (1599-1660). Spanish painter. Born at Seville, June 6, 1599, he passed his early days as an artist with Francisco Herrera. Settling in Madrid in 1623, he there painted a portrait which introduced him to the notice of the king. In the same year he painted a portrait of Philip IV, the first of a very long series which he painted of that king at every period of his life. In 1629 he visited Italy, and he was there again in 1649, when his main object was to collect pictures and casts from the antique. On this occasion he painted his celebrated portrait of Pope Innocent X. He died in Madrid, Aug. 6, 1660.

The work of Velazquez can only be properly studied in the collections in Madrid, where there are at least 46 undoubted pictures. Other fine works are in London, in the National Gallery, notably his only important nude, Venus and Cupid (the Rokeby Venus), and at Apsley House, the Wallace Collection, and Dulwich Gallery. Several of his finest portraits



D. R. de Silva y Velazquez,
Spanish painter
Self-portrait in the
Uffizi Gallery, Florence

are in Vienna, the Louvre, in Russia, Holland, and Germany, but without proper study of his subject groups, especially the Surrender of Breda, The Maids of Honour, and The Tapestry Weavers at Madrid, the greatness of Velazquez cannot be completely understood. See Philip IV; Seville; Wallace Collection.

VELOCITY. Rate at which a point or particle changes its position. The change in the position of a particle must have both magnitude and direction. It may vary both in regard to its magnitude and to its direction, and its magnitude may be constant while its direction continually varies. If a particle moves in a straight line and so preserves a constant direction, and passes over equal spaces in successive equal times, its linear velocity is said to be constant. Angular velocity is angular speed round an axis. See p 156.

VENDETTA (Lat. vindicta, vengeance). Form of blood feud by which the privilege and duty of avenging the death of a murdered person rests primarily upon the next of kin. The term is specifically applied to the practice in the southern districts of Italy, and still more particularly to the Corsican vendetta. This last was at its climax during the closing decades of the 18th century, when about 7,000 murders are said to have been committed in the island.

VENDÔME. Town of France. It lies on the Loir, 42 m. by rly. N.E. of Tours, and is a rly. junction. There is trade in agricultural produce, and gloves and paper are made. The church of the Trinity, formerly an abbey church, dates from the 12-15th centuries. There are remains of a 10th century château. Pop. 9,000.

The county of Vendôme was raised to a duchy by Francis I in 1515 in favour of Charles de Bourbon (d. 1536). The duchy has been held, among others, by César de Bourbon (1594-1665), natural son of Henry IV, known as a general in the Huguenot wars, 1621, and by his grandson, Louis Joseph. The line became extinct in 1727.

VENDÔME, LOUIS JOSEPH, DUC DE (1654-1712). French soldier. Born in Paris, July 1, 1654, he was descended from Henry IV and Gabrielle d'Estrees. His military career began in the Dutch campaign of 1672, and he subsequently fought in Germany, Alsace, the Low Countries, and Italy. In 1695 he commanded the army in Catalonia, and captured Barcelona in 1697. During the War of the Spanish Succession he was first employed in Italy, and in 1706 defeated the Austrians at Calcinato. He was transferred to the Low Countries in the same year, but after losing the battle of Oudenarde, 1708, was relieved of his command. He retrieved his reputation in Spain, where he was sent in 1710 to assist Philip V against the British and the Austrians, defeating the former at Brihuega and Starhenberg and the latter at Villa Viciosa. He died June 11, 1712.



Duc de Vendôme,
French soldier

VENEREAL DISEASES. Group of diseases which are almost always conveyed from one person to another during sexual intercourse. They comprise gonorrhoea, syphilis, and the much less serious soft chancre. Innocent wives may suffer, and children may be born with the disease already present. In the United Kingdom methods for prevention and treatment are advocated by the Society for the Prevention of Venereal Disease, 143, Harley Street, London, W.1. Free treatment and advice, under strict secrecy, can now be obtained at certain medical centres in most large towns. See Gonorrhoea; Syphilis.

VENETIAN GLASS. Fine variety of glassware made in Venice. It appears to have been first made in the city craftsmen by their skill produced articles of great beauty, and Venetian glass took on its characteristic elegance and lightness. The island of Murano became the headquarters of the industry, and there it still flourishes, having been revived in the 19th century. See Glass.

VENEZUELA. Republic of S. America, a member of the League of Nations. It borders the Caribbean Sea, with Colombia on the W., Brazil on the S., British Guiana and the Atlantic Ocean on the E. Important towns include Caracás, the capital, Maracaibo, and Valencia. The area is 393,874 sq. m. Pop. 3,053,497.

The chief physical features of the republic are the chain of the Andes and its E. extension in mountainous and hilly country along the Caribbean Sea, and the river Orinoco, with its many tributaries. South of the mountains to the Orinoco, and also over the whole S.W. of the republic, stretch the llanos, vast grassy plains, resembling in their general formation the Argentine Pampa. S. of the Orinoco up to the borders of Brazil and British Guiana, and through part of the Amazon river system, stretches a vast region of tropical forest which covers more than half the entire country. Of the many lakes Maracaibo is the largest.

The chief agricultural products are coffee, cocoa, sugar cane, maize, cotton, and beans. Rubber, balata, tonka beans, vanilla, and other tropical products are worked in the forest area. Cattle, sheep, and other livestock are reared. The mineral resources include petroleum, asphalt, gold, copper, and coal. The pearl fisheries off Margarita and other islands are valuable. Exports include coffee, petroleum, cocoa, sugar, hides, gold, asphalt, and pearls. There are some 650 m. of rly.

Venezuela became an independent republic in 1830, when it seceded from Colombia. It remained neutral in the Great War. By the federal constitution, amended in 1929, the United States of Venezuela consist of 20 autonomous and politically equal states, each with its president and legislature, besides the

federal district and two territories administered by the central executive. The central or federal government consists of a president holding office for seven years, with his cabinet ministers, a senate in which the states are equally represented, and a chamber of deputies elected according to the population. See Bolivar, S.

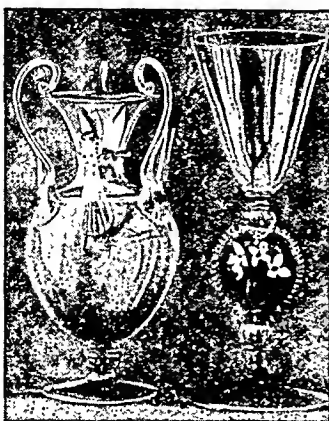
VENICE (Ital. Venezia). City, seaport, and naval station of Italy. Situated at the head of the Adriatic, built mainly on piles, it is in the Venetian Lagoon. The city is connected with the mainland by a rly. viaduct across the lagoon. The Victor Emmanuel canal of approach was opened in 1922. Pop. 258,381.

The three main thoroughfares are waterways the Canale della Giudecca, separating the main town from the island of Giudecca; the open stretch of the Canale di San Marco, dividing the island of S. Giorgio Maggiore from the public gardens, arsenal, doge's palace, etc.; and the Grand Canal, issuing from the junction of these two at the point occupied by

destroying in its fall the exquisite Loggetta dei Cavalieri, now repaired. At the E. end is grouped the most wonderful mingling of Byzantine and Gothic architecture in Europe, the blue-dialled clock tower, built 1499, the cathedral of S. Mark, and the doge's palace. The Bridge of Sighs connects the judgement halls of the palace with the prisons for ordinary criminals.

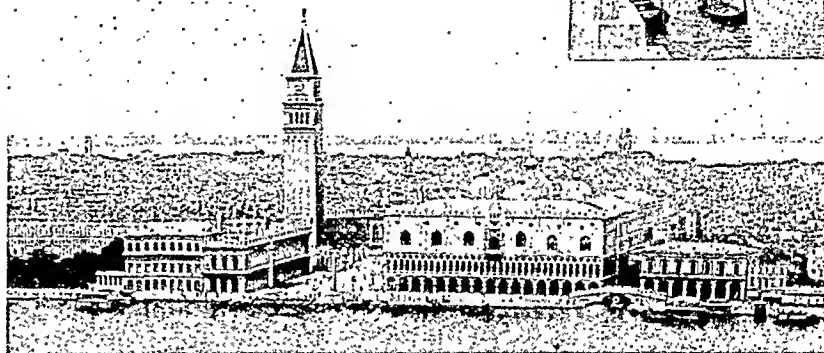
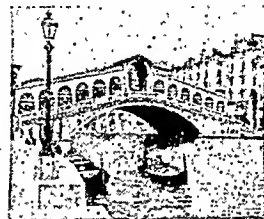
Venice was one of a dozen settlements on the marshy islands which stretch along the N.W. shores of the Adriatic from the Piave to the Adige. Protected by tortuous channels through dangerous shoals, she became the great mart for exchange of goods between the East and N.W. Europe, a republic whose maritime supremacy endured for centuries.

Owing allegiance to the Eastern empire, Venice obtained commercial concessions there. She supplied goods and transport to the Crusaders and pilgrims, and the doge, Enrico Dandolo, diverted the fourth Crusade to the conquest of Constantinople, 1204. Out of her share of the spoil Venice obtained the Morea, many islands of the Aegean, and much of the mainland. She purchased Crete and Salonica, and held fast to Zara and other Dalmatian towns. In 1508 the European powers com-



Venetian Glass. Specimens of white glass, made in the 16th century. Enclosed in the stem of the wine glass, right, are orange flowers in coloured glass.

By courtesy of the Trustees, British Museum



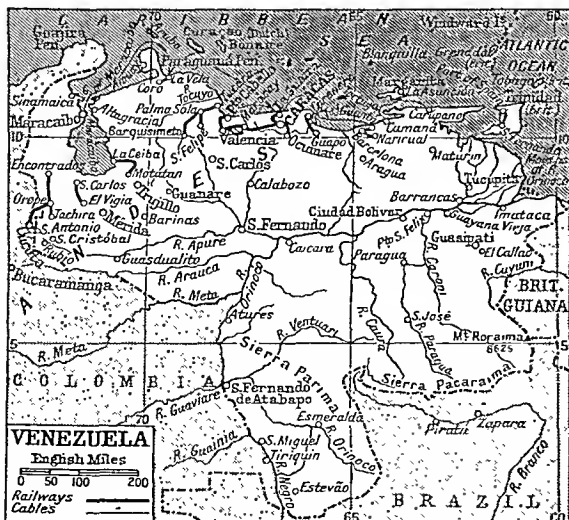
Venice. The city from S. Giorgio Maggiore, showing the piazzetta of S. Mark, the campanile and library on one side and the Doge's palace on the other. Above, Rialto Bridge across the Grand Canal.

the custom house and the 17th century church of S. Maria della Salute. Winding in the shape of an S, the Grand Canal divides the city into two almost equal parts. Over 150 smaller canals intersect the city. The canals are navigated by gondolas. Steamboats ply through the Grand Canal to the Lido, the popular bathing station, and to the neighbouring islands, Murano, Burano, Chioggia, Torcello, etc. The Merceria, connecting the Piazza with the Rialto, is the main street.

The heart of modern Venice is the Piazza of S. Mark. Approached from the network of bridged canals behind it, this marble-paved square opens out into a blaze of light and life and colour. The approach from the water is through the Piazzetta, which is flanked W. by the royal palace, begun in 1582, and the old library, a beautiful building by Sansovino, 1536, and E. by the doge's palace. At the entrance to the Piazza rises the Campanile, reconstructed after the original watch-tower of the republic collapsed in 1902,

hined against Venice in the league of Cambrai; yet at the treaty of Noyon, 1516, she emerged with little loss of territory. She had now reached the zenith of her power. But the wars with Genoa and the European powers had sapped her vigour, and she was paralysed by the discovery of the Cape route to the Indies, which diverted the E. trade to Lisbon. The capture of Constantinople by the Ottoman Turks, 1453, struck her another deadly blow. Venice was cut off from her trade with the Levant and through Egypt. Her decline was very gradual and very brilliant. During the 16th and 17th centuries Venetian art reached its greatest perfection, and the republic was almost the sole bulwark of Europe against the Turks. But in spite of such brilliant episodes as Lepanto, 1571, she was gradually stripped by Turkey of all her possessions in the Archipelago and the Morea.

In 1797 the republic fell before Napoleon, who assigned it first to Austria and then to his kingdom of Italy, 1805. Austrian rule was restored by the congress of Vienna, 1815. The hated oppressor was expelled in 1848, when the republic of S. Mark was proclaimed. The Austrian Radetzky reduced it in 1848-49, and Austria ruled it until compelled to cede Venetia to Italy in 1866. The gulf of Venice is the N. portion of the Adriatic Sea between Istria and the Venetian lagoons; its N.E. corner forms the gulf of Trieste. See Arcade; Campanile; Doge; Gondola; St. Mark's.



Venezuela. Map of the South American republic

VENIZELOS, ELEUTHERIOS (b. 1864). Greek politician. Born in Crete, Aug. 23, 1864, he was educated at the university of Athens,



E. Venizelos,
Greek statesman
Henri Manuel

after which he returned home and practised as a lawyer. In 1897 he was elected a member of the legislature, and he took a leading part in the rising of 1896-97. In 1898 he became head of the executive, and in 1906 he led the movement that ended in the withdrawal of the high commissioner, Prince George, from the island.

In 1907, invited to Athens by the military league, he began his connexion with Greek politics. He was made prime minister in 1910, and as such he led the country through the two Balkan wars.

On the outbreak of the Great War Venizelos wished Greece to join the Allies, but the king decided otherwise, and in 1915 the premier was dismissed. He went to Crete and then set up, in the interests of the Allies, a government at Salonica. In 1917 he returned to Greece and forced Constantine to abdicate in favour of his son Alexander. Again prime minister, he brought Greece into the war on the side of the Allies and represented her at the peace conference at Versailles. He resigned in November, 1920, but was again premier for a few weeks in 1924. He was then exiled and went to Paris, but was soon allowed to return. In 1928 he again became prime minister, and he was still holding that position in 1930.

VENNACHAR. Loch of Perthshire, Scotland. About 4 m. long, it is formed by the river Teith, and lies 2 m. W. of Callander, amid beautiful scenery. Ben Ledi overlooks it, and it figures in Scott's *The Lady of the Lake*.

VENTILATION. Maintenance of a sufficient air renewal within confined spaces to meet the needs of health, efficiency, and comfort.

Carbonic acid gas (CO_2) renders air less fit for respiration by hindering the combination of oxygen with the carbon of the blood. Moreover, carbonic acid produced by respiration is accompanied by other injurious impurities. Ordinarily pure air contains about 4 parts in 10,000 of CO_2 . If more than 10 parts be present, discomfort may be caused. Ventilation aims at keeping the proportion of CO_2 down to 6 or 8 parts, by introducing a continuous supply of fresh air to dilute the contaminated air. A human adult expires enough CO_2 to add about 2 parts in 10,000 to 3,000 c. ft. of air. Therefore if this quantity of fresh air be introduced per hour into the room in which a person is, vitiation will not exceed 6 parts in 10,000.

In Great Britain the ventilation of ordinary living rooms depends mainly upon open windows and the draught induced by open fires and stoves. Large buildings require special provision for the introduction of fresh air in adequate quantities. The best results are obtained with mechanically driven fans. See p.588.

VENTNOR. Watery place and urban dist. of the Isle of Wight. Situated 12 m. from Ryde, the town is built in the sides of a cliff. Its mild climate attracts many invalids, and here is the royal national hospital for consumptives. Near are St. Boniface Down and Bonchurch. The latter has a Norman church; in the churchyard of its new church A. C. Swinburne is buried. Steephill Castle is also adjacent to Ventnor, as is the Undercliff. In Sept., 1928, there was a great landslide between Ventnor and Blackgang. Pop. 6,063.

VENTRILOQUISM (Lat. *venter*, stomach; *loqui*, to speak). Art of making the human voice appear to proceed from a distance, or from some person or object other than the actual speaker. Ventriloquism has often been described as speaking in the stomach. This

is not the fact, but some contraction of the stomach muscles does take place in speaking with closed lips. Making a voice appear to proceed from a distance or from images was a trick practised at ancient oracles, especially in Egypt. While much skill and practice are required in the control of the voice by a clever ventriloquist, a great portion of the illusion is brought about by suggestion, the performer subtly indicating to his audience the direction or position whence the voice is supposed to come. See *Acoustics*; *Sound*; *Voice*.

VENUS. In Roman mythology, originally the goddess of gardens, and subsequently identified by the Romans with the Greek



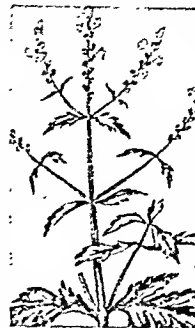
Venus of Milo, in the Louvre, Paris. The statue dates from the 2nd cent., and was discovered at Melos in 1820

those of the moon, and is the brightest of all the planets at times. It is in size and density similar to the earth, and probably has an atmosphere of similar constitution. The transits of Venus across the surface of the sun take place in June and December. The June transits run in pairs separated by eight-year intervals, as do the December transits. The period from one pair of transits to the next is over 100 years. The first recorded transit of Venus was in 1639, observed by J. Horrocks. See *Astronomy*; *Planet*.

VENUS'S FLY-TRAP (*Dionaea muscipula*). Perennial insectivorous herb of the order Droseraceae. A native of N. Carolina and Florida, it has a somewhat bulbous root-stock, from which all the leaves proceed direct. Each leaf has a long stalk which is winged on each side, the blade of the leaf forming two nearly half-circular lobes, whose outer margins are fringed with sharp, rigid spikes. In the centre of each lobe stand three sensitive filaments, and when either of these is touched by an insect, the lobes immediately shut together, the fringe of spikes interlocking like the teeth of a rat gin, thus entrapping the insect.

VENUS'S LOOKING GLASS (*Legousia hybrida*). Annual herb of the order Campanulaceae, a native of Europe and N. Africa. It has small, oval or spoon-shaped leaves, and tubular flowers, blue inside and lilac outside.

VERA CRUZ. Port of Mexico. On the bay of Campeche, 265 m. E.S.E. of Mexico City, it has a spacious and secure harbour. Coffee, ores, tobacco, sugar, and rubber are the leading exports. Pop. 54,225.



Verbena. Leaves and flower spikes

Enrope, N. Africa, and W. Asia, growing in dry, waste ground. It is a downy perennial.

VERDI, GIUSEPPE (1813-1901). Italian composer. Born at Roncole, Parma, Oct. 9, 1813, he began his studies at the Milan conservatory. In 1839 his first opera, *Oberto*, was produced, and was followed three years later by *Nabucco*. With the production of *I Lombardi*, 1843, Verdi's reputation as the leading Italian composer was established, and his fame became world-wide with the appearance of *Rigoletto*, 1851, and *Il Trovatore* and *La Traviata*, both in 1852. *Un Ballo in Maschera*, 1859, and *La Forza del Destino*, 1862, enhanced his fame, and in *Aida*, 1871, written for the khedive Ismail Pasha, he produced another masterpiece. In 1887, *Otello*, technically one of his best works, was produced, and with *Falstaff*, 1893, Verdi closed his active career. In 1898 he was endowed, at Milan, a home for old and invalid musicians, devoting £40,000 to that purpose. He died at Milan, Jan. 27, 1901.

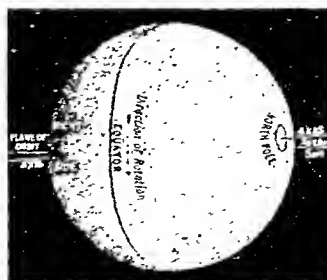


Giuseppe Verdi,
Italian composer

VERDICT (Lat. *vere*, truly; *dictum*, spoken). In law, the finding of a jury as declared to a judge. A verdict is either general or special. A general verdict is where the jury determines the case in favour of one party or the other. If there be more than one issue to be tried, the jury may find some of them in favour of one, and some of the other party.

A special verdict is one in which the jury finds certain facts, generally in answer to written questions put by the judge. These questions and answers constitute a special verdict, and on them the judge must apply the law, and give judgement for plaintiff or defendant accordingly. Special verdicts are of rare occurrence in criminal cases.

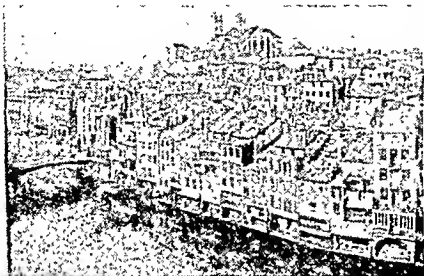
In Scotland a verdict goes by the majority, but in England it must be unanimous. In Scotland, also, in a criminal case, a jury may find not proven, meaning thereby that they are not satisfied of the innocence of the prisoner, but neither are they convinced of his guilt. See *Jury*; *Trial*.



Venus. Diagram showing the relative position of the planet's axis to its plane or orbit to the sun, according to W. H. Pickering

From a drawing by Serrien Bolton, F.R.A.S.

VERDIGRIS. Mixture of the three basic acetates of copper used as a pigment, and in dyeing and calico printing. Verdigris is prepared at Grenoble and Montpellier in France, by acting on sheets of copper with the residues from the wine factories. In from ten to twenty days the copper plates become covered with green crystals of verdigris, the variety prepared in this way being known as blue verdigris. Green verdigris is made in England by placing cloths moistened with acetic acid on copper plates. Pron. verdigreece.



Verdun. General view of the town and the cathedral from the right bank of the Meuse

VERDUN. Town of France. It lies on the hilly banks of the Meuse, 30 m. N.N.E. of Bar-le-Duc. It is the seat of a bishop, and after 1870 became a fortress, one of the main defences of the French E. frontier.

Verdun suffered severely in the Great War. The roof of the cathedral of Notre Dame, a building markedly Rhenish in character, was destroyed during a bombardment in 1917. The Porte Chaussée, a bridge gate dating from the 15th century, was little damaged. The citadel, occupying the site of the abbey of S. Vanne, founded in the 10th century, was a favourite target of the German artillery. Many of the old houses rising steeply from the river bank were demolished, 1916-17, and the hôtel de ville also suffered. The town received the cross of the Legion of Honour, the Croix de Guerre, the British Military Cross, and other Allied war decorations, and has been adopted by London. Near Fort Douaumont (q.v.) is a memorial erected over the "Trench of Bayonets," marking the place where a French regiment died in defence of Verdun, being buried alive when the trench gave way. Pop. 14,700.

VERDUN, BATTLES OF, 1916-17. The Germans attacked at Verdun to anticipate the Allied offensive of 1916. On the morning of Feb. 21, 1916, the German artillery heavily shelled the French front east of the Meuse and from the river to Ornes, and German infantry captured Haumont Wood. Next day the French had to yield the village of Haumont and Caures Wood, and on the 23rd Herbebois Wood, and their troops E. and S.E. of Verdun, on the Woivre front, were withdrawn. On Feb. 25 Pétain took command at Verdun, on which day alarm was caused by the fall of

Fort Douaumont and the strong work of Hardaumont. French reserves were rushed to the scene, and, after desperate fighting, the front N. of Verdun was temporarily secured by the French on a line from Vacherauville, S. of Douaumont, to Damloup. The Germans had gained about 5 m. in depth, but they were still $\frac{3}{4}$ m. from Verdun.

On Mar. 4 a great German attack opened W. of the Meuse, and on Mar. 6 the French lost Forges and Regnéville. On Mar. 9 a powerful German attack was delivered on both sides of the Meuse, but was broken by Pétain, except at Vaux village, which the Germans carried, and on the Mort Homme, where they established themselves. On the 10th the French were forced off the summit of the Mort Homme. Early in May the Germans began a terrific offensive to clear the latter and to gain its chief height, Hill 304. After days of fierce fighting they established themselves on Hill 304, were flung off it by the French on May 7, and in the end recovered it. Fort Vaux fell to the Germans on June 8, after a memorable defence by the French.

On June 23 the Germans began an attack, the object of which was to seize Fort Souville and break in on Verdun. Advancing with 50 battalions they took Thiaumont redoubt and entered Fleury, but failed to carry Fort Souville. By this time the guns had opened on the Somme and the German pressure at Verdun slackened. Nivelle, who was now in command, held the Germans as tightly as possible, in that way assisting the Allies at the Somme. On Oct. 24 Mangin struck a tremendous blow in the Douaumont region, Fort Douaumont being stormed by Moroccan troops. This great French success caused the Germans to evacuate Fort Vaux, and on Nov. 5 the French re-occupied Damloup and its fort. By Dec. 18 the battle closed with the re-establishment of the French front E. of the Meuse almost as it stood in Feb. before the opening of the offensive. During the fighting in this year the German loss was 328,500 and the French loss 348,300.

In Aug., 1917, the French renewed operations on both sides of the Meuse for the clearance of the Mort Homme, Côte de l'Oie, and Côte du Talou, with complete success. Hill 304 was finally secured, with nearly 8,000 prisoners. In all, in this battle, which closed on Sept. 2, the French took over 10,000 prisoners and more than 100 guns. No fighting of importance took place in the Verdun section until the final Allied offensives in the autumn of 1918. See Mangin; Nivelle; Pétain; Somme.

VERDUN. City of Quebec, Canada. It stands on the island of Montreal, adjoining the city of that name, of which it is a residential suburb. Pop. 46,477

VERE. Famous English family. They came from Ver, in Normandy, and in the 12th century, in England, one of them secured the hereditary office of lord great chamberlain and another the earldom of Oxford. With occasional intervals, due to political troubles, they

held the office until the death of the 18th earl in 1625, and the title until the death of the last male of the line, Aubrey, the 20th earl, in 1703. Their chief seat was Castle Hedingham, in Essex, and they had large estates in that county. Two members of the family, Sir Francis Vere (1560-1609) and Sir Horace Vere (1565-1635), distinguished themselves as soldiers. Sir Francis commanded the English forces in the Netherlands and then wrote his Commentaries. Sir Horace succeeded his brother in 1604 as leader in the Netherlands, and in 1630 took a force into Germany to aid Frederick, elector palatine.

VERE, SIR AUBREY DE (1788-1846). Irish poet. Born Aug. 28, 1788, eldest son of Sir Vere Hunt, of Curragh Chase, co. Limerick, a collateral descendant of the 15th earl of Oxford, he was educated at Harrow, succeeded to his father's baronetcy in 1818, and assumed the name of De Vere in 1832. His first literary work was a dramatic poem on Julian the Apostate, 1822. It was followed by Irish and other poems, a volume of sonnets, and a drama with Mary Tudor as its central figure, published posthumously in 1847. He died July 5, 1846.

His son, Aubrey Thomas Hunt de Vere (1814-1902), was educated at Trinity College, Dublin, and in 1857 became a Roman Catholic. Among his poems are *The Search after Prosperine*, 1843; *The Sisters*, 1861; *St. Peter's Chains*, 1888; and two poetical dramas, *Alexander the Great*, 1874, and *St. Thomas of Canterbury*, 1876. He died Jan. 20, 1902.

VEREENING. Town of the Transvaal. It stands on the Vaal river, 49 m. by rail S. of Johannesburg. A barrage holds up the river water, which is used for irrigation. Coal is mined, and there are electric power works, iron smelters, and brick and tile works. Pop. (white) 703.

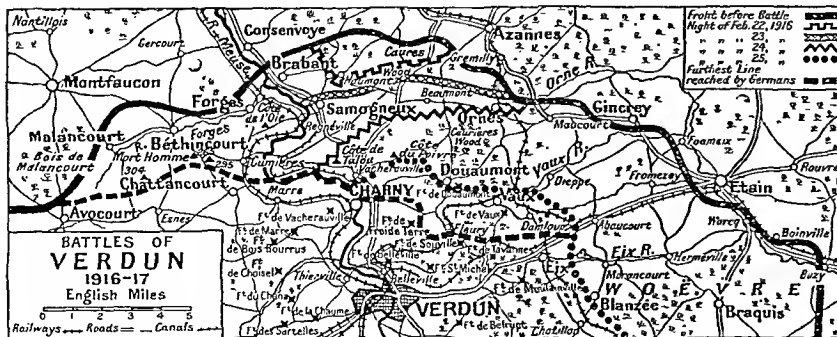
The treaty of Vereeniging was signed between Great Britain and the representatives of the two Boer republics, the Transvaal and Orange Free State, May 31, 1902. The terms included the annexation of the republics; all in arms to surrender; and all who took an oath of allegiance to the king to be returned to their homes. £3,000,000 was given to the Boers as compensation for the destruction of their farms, and the Dutch language was allowed in the schools and law courts. Great Britain undertook to grant a civil administration to the two colonies at an early date, and to respect the liberty and property of the Dutch. See South African War.

VERESHCHAGIN, VASILII (1842-1904). Russian painter. Born at Liubets (Novgorod), he studied for the navy, but in 1860 he entered the St. Petersburg Academy. In 1867 he accompanied Kauffmann in his expedition to Turkistan, and was present at the defence of Samarkand, and in 1877 he took part in the Russo-Turkish War. He also visited India, Syria, Palestine, and China. During the Russo-Japanese War he was killed on board Makaroff's flagship, when the latter was destroyed by the Japanese on April 13, 1904. Pron. Veresh-chagin.



Vasilii Vereshchagin, Russian painter

VERHAEREN, ÉMILE (1855-1916). Belgian poet. Born at St. Amand, near Antwerp, May 21, 1855, he was educated at Ghent, and studied law at Louvain University. There, as founder of the review, *La Semaine*, he showed his poetic gifts, and he was a leader of the literary revival in Belgium centring in *La Jeune Belgique*. He published his first book of verse, *Les Flamandes*, 1883. Other volumes include *Les Moines*, 1886; *Les Soirs*, 1888; *Les Villes Tentaculaires*, 1896; *Toute la*



Verdun. Map of the area over which the battles of 1916-17 took place, notable for some of the most determined fighting of the World War

Flandre, 1904-11; *Les Rhythmes Souverains*, 1910; and poems inspired by the Great War. Verhaeren was accidentally killed in Rouen rly. station, Nov. 27, 1916. He was in many ways the most distinctive and powerful of modern Belgian writers, excelling in his pictures of his native Flanders.



Émile Verhaeren,
Belgian poet

VERLAINE, PAUL (1844-96). French poet. He was born at Metz, March 30, 1844. After a short period as a clerk, he began publishing poems influenced by Baudelaire, which won him fame among those who came to be known as the Decadents. Owing to the part taken by him during the Commune, 1871, he went into exile in England. In 1874 he published his *Romanesques sans Paroles*. He went to Belgium, where he was in prison for two years, became a Roman Catholic, and earned a living as a teacher in London.

In 1881 Verlaine published a volume of tender religious poems, reflecting his new spirit, *La Sagesse*; this was followed, in 1884, by a volume of prose criticism. Later works included *Amour*, 1888; *Parallèlement*, typifying the duality of the poet in strange alternations of verses on sin and repentance, 1889; *Bonheur*, 1891; *Dédicaces*, 1894; and *Confessions*, 1895. He died Jan. 8, 1896.



Paul Verlaine,
French poet

VERMEER OR VAN DER MEER, JOHANNES (1632-75). Dutch painter. Born at Delft, he studied under Carel Fabritius, joined the Delft guild of painters in 1653, and died at Delft. His few extant works include *The Proposal*, in the Dresden Gallery; *A Young Lady at the Virginals*, in the National Gallery, London; and *The Letter Reader*, in the Rijks Museum, Amsterdam.

VERMICELLI (Ital. little worms). Italian food manufactured from a wheaten paste such as is used for macaroni, and pressed out into thin threads resembling worms. It is used chiefly in soups and puddings.

VERMILION. Variety of mercuric sulphide used as a pigment. It is prepared by subliming the black sulphide, which is obtained by heating sulphur with mercury in an iron pan. The sublimation process is usually carried out in clay retorts. Another process, the wet process, is more economical, and is becoming more widely used in consequence. Vermilion is one of the permanent pigments, a brilliant scarlet in colour, and possessing great body and weight.

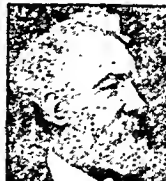
VERMONT. State of the U.S.A. One of the New England states, its area is 9,564 sq. m. Vermont derives its name from the Green Mts., which extend throughout its length. The Connecticut, the boundary with New Hampshire, is the only river of importance. Part of the W. frontier is marked by Lake Champlain, in which are several islands belonging to the state. Vermont is noted for its butter, cheese, and maple sugar, and produces about one-half the marble of the U.S.A., besides slate and granite. The forests provide much lumber. Higher education is provided at the university of Vermont and elsewhere. There are some 1,500 m. of rlys. Montpelier is the capital. Burlington and Rutland are other towns. Pop. 352,428.

VERMOUTH. Liqueur manufactured in or near Turin and in France. It is made from alcoholised white wine, aromatised with wormwood (Ger. *Wermuth*), gentian, oranges,

angelica, etc., and then sweetened. French vermouth, made by a complicated process of fortification from White Herault wines, is "dry," and contains some 17 p.c. of alcohol. Italian vermouth has slightly more alcohol, and in Italy is usually drunk with aerated water. Vermouth is one of the lighter liqueurs. Pron. Vair-moot.

VERNAL GRASS (*Anthoxanthum odoratum*). Perennial pasture grass of the order Gramineae. A native of Europe, N. Asia, and N. Africa, it has a creeping root-stock and many erect stems. The leaves are flat and hairy. The flower cluster is oval and spike-like. There are two stamens in each flower, with large yellow or purple anthers. The plant gives off the characteristic odour of new-mown hay. The name is due to its early flowering, April to June.

VERNE, JULES (1828-1905). French author. Born at Nantes, Feb. 8, 1828, he early turned to literary work, and soon found his special vein in the romance based on marvellous adventure. He made good use of scientific knowledge, invented extensions of it, and was successful in giving an appearance of verisimilitude to the wildest flights of his fancy. Nearly all of his books have been translated into English, some of the more notable of them being *Five Weeks in a Balloon*, 1870; *The English at the North Pole*, 1870; *Twenty Thousand Leagues Under the Sea*, 1870; *Around the World in Eighty Days*, 1873; *The Mysterious Island*, 1875; and *From the Earth to the Moon*. Died March 24, 1905.



Jules Verne,
French author

VERNET, ANTOINE CHARLES HORACE (1758-1835). French painter, usually known as Carle Vernet. Born at Bordeaux, Aug. 14, 1758, he studied the art of painting under his father and Lépicié. After a visit to Italy he settled in Paris, and in 1788 was admitted to the Academy. He was an exceptional painter of horses, and his subjects included contemporary battle pictures, portraits, humorous genre, and landscapes. He died in Paris, Nov. 17, 1835.

Vernet's father, Claude Joseph Vernet (1714-89), was best known for his series of paintings of the seaports of France, and the family tradition was carried on by Emile Jean Horace Vernet (1789-1863), a son of Carle Vernet, who made his name as a painter of military subjects.

VERNEY, SIR EDMUND (1590-1642). English courtier. Member of an old Buckinghamshire family, he was educated at Oxford, served in the Netherlands, and travelled in France and Italy. Attached to the household of Prince Charles in 1613, he accompanied him to Madrid, and sat in the Short and the Long Parliaments. Verney bore the royal standard at the battle of Edgehill, where he was killed, Oct. 23, 1642. A baronetcy was conferred on the head of the family in 1818. See Edgehill.



Sir Edmund Verney,
English courtier
After Van Dyck

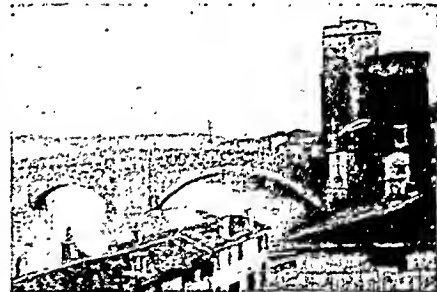
VERNIER. Device applied to a scale to give accurate readings in fractions of the smallest division of the scale. It is used on micrometers and other scientific instruments.

A sliding caliper vernier is illustrated, as engraved on the sliding jaw. The scale on the shaft gives measurements in tenths of inches. The vernier scale has ten divisions, together equal to nine divisions of the scale, each therefore representing $\frac{1}{10}$ of $\frac{1}{10}$ of an inch. In the illustration the zero mark of the vernier has passed the inch mark of the scale, but

has not reached the next $\frac{1}{10}$ inch mark. To decide the value of the fraction the vernier is consulted, and its 7 line is found to correspond exactly with a scale mark. It is evident that the 6 line of the vernier is $\frac{1}{10}$ of $\frac{1}{10}$ inch to the right of the nearest scale mark on its left; the 5 line, $\frac{2}{10}$ of $\frac{1}{10}$ inch; and so on to the zero mark, which is $\frac{7}{10}$ of $\frac{1}{10}$ inch beyond one inch. The reading therefore is 1.07 inch. It is named from Pierre Vernier (d. 1637).

VERNON, EDWARD (1684-1757). British sailor. Born Nov. 12, 1684, he joined the navy in 1701, served in the W Indies and Mediterranean, and became rear-admiral. He was M.P. for Penryn, 1727-34, and in 1739 commanded a fleet to the Antilles and captured Porto Bello. He died Oct. 30, 1757. Vernon introduced the use of rum and water to the sailors, and this was therefore called grog, the admiral's nickname being "Old Grog."

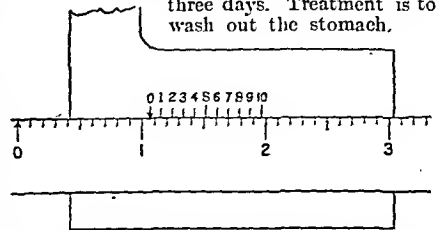
VERONA. City of Italy. It stands on the Adige, 72 m. by rly. W. of Venice. One of the fortresses of the quadrilateral, it is an important rly. junction. The ruined amphitheatre dates from the time of Diocletian. The Palazzo del Consiglio is a fine Renaissance building. The cathedral dates from 1187. The Castel Vecchio (1355) is at one end of an ancient pinnacled bridge. Notable churches include the magnificent Romanesque basilica, San Zeno Maggiore (1139), San Fermo Maggiore, with a fine façade, Santo Stefano, probably of the 11th century, and the Dominican church of Sant' Anastasia, a treasure house of pictures and sculptures. Pop. 151,707. See Amphitheatre.



Verona. The Old Bridge, with the Castel Vecchio, built in the 14th century

The Congress of Verona was a meeting of plenipotentiaries of France, Russia, Austria, Prussia, and Britain at Verona in 1822. Britain was represented by the duke of Wellington. Among points discussed were the relations of Greece, Turkey, and Russia; the slave trade; the recognition of the new South American republics; and the question of interference in Spain, where France was desirous of checking a democratic movement against the monarchy. On this Wellington took an independent line. See Europe.

VERONAL OR DIETHYLBARBITURIC ACID, $C_8H_{12}N_2O_3$. White crystalline powder. It is an hypnotic, but is not much given now, as it has been responsible for a number of cases of fatal poisoning. The symptoms of poisoning are headache, drowsiness followed by deep coma, and often a rise of temperature. A rash on the skin may be present, and death may occur in from one to three days. Treatment is to wash out the stomach.



Vernier. Diagram of portion of a scale, reduced, showing a measurement of 1.07 in.

VERONESE, PAOLO (1528-88). Italian painter, whose real name was Paolo Cagliari. Born at Verona, he was a son of Piero di Gabriele Cagliari, a decorative sculptor. He soon achieved a reputation in historical painting, and in 1555 was welcomed by Titian in Venice, where he became the favourite decorative painter of the day. In 1560-62 he was in Rome, and his grandest works were painted in Venice, 1562-70. He died in Venice, of pleurisy, April 19, 1588.

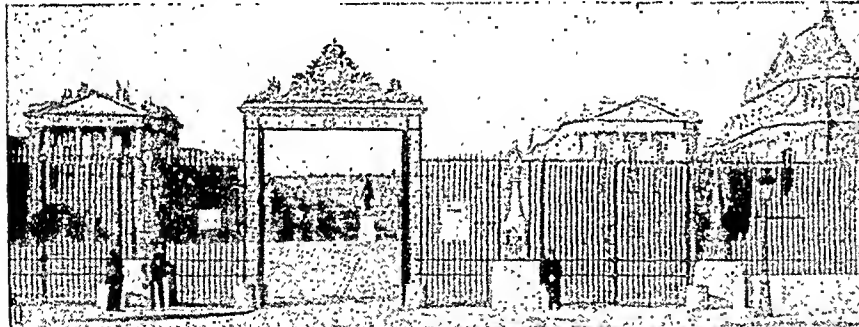


Paolo Veronese,
Italian painter
Self-portrait

His popular works include the Marriage at Cana, in the Louvre; the two great mural paintings of the martyrdom of S. Sebastian, in the church of that saint in Venice; The Family of Darius, in the National Gallery London; and The Supper at Emmaus, in the Louvre, Paris.

VERONICA. Genus of shrubs and herbs of the order Scrophulariaceae. They are natives of the N temperate regions, including Britain, and of New Zealand, Australia, and Chile, ranging from a few inches to three feet in height, with white, pink, or blue flowers.

VERONICA. Legendary saint. It is said that, having been healed by Christ, she wiped His face when carrying the cross, and that an image of His features was miraculously imprinted on her kerchief. By its means she is said to have cured and converted the emperor Tiberius. The alleged kerchief is preserved in Rome, though Milan and Jaén also claim the honour. The name Veronica is a corruption of Berenice, the saint's name in early forms of the legend.



VERRES, GAIUS (c 120-43 B.C.). Roman governor. His government of Sicily, 73-71, was marked by such a degree of extortion that the inhabitants had him prosecuted at the end of his term of office. The prosecution was entrusted to Cicero, and the speech which he delivered at the trial, 70 B.C., established his reputation as the most promising forensic orator of the day. So overwhelming was the evidence brought forward that Hortensius, the counsel of Verres, threw up his brief.

VERROCCHIO, ANDREA DEL (1435-88). Italian sculptor and painter. Born in Florence, he studied under Donatello, and developed into one of the finest craftsmen of the Renaissance. He was the master of Leonardo da Vinci, Lorenzo di Credi, and Pietro Perugino. He died in Venice. His best known works are the heroic equestrian statue of Colleoni in Venice, and the bronze David, now in the Bargello, Florence. See Colleoni, B.

VERSAILLES. Town of France, 10 m. W.S.W. of Paris. It is famed chiefly for the palace and park, though the cathedral and the church of Notre Dame are noteworthy.

The palace and park lie to the N.W., three main avenues crossing the town to the Place

d'Armes in front of the palace. A modest château, built by Louis XIII in 1627, was the centre round which Louis XIV built the enormous structure which, begun in 1661, became in 1683 the chief royal residence in France. It consists of a great central court, the Cour Royale, from which depend lateral wings. Among features of the interior are the Galerie des Glaces, in which William I was proclaimed German emperor and the peace treaty of 1919 was signed. The park is notable especially for its ornamental waters and fountains, the Trianons (q.v.), the Orangery, and the alleys leading up to the Étoile Royale.

The treaty of Versailles, 1783, which ended the War of American Independence, the meetings of the States General, 1789, and the National Assembly, the peace of 1871, the voting of the present republican constitution, 1875, and the treaty of 1919 are among the town's most historic landmarks. Pop. 68,575. See Fountain · Paris.

VERSAILLES, TREATY OF. International treaty made between the British Empire, the United States, France, Italy, Japan, Belgium, Bolivia, Brazil, Cuba, Ecuador, Greece, Guatemala, Haiti, Hejaz, Honduras, Liberia, Nicaragua, Panama, Peru, Poland, Portugal, Rumania, Yugoslavia, Czechoslovakia, Siam, and Uruguay on the one part, and Germany on the other. It was signed at Versailles on June 28, 1919, and ratified on Jan. 10, 1920, on which day its clauses came into force. China declined to sign, and the United States Senate rejected the treaty, so that the U.S.A. was not in the end a participant.

The first 26 articles established the League of Nations (q.v.). Important territorial changes were made in the political clauses.

Germany definitely surrendered Alsace-Lorraine to France; and Posen and W. Prussia, with an area of 18,000 sq. m., to Poland. The treaty also provided for a plebiscite in certain areas of mixed population.

The military and naval terms were complicated. The Allies were to occupy German territory W. of the Rhine, together with the bridgeheads of Cologne, Coblenz, Mainz, and Kehl, for 15 years; but provision was made for earlier evacuation of parts of this territory if the terms were faithfully fulfilled by Germany. Germany was forbidden to possess submarines, or any military or naval air force, or to manufacture tanks, armoured cars, or poison gas. Compulsory military service was to be abolished. The army was to be reduced to 100,000 men. The fortifications of Heligoland and of points commanding routes between the North Sea and the Baltic were to be demolished, and all the German fleet surrendered, except 6 small battleships, 6 light cruisers, 12 destroyers, and 12 torpedo boats.

The reparation clauses were of extreme importance. Germany accepted responsibility for all loss and damage caused to the Allies by the war. The Allies required a payment of £1,000,000,000 in gold, goods, or ships before May, 1921, with large subsequent payments to be completed in 30 years. Germany was to restore the devastated area in France and Belgium. She was to surrender all her merchant ships of 1,600 tons and over, and half her ships between 1,600 and 1,000 tons; she was to surrender all her transmarine cables. She was to deliver animals and plant to make good what she had destroyed or taken in the invaded zone, and to hand over pictures, manuscripts, and early printed books equivalent to those destroyed at Louvain. There were other provisions, including those dealing with the status of Allied citizens in Germany, etc. See Europe: Germany; Reparations.

Versailles Council. Allied military committee in the Great War which met at Versailles, usually called the supreme council (q.v.).

VERSE (Lat. versus, a furrow, from *vertere*, to turn). Universal medium of poetry. It denotes a series of syllables or sounds, ordered and measured in a particular way. The unit of measurement for this flowing or rhythmic movement is usually called a foot, since by the arrangement of these syllabic groups, as in dancing, with which primitive poetry was associated, by the beat of the foot, the character of the rhythm is determined.

In the classical languages the unit or foot varied according to the quantity, i.e. the distribution within it of the long and short syllables, but in modern languages the number of syllables and the incidence of the stress or accent determine the nature of the foot and so govern the metre. It is usual, however, in describing English verse to employ the classical terms, and, regarding stressed syllables as long and unstressed as short, to speak of iambic, trochaic, dactylic, or anapaestic verse.

VERTEBRAE (Lat. *vertebra*, a joint). Component bones of the spinal column. In man, the vertebrae are originally 33 in number. Of these 24 remain movable, while five at the lower part of the limb unite to form the sacrum, and four small terminal bones constitute the coccyx. Each vertebra consists of a short cylindrical part or body, which is connected with the vertebrae above and below by an intervertebral cartilaginous disk. The vertebrae are divided into five groups—namely, cervical, dorsal, lumbar, sacral, and coccygeal. The cervical vertebrae are the first seven. They are the smallest of the movable vertebrae. The dorsal or thoracic vertebrae are twelve in number and support the ribs. The five lumbar vertebrae are the largest of the movable vertebrae. See Anatomy.



Versailles. 1. Main entrance, looking towards the principal courtyard. 2. Galerie des Glaces, where William I was crowned German emperor in 1871, and where the treaty of Versailles was signed, 1919.

VERTEBRATE. Class of the animal kingdom which includes all those animals that possess a backbone. It comprises the fishes, amphibians, reptiles, birds, and mammals, and includes about 32,000 recognized species. The term chordates is preferred by some zoologists, as certain of the lowest forms included in the phylum have a smooth elastic rod, called the notochord, instead of a jointed vertebral column. See Animal.

Vertigo. Sense of instability and rotatory movement of the body. See Fainting.

VERULAM. Town of Natal. It is 19 m. by rly. N.N.E. of Durban and about 7 m. from the coast, and is the centre of sugar, fruit, and tobacco plantations. Pop. (white) 320.

The English title of earl of Verulam has been held since 1815 by the family of Grimston. His eldest son is known as Viscount Grimston, and his seat, Gorhambury, St. Albans, was offered for sale in 1930.

VERULAMIUM. Name of an ancient Roman city in Hertfordshire. It stood to the W. of St. Albans (q.v.), and was partially destroyed by Boadicea in 61.

Vervain. Perennial herb of the order Verbenaceae. See Verhena.

VERY LIGHT. Type of firework used for military, aerial, and naval signalling by showing a coloured light. The signals, fired from a special large-bore pistol, are made up in paper-lined brass cartridges, which contain a charge of black powder as the propellant and above that a coloured star, which is a package of composition similar to that used for flares. A piece of quick-match and priming of mealed powder enable the star to be ignited from the propellant. See Fireworks.

VESPASIAN (A.D. 9-79). Roman emperor 69-79, whose full name was Titus Flavius Sabinus Vespasianus. A man of obscure family, he rose to high military commands in Germany and Britain, and was in charge of the war against the Jews during the confusion



Vespasian, Roman emperor
Ny Carlsberg Museum
Copenhagen

which followed the death of Nero in 68. On July 1, 69, he was proclaimed emperor by his troops, and, his general Primus defeating in Italy the forces of the reigning emperor Vitellius, Vespasian came to Rome in 70, leaving his son Titus to continue the war against the Jews. He devoted himself largely to settling in order the finances of the empire,

which had suffered grievously under his extravagant predecessors. His economies, however, did not prevent him from erecting numerous public buildings. He was above all a soldier, and his reign was marked by extension of the Roman Empire in Britain and elsewhere. He died June 23, 79. See Colosseum; Rome; Sesterc.

VESPER. Sixth canonical hour of the divine office as given in the breviary of the R.C. Church. It consists of psalms, lessons, hymns, etc., varying day by day through the year, and is recited daily by all clergy and religious of both sexes. The term is also loosely applied to any evening service.

VESPUCCI, AMERIGO (1451-1512). Italian navigator. Born in Florence, March 9, 1451, he was employed in the business house of the Medici. In 1492 he set up for himself at Seville, Spain, and entered into the commerce then beginning with the New World. He made several voyages thither, sailing in Spanish and Portuguese vessels, and gained acquaintance with the little-known coasts of S. America. He spent the remainder of his life in making charts and maps of the New World.

During his voyages Vespucci appears to have explored the N.W. coast of the S. American continent. On the publication of his travels, in 1507, the claim was made that Vespucci had discovered the mainland, which was accordingly named after him, and though the matter was long in dispute and has latterly been decided against him, Amerigo's name, originally given to a small strip of land on the gulf of Mexico, was eventually given to the whole of the New World. Vespucci died at Seville Feb. 23, 1512. Pron. Vespuotchee.

VESTA. In Roman mythology, Italian goddess of the hearth. She was later identified by the Romans with the Greek goddess Hestia, whose attributes were similar. The worship of Vesta was a recognition of the supreme importance of fire in primitive communities. A temple, the Atrium Vestae, was maintained in her honour in the Forum. According to tradition, this sacred fire was brought from Troy by Aeneas. See Rome.

Vesta is also the name of one of the asteroids. Fourth in order to be found, and the brightest known of the asteroids, it can occasionally be seen by the naked eye, and has an approximate diameter of 350 m. It revolves round the sun in about 1,326 days. See Asteroid.

VESTAL VIRGIN. Priestess of the temple of Vesta in Rome. They were six in number, entered the service of Vesta at from six to ten years of age, and were either offered by their parents or chosen by lot from families selected by the Pontifex Maximus. Service lasted for thirty years in all, after which period they were free to return to civil life. During their service they were vowed to chastity, and breaking this vow, they could be buried alive by the Pontifex Maximus. Their chief duty was the maintenance of the sacred fire in the temple. They were abolished in A.D. 394.

VESTMENT (Lat. vestire, to clothe). In an ecclesiastical sense, garments worn by clergy, choir, and their assistants over ordinary dress during divine service. Vestments worn by officiating clergy are sometimes called canonicals, because prescribed by canon law. The idea that clerical vestments were derived from Jewish practice has given way to the view that they had their origin in the ordinary dress of the Roman empire. See Alb; Chasuble; Cope; Mitre, etc.

VESTIS, MADAME (1797-1856). British actress and singer. Daughter of Gaetano Stefano Bartolozzi (1757-1821), engraver, she was born in London and christened Lucia Elizabeth. In 1813 she married the Italian dancer Auguste Armand Vestris (1787-1825), from whom she separated in 1816. A year earlier she made her first appearance in opera. She acted in Paris, 1816, at Drury Lane, 1820, and won popularity in light comedy and burlesque in London and the provinces. In 1831, with Maria Foote, she opened the Olympic Theatre, London, and in 1838 married Charles James Mathews. She retired in 1854, and died Aug. 8, 1856.

VESTRY (Lat. restiarium, wardrobe). Room attached to a church in which the vestments are kept. Qualified parishioners used

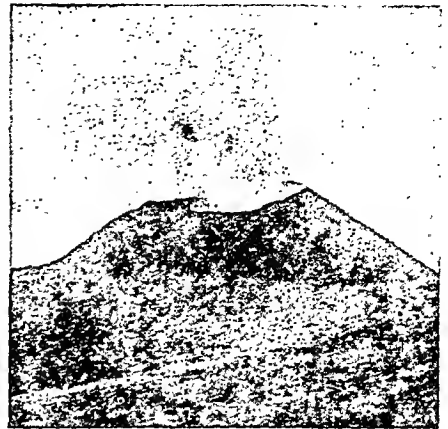


Vestal Virgin. Statue of Flavia Publicia, high priestess, A.D. 247-286
Temple of Vesta, Rome



Lucia Vestris, British actress

to meet in vestry to consider parish affairs, and the name was applied to the meeting itself. The vestry meeting is still held each Easter, but for church affairs, such as the election of churchwardens, only.



Vesuvius. The active cone of the volcano during a slight eruption

VESUVIUS. Volcano in Italy. It rises to a height of about 4,000 ft., 10 miles E.S.E. of Naples, on the shore of the Bay of Naples. There are two summits, the nearly perfect cone of Vesuvius and the old crater of Somma, which encloses the central cone. Before A.D. 79 the mountain was regarded as a truncated peak. Its crater formed a deep depression, and its slopes were obscured by thick forests. Its vicinity was thickly peopled, as its volcanic nature was probably not suspected. On Aug. 24, 79, a tremendous eruption took place, and Pompeii and other towns were buried under ashes, while Herculaneum was overwhelmed by a torrent of mud. Among subsequent explosions are those of 472, 1631, 1794, 1861, 1872, and 1906. A wire rope rly. connects the summit with the base, and an observatory is maintained near the cone. Grapes are grown on the slopes for wine. See illus. pp. 442; 724.

VETCH OR TARE (Vicia sativa). Annual herb of the order Leguminosae, a native of the Mediterranean region. Widely cultivated as a fodder plant, it has several stems, with alternate leaves divided into five or six pairs of oval or oblong leaflets, and ending in tendrils by means of which the plant climbs up grass stems, etc. The pale purple stalkless flowers are either solitary or in pairs, and the long pods are hairy. See Kidney Vetch.



Vetch. Spray of flowers and leaves, showing tendrils

VETERINARY SCIENCE. Science of treating the diseases of domestic animals. It is usually confined to those of the horse, cattle, sheep, pig, and dog, although others, e.g. cats and goats, are sometimes entrusted to veterinary surgeons.

The main infectious diseases from which the five animals suffer, and which form the staple of veterinary science, are rabies and distemper, peculiar to dogs; swine fever and swine erysipelas, peculiar to the pig; braxy and louping ill, peculiar to the sheep; rinderpest and bovine pleuro-pneumonia, that affect only cattle; and strangles and S. African horse sickness, that affect only horses. Others, which attack more than one species, are quarter ill, glanders, actinomycosis, tetanus, foot and mouth disease, tuberculosis, and anthrax. Six of these, actinomycosis, anthrax,

foot and mouth disease, glanders, tetanus, and tuberculosis, are communicable to man.

Examinations in veterinary science are conducted in Great Britain by the Royal College of Veterinary Surgeons at 10, Red Lion Square, London, W.C.1, an institution chartered in 1844, and possessing the sole right of granting veterinary diplomas. The Royal Veterinary College, Camden Town, London, was founded 1791, and like other veterinary colleges in Edinburgh, Glasgow, Dublin, and Liverpool, is affiliated to the parent institution. In the army there is a Royal Army Veterinary Corps.

VETO (Lat. I forbid) Term for the power of checking proposed legislation possessed by a king or body of men. In Great Britain the sovereign has not used his right of veto since 1707. In parliaments of two houses one usually possesses the right of vetoing legislation passed by the other, and this was the case in the United Kingdom until 1911. The Parliament Act of that year, however, reduced the power of the veto possessed by the Lords to a maximum period of two years. The president of the

U.S.A. has a veto on all legislation, but if the two houses jointly then pass a vetoed measure by a majority of two-thirds it becomes law.

VEVEY. Town of Switzerland. It stands on the Lake of Geneva, 11 m. by rly. E.S.E. of Lausanne. Steamers go from here to other places on the lake, and there is a funicular rly. that goes up Mont Pélérin. Pop. 12,825.



Vevey. The town and Lake of Geneva from Mont Pélérin

VIATICUM (Lat. provision for a journey). Administration of the Holy Communion to the dangerously sick or dying. The Roman Catholic Church has a special formulary for this office, which is provided for in the Church of England by directions for the Communion of the Sick. In the ancient Church, baptism and the Eucharist were called Viaticum.

VIBORG or **VIBURJ.** Town of Finland. It is situated on a bay of the gulf of Finland, at the mouth of the Saima Canal, about 75 m. N.W. of Leningrad. It is an important rly. junction and trading centre. Founded by the Swedes in 1293, it was formerly the capital of Karelia. Pop. 54,120.

VICAR (Lat. vicarius, deputy). In the Church of England, any incumbent of a parish, not a rector, entitled to solemnise marriages and keep the fees. Theoretically, the owner of the tithes is the rector, and the vicar is his deputy. Vicars choral are the assistants of the canons or prebendaries of collegiate churches, especially in connexion with the musical parts of divine service.

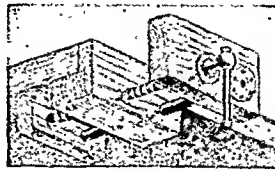
One of the titles of the pope is Vicar of Jesus Christ.

A vicar general is a lay legal officer who acts as deputy of the archbishops of Canterbury and York in granting marriage licences, the institution to benefices, and the confirmation of bishops. His office is 3, Creed Lane, London, E.C.

In the Roman Catholic Church a bishop may appoint two or more vicars general to assist him, and may assign to each jurisdiction over a particular district, or commit to one charge of contentious matters, to another voluntary jurisdiction, or give them all joint and full jurisdiction over the whole diocese, apart from offices coming under pontificalia.

VICARS, HEDLEY SHAFTO JOHNSTONE (1826-55). British soldier. Born in the Mauritius, Dec. 7, 1826, he served in Corfu, Malta, Jamaica, and Nova Scotia. He was killed in the Crimean War when repulsing a Russian attack on the trenches before Sevastopol, March 22, 1855. Vicars was admired by thousands as the ideal of a Christian soldier, constant in his practical care for the moral and spiritual welfare of the troops.

VICE on **VISE.** Name for various tools having two jaws for clamping between them material to be worked. They are used in filing or planing operations in which both hands are required to be free. A hand-vice, which strictly is not a vice, has a tang which is held in one hand, the other hand being free to hold a tool. Vices may have two movable jaws, although those in common use have one jaw fixed: the jaws are actuated by screw, cam, lever, or equivalent mechanism.



Vice. Carpenter's bench vice with wooden jaws

Vice-Admiral. Officer in the British Navy ranking between admiral and rear-admiral. See Admiral.

VICE-CHANCELLOR. Deputy of a chancellor. In the English legal system, the vice-chancellors, originally assistants to the lord chancellor, became prominent equity officials. The title was discontinued in 1873, and the last vice-chancellor was Sir James Bacon (1798-1895). The judge of the court of the duchy of Lancaster is called the vice-chancellor.

The office is an important one in the English universities, where the vice-chancellor, as representing the chancellor, is the acting head of the university. See Chancellor.

VICENTE, GIL (c. 1470-1540). Portuguese dramatist. A native of Guimarães, he became attached successively to the courts of Manoel I and John III, for whom he provided dramatic entertainments. He wrote 44 plays, some in Spanish, some in Portuguese, and others in both. His work included the famous *Auto of the Soul*, 1508, tragi-comedies for the court, and popular comedies and farces, such as *Ignéz Pereira*, 1523.

VICENZA. City of Italy, 41 m. by rly. W.N.W. of Venice. The old city is girdled by half-ruined walls. Many of its buildings were designed by Palladio, a native; the Basilica Palladiana surrounding the Palazzo della Ragione has a slender campanile, the Rotonda Palladiana has Greek colonnades, the Teatro Olimpico has curious permanent scenery on the stage. Silk and silk goods are the chief products; straw hats, woollens, leather, and musical instruments are also made. There is trade in wine, wheat, etc. Pop. 66,967.

VICEROY (Lat. vice, in place of; Fr. roi, king). Term used for one who governs on behalf of a sovereign. The governor-general of India is usually called the viceroy, as was the lord-lieutenant of Ireland until 1922. The Spanish king's representatives in Naples and America were officially styled viceroys. The feminine is vicereine.

VICHY. Health resort of France. It stands on the Allier, 75 m. W.N.W. of Lyons. Its popularity is due to its agreeable climate and thermal springs. There is a large export of the waters, which are efficacious for digestive ailments, gout, liver, and certain anaemic complaints. The waters were known to the Romans, whose name for the town was *Vicus Calidus*. Pop. 17,500.

VICKERS. Name of a British engineering firm. It originated as a steel making business in Sheffield, and began to construct guns when Sir Hiram Maxim (q.v.) joined it in 1883. The firm gives its name to certain types of machine guns and also to a series of aeroplanes, which Vickers began to build in 1911. The first aeroplane designed to carry a machine gun was the Vickers plane of 1913. Their most famous product is the Vickers Vimy, a two-engine machine designed in 1918 for bombing work, which later achieved both the first non-stop cross-Atlantic flight and the first flight from England to Australia. See Aeroplane.

VICKERSTOWN. District of Walney Island, Lancashire, part of Barrow-in-Furness. It was built early in the 20th century by the firm of Vickers for the accommodation of their employees. See Walney.

VICTOR EMMANUEL I (1759-1824). King of Sardinia, 1802-21. Born at Turin, July 24, 1759, the second son of Victor Amadeus II, he came to the throne on the abdication of his brother Charles Emmanuel II, 1802, although the French occupied all his territory except Sardinia. He regained his kingdom, with the addition of Genoa, in 1815. He abdicated in favour of his brother Charles Felix, March 13, 1821, and retired to Nice, where he died, Jan. 10, 1824.

VICTOR EMMANUEL II (1820-78). First king of Italy. Son of Charles Albert, king of Sardinia, he was born at Turin, March 14, 1820, and became king on his father's abdication in March, 1849. He participated in the Crimean War, and the alliance with France in 1859 enabled him to wage war on Austria and to liberate Lombardy. The following year Tuscany, Modena, and Parma united themselves together, while Garibaldi's conquest of Sicily and Naples



Victor Emmanuel II, King of Italy

added the whole peninsula, save Rome and Venetia, to Italy, of which Victor Emmanuel was declared king, Feb. 26, 1861. The inclusion of Venetia, 1866, and Rome, 1870, completed his realms. The *Re galantuomo*, or gallant king, as he was universally called, died Jan. 9, 1878.

VICTOR EMMANUEL III (b. 1869). King of Italy. Son of Humbert I, he was born at Naples, Nov. 11, 1869. In 1896 he married Princess Elena of Montenegro. His family consists of a son and four daughters. The son, Humbert, prince of Piedmont (b. 1904), was married in 1930 to Princess Marie José of Belgium. The third daughter, Giovanna, was married in 1930 to Boris, king of Bulgaria. Victor Emmanuel ascended the throne on the assassination of his father, July 29, 1900. A wise and tactful monarch, he skillfully guided his country during the Great War on the side of the Allies. He was noted for his wide culture.



Victor Emmanuel III, King of Italy

VICTORIA. Four-wheeled carriage, having a low seat for two, a raised seat in front for the driver, and a calash top. It is named after Queen Victoria, in whose reign it was introduced. Before the advent of the motor car it was a very popular vehicle. See *illus.* p. 1389.

VICTORIA. British battleship. Launched in 1897, she carried two 16.25-in. and one 10-in. guns on a displacement of 10,470 tons. She

was rammed and sunk during manoeuvres in the Mediterranean by the battleship Camperdown on June 22, 1893, 321 officers and men being lost. The fleet was steaming in two parallel columns, the Victoria and Camperdown leading. The admiral, Sir George Tryon (q.v.), in the Victoria, tried to turn the columns inwards in an insufficient space. Tryon went down with his ship.

VICTORIA. One of the great freshwater lakes in Central Africa, also known as Victoria Nyanza. From it issues the Nile. Known to the natives as Ukerewe, it was first discovered in 1858 by Speke. It is situated at an alt. of 3,726 ft., has an area of about 27,000 sq. m., and is surrounded by the Uganda protectorate, Kenya Colony, and Tanganyika Territory. Among its principal feeders are the Katonga, Kagera, and Mara rivers. Ports on the banks include Kisumu, Jinja, Port Bell, Entebbe, Bukoba, Mwanza, and Shirati. See Africa; Nile; Ripon Falls; Uganda.

VICTORIA. River of North Australia. It flows into Queen's Channel near the border of W. Australia. It drains an area of 90,000 sq. m., most of which is splendid grass country.

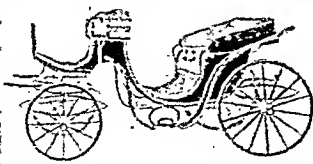
VICTORIA. State of the Commonwealth of Australia, in the S.E. of the continent. It adjoins New South Wales on the N. and South Australia on the W., and is separated by Bass Strait on the S. from Tasmania. Originally part of New South Wales, Victoria was made a separate colony in 1851, and obtained self-government in 1855. A sudden access of population followed the opening of the gold mines round Ballarat in 1852, but Victoria owes most to the steady development of sheep rearing, dairy farming, and wheat growing. Melbourne is the capital and largest city.

The state comprises three areas, the great valley of which Port Phillip is a submerged portion, the central highlands, and the S. portion of the basin of the Murray river. Victoria has a low rainfall. N. of the highlands irrigation is essential; the scrub area contains artesian bores. Mildura, on the Murray, is a famous irrigation colony; the Goulburn, Loddon, and Campaspe have been dammed, and other schemes are in progress for conserving the N. rivers. The chief mineral is gold. Copper also is mined and coal obtained. Four railway lines connect with New South Wales lines across the Murray, and two with South Australia. The area is 87,884 sq. m. Pop. 1,766,378. See Australia.

VICTORIA. Island of Canada. It is 420 m. by 320 m., and is separated from the mainland by Queen Maud Gulf, Dease Strait, Coronation Gulf, and Dolphin and Union Strait. It lies S.E. of Banks Island, S. of Melville Sound, and W. of McClintock Channel and Victoria Strait, and comprises Prince Albert Land and Wollaston Land. The W. coast is mountainous and deeply indented.

VICTORIA. Capital of British Columbia. It stands at the S.E. end of Vancouver Island, overlooking the Strait of San Juan de Fuca. The buildings include a fine pile erected for the provincial legislature and the Anglican cathedral, opened in 1929. Near is the Dominion observatory. It has steamship connections with Vancouver on the

mainland, San Francisco, and places in Mexico and Alaska, and is a port of call for steamers from Vancouver to Australia, China, and Japan.



Victoria. Low four-wheeled carriage, seating two. See p. 1388

Apart from shipping, the industries include the making of furniture, boots, clothing, and soap, as well as ship-building, lumbering, and canning. It is served by the C.P. and C.N. Rlys. The city includes the naval station of Esquimalt, with its fine harbour, situated about 3 m. away. Pop. 60,000.

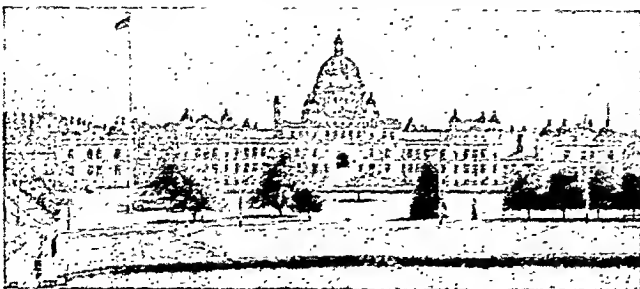
VICTORIA (1819-1901). Queen of Great Britain and Ireland and empress of India. The only child of Edward, duke of Kent, the fourth son of George III, her mother being Mary Louise Victoria of Saxe-Coburg-Gotha, she was born at Kensington Palace, May 24, 1819. She succeeded her uncle, William IV, June 20, 1837, and in 1840 was married to her cousin, Albert of Saxe-Coburg-Gotha. At the outset of her reign the queen was under the experienced political tuition of the premier, Lord Melbourne. Later she acted with the guidance of the Prince Consort. After his death in 1861 she withdrew from



Queen Victoria. A portrait taken in the year of her Diamond Jubilee

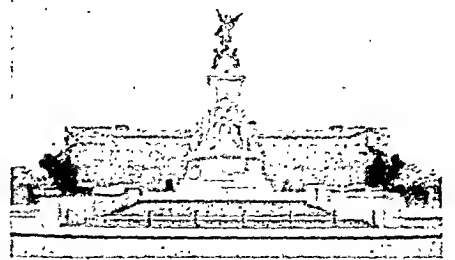
social life and passed much time at her Highland residence, Balmoral, and at Osborne, in the Isle of Wight. She refused, however, to depute any of her constitutional duties to another, and to the last kept in close touch with her ministers.

Her reign covered an extraordinarily eventful period, but personally she had little to do with the change which developed in the status of the colonies and their relations with the mother country. She had a more direct claim to something of a personal share in the development of the idea of the imperial relations between the British and the natives of India, and in 1876 Disraeli procured her assumption of the new title empress of India.



Victoria, British Columbia. Parliament Buildings, opened in 1897

Still more direct was the influence of Victoria's personality upon the relations between the crown, the ministers, and the British



Queen Victoria Memorial in front of Buckingham Palace, designed by Sir Aston Webb, with sculptures by Sir Thomas Brock. It was unveiled in 1911

people. The constitutional practice, established under the rulership of a single monarch exercised continuously for 64 years, virtually withdrew from the Crown the power of veto, and even the power of dismissing a ministry without a preliminary appeal to the country.

On June 20, 1887, the fiftieth anniversary of her accession, Victoria's jubilee was celebrated by a thanksgiving service in Westminster Abbey. Ten years later, a second festival, popularly known as the diamond jubilee, celebrated the longest reign of any British sovereign. Victoria died at Osborne House (q.v.), Jan. 22, 1901, and was buried at Frogmore.

The queen and Prince Albert had nine children. The four sons were Edward, prince of Wales, who succeeded his mother; the duke of Edinburgh, who succeeded his father as duke of Saxe-Coburg; the duke of Connaught, and the duke of Albany. The daughters were Victoria, who married Frederick, who became emperor of Germany in 1888; Alice, grand duchess of Hesse, Helena, Princess Christian, Louise, duchess of Argyll, and Beatrice, princess of Battenberg.

The Queen Victoria Memorial includes an elaborate monument, the new E. façade to Buckingham Palace, widening of The Mall, and Admiralty Arch, and was designed by Sir Aston Webb, with sculptures by Sir Thomas Brock. The memorial proper occupies a garden space in front of the palace, and was unveiled May 16, 1911, by George V. There is an All-India Victoria Memorial in Calcutta, opened in 1921. Several volumes of her letters have been published. See Brock, Sir T.

VICTORIA AND ALBERT. British order. Conferred on ladies only, it was instituted in 1862, but appointments to it are no longer made. In four classes, the badge of the first three is a medallion of diamonds and pearls with portraits of the queen and Prince Albert; for the fourth class it is the royal eiphers interlaced. The ribbon is white moire; members use the letters V.A.

VICTORIA AND ALBERT MUSEUM. British museum of applied art, under the control of the Board of Education. Its nucleus was the museum of ornamental art established at Marlborough House in 1852. Five years later it was transferred to temporary buildings at South Kensington, being generally known as the South Kensington Museum. New buildings, designed by Sir Aston Webb, were completed in 1909. The museum contains one of the finest collections of decorative and ornamental art in the world. The Indian section, in Imperial Institute Road, and Bethnal Green Museum, opened in 1872, are branches. See Kensington.



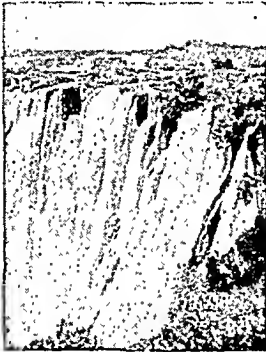
Victoria and Albert. Badge of the order

VICTORIA CROSS. Decoration for valour, the highest of its kind open to officers and men of the British Navy, Army, and Air Force. It is a Maltese cross of bronze, with underneath a scroll bearing the words "For Valour." It is worn suspended from the left breast by a red ribbon. The decoration was instituted by Queen Victoria in 1856. It is given for "conspicuous bravery or devotion to the country in the presence of the enemy," and it is awarded very sparingly. The honour was originally confined to white troops in the service of the crown, but since 1911 it has been open also to Indian soldiers, and from 1920 to women or civilians of either sex, when under the direction of military, naval, or air forces.



Victoria Cross.
Awarded for valour

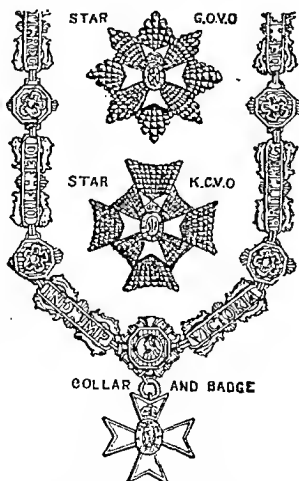
VICTORIA FALLS. Falls on the Zambezi river in Southern Rhodesia. Situated 7 m. from Livingstone, they were discovered by Livingstone in 1855, and are about 357 ft. deep and about one mile long. The Zambezi is crossed a little below the falls by a rly. bridge, on the main line northwards from Cape Town to the Congo. A hydro-electric station has been established to make electricity for use on the railways and on the Rand. See Zambezi.



Victoria Falls. The magnificent cascades of the Zambezi river

VICTORIA HALL. London place of amusement known as the Old Vic. In Waterloo Road, S.E., it was opened May 11, 1818, as The Royal Coburg Theatre, and in 1833 changed its name to The Royal Victoria Theatre. In Dec., 1880, it became known as The Royal Victoria Coffee Music Hall, under the management of Emma Cons (1838-1912), whose niece, Lillian Baylis (q.v.), became acting manager in 1898. The Old Vic has been famous since 1880 as a home of classic English drama and good music. In 1922 its management, after an appeal, raised the necessary funds for structural alterations, and it was reopened in 1923.

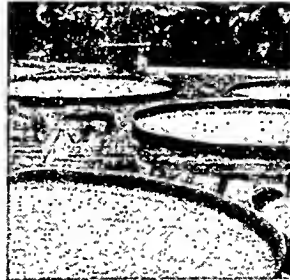
VICTORIAN ORDER. ROYAL. British order of knighthood. It dates from 1896. There are five grades, grand cross (G.C.V.O.), knight commander (K.C.V.O.), commander (C.V.O.), and two classes of members (M.V.O.). The badge is a white Maltese cross with a crimson oval centre bearing the royal and imperial cipher, surrounded by a blue circle in which is inscribed in gold Victoria, and surmounted by the imperial crown. The ribbon is dark blue with a narrow edge of red and white. The chancellor of the order is the lord chamberlain. See Knighthood.



Victorian Order. Insignia of the British order of knighthood

VICTORIA PARK. London recreation ground. Situated at the N.E. of Bethnal Green and covering 217 acres, it was formed in 1842-45, the first cost being provided by the sale of York (later Sutherland) House, St. James's, and enlarged in 1872. All forms of popular pastimes are provided for; here are lakes for boating, bathing, and open-air swimming, several gymnasia, flower gardens, palm house, shrubberies, hand stand, aviaries, enclosures for deer, goats, and other animals, and spaces for public meetings.

VICTORIA REGIA. Giant aquatic herb of the order Nymphaeaceae. Also called royal water lily and water maize, it is a native of the Amazon, Guiana, and La Plata. It grows only in still, shallow (4 to 6 ft. deep) waters, and has a thick perennial root-stock. The floating leaves are round, with edges turned up for several inches. The flower is 15 to 18 ins. across, and lies on the surface of the water. The top-shaped calyx has purple-brown segments, and the numerous petals are in several series, the outer ones white and much broader than the purple or rose-coloured inner ones, surrounding the fleshy awl-shaped stamens and the large ovary with its cup-shaped depression. This develops into a large green, prickly berry, containing numerous dark brown oval seeds, which are roasted and eaten in Guiana.



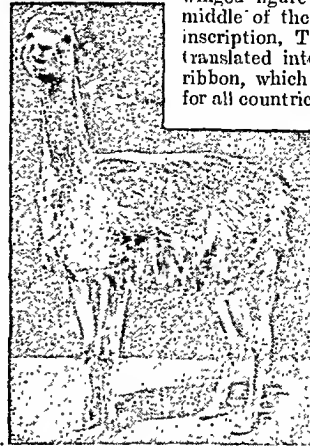
Victoria Regia. Floating leaves of the giant S. American water lily

VICTORY. British ship of the line. She was designed by Sir Thomas Slade, and launched at Chatham dockyard, May 7, 1765, but not commissioned until March, 1778. She was 226 ft. 6 ins. long from figure-head to taffrail, 186 ft. on the gun-deck, and 52 ft. in beam, the tonnage being 2,162; and her armament on first commissioning was 12 short and 32 long 12-pounders, 30 24-pounders, and 30 32-pounders. Nelson selected her as his flagship when appointed commander-in-chief in the Mediterranean, 1803, and in her he won the battle of Trafalgar. She was paid off from active service in Nov., 1812. By 1928 she was restored to appear as she was at Trafalgar. See p. 229.

VICTORY MEDAL. Allied medal of the Great War. Instituted in March, 1919, it was awarded to all officers and men in the army who entered a theatre of war on the strength of any military unit, and in the navy to all officers and men who had been afloat on duty, Jan., 1914-Nov., 1918. It was also awarded to airmen,

Dominion, Colonial, and Indian forces, and also to women's formations.

The medal is of bronze. On the obverse is a winged figure of Victory full length, in the middle of the medal. On the reverse is the inscription, The Great War for Civilization, translated into the different languages. The ribbon, which is red in the centre, is identical for all countries. See Medal, and illus. below.

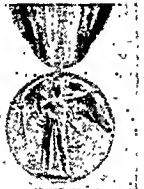


Vicuña. Small wild llama of Peru
W. S. Berridge, F.Z.S.

VICTUALLING (Lat. vivere; to live). Provision of food. Victuals is a synonym for food and drink. A licensed victualler is an innkeeper. A victualling yard is an Admiralty depot from which vessels of the British navy can be supplied with stores of various kinds, including food supplies.

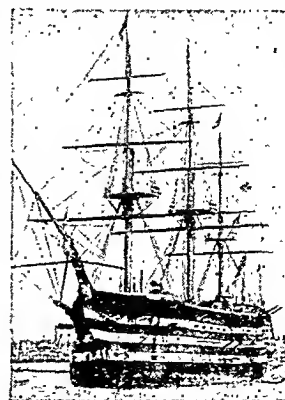
VICUÑA (Lama vicuña). Small wild species of llama. Found in Peru and the surrounding district, it belongs to the camel family, but is of smaller size and more graceful in form than the true camels. Its hair is light brown, with plover markings on the face. During the hot weather it is found in the valleys, but in the rainy season it frequents the higher ranges of the hills. From its wool a soft fabric, used for clothing, is made. See Llama.

VIDOCCQ, EUGÈNE FRANÇOIS (1776-1857). French detective. He was born at Arras, and in 1809 offered his services to the police, at whose instigation he served a term in prison, and was allowed to mix freely with the inmates, thus gaining their confidences and betraying them to the police. So successful was the police spy that in 1817 he was authorised to establish a regular body of detectives, of which he was the head.



Victory Medal.
Awarded in 1919

VIENNA (Ger. Wien). Capital of the Austrian republic. It is on the right bank of the Danube, where the great plain meets the Wiener Wald. An arm of the river, converted into the Danube Canal in 1876, flows through the city, receiving the Wien, a small stream now built over. The city, which is an autonomous federal prov. of the republic, covers 107 sq. m. Pop. 1,855,362. The inner city, or Altstadt, contains the Hofburg, formerly the principal imperial residence, the embassies, government offices, and banks. It is encircled by the Ringstrasse, with Renaissance buildings, parks, and squares. In the heart of the old city is the cathedral of S. Stephen, mainly of the 14th and 15th centuries, though the oldest part dates from the 12th century. The S. tower is 450 ft. high. The art history museum contains a priceless collection of old masters, chiefly Rubens, Dürer, and the Venetian school.



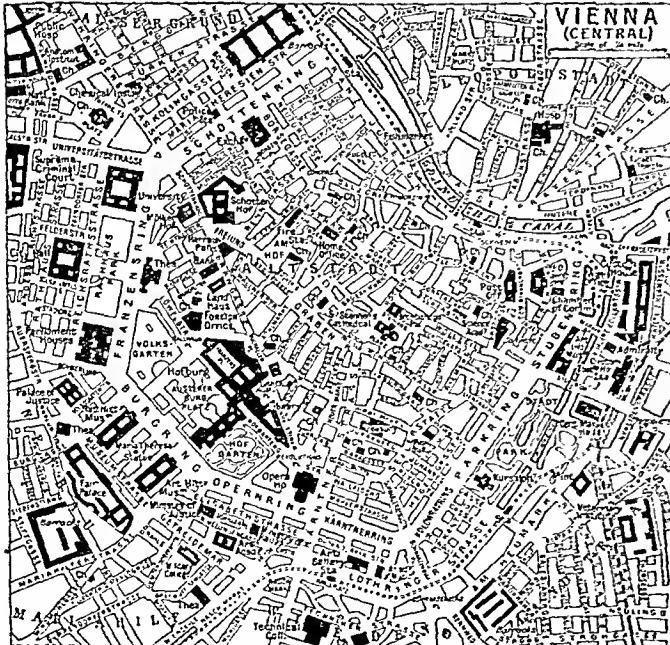
H.M.S. Victory, the old flagship of Keppel, Jervis, and Nelson, at her moorings in Portsmouth Harbour

Among other buildings in and near the Ringstrasse are the Gothic city hall, the university, exchange, academy of art, and conservatory of music. The Liechtenstein gallery has canvases by Rubens and Van Dyck. Some of the best shops are in the two fashionable thoroughfares, the Kärntnerstrasse and the Graben. Among the numerous parks and public gardens, the principal resort of all classes is the Prater. In 1928 work was begun on a stadium capable of holding 60,000 people.

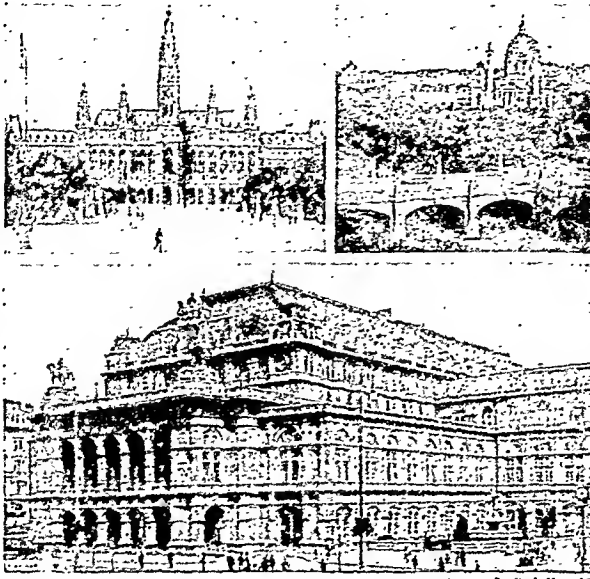
Vienna has long been an important commercial centre. The principal grain and cattle markets of Austria are held here, and the industries include iron and steel working and the manufacture of gold and silver ornaments, scientific instruments, cloth, linen, carpets, furniture, and leather goods. Film making is also an important industry. The Vienna fairs are famous. See Danube; Schönbrunn.

CONGRESS OF VIENNA. This was a meeting of plenipotentiaries of the European powers at Vienna in 1814-15 after the defeat of Napoleon and the entry of the allies into Paris. It began Sept. 20, 1814, and the final settlement was signed June 9, 1815.

The chief results were: France reverted to her frontiers of 1792; Austria gave up the Netherlands, but received other territory; Prussia got Posen and part of Saxony; Russia got part of Poland and Finland; Norway was joined to Sweden; the Austrian Netherlands (the modern Belgium) were joined with the Dutch provinces to form the kingdom of the Netherlands; the Spanish monarchy was restored; the German confederation was reconstructed; while Britain secured Malta and the Ionian Islands, the Cape, Ceylon, some West Indian islands, and Mauritius. See Europe.



Vienna. Plan of the central area of the Austrian capital



Vienna. Opera House, seating over 2,000 persons. Above, left, City Hall, built 1872-82; right, Church of St. Charles and the Elizabeth bridge. Below, right, Cathedral of St. Stephen

VIENNE. Town of France. It stands on a hill above the confluence of the Gère with the Rhône, 19½ m. by rly. S. of Lyons. The cathedral is of the 12-16th centuries. Roman remains include the Temple of Augustus. A bridge crosses the Rhône here. Vienne was for a time capital of Burgundy. Pop. 23,732.

The council of Vienne, the fifteenth oecumenical council of the Church, convoked by Clement V., was held Oct. 16, 1311-May 6, 1312. It met under the pope's presidency to consider the charges against the Templars. That no influence should be lacking, Philip IV of France went to Avignon, and on March 22, 1312, the bull Vox Clamantis was issued, suppressing the order. Disciplinary measures concerning other religious orders were taken. See Knights Templars

VIGIL (Lat. vigile, to watch). Ecclesiastical term for the day of fasting before certain feasts. Originally the night was spent in watching and prayer. In the R.C. Church matins and lauds and the midnight Mass before Christmas are the only survivals of the ancient custom. At the present day the term is applied to the practice of watching the bodies of the dead before burial. See Knight-hood; Wake.

VIGNETTE (Fr. little vine). Term used in the decorative arts in several senses. In the 16th century the

word, often spelt vinet, meant a trailing border of grapes, leaves, branches, and tendrils of the vine, used in architecture, as borders for book pages, or adornment for dresses. In book decoration, a vignette is the group of ornamental flourishes round a capital letter, as in a MS., the engraved illustration on a title page, head and tail pieces, and, in modern use, any illustration of which the background fades away to the tint of the paper. In a sense similar to the last, the term is also used in photography.

VIGNOLA, GIACOMO BAROZZIO DA (1507-73). Italian architect and writer on architecture, also known as Barocchio. Born at Vignola, near Modena, Oct. 1, 1507, from 1550 he practised architecture in Rome, and in 1564 became architect of S. Peter's in succession to Michelangelo. His best design was the palace of Caprarola, near Viterbo, built for Cardinal Alexander Farnese; but his treatise on the laws of the five orders of architecture, 1563, is perhaps his most noteworthy work. He died in Rome, July 7, 1573. Pron. Veen-yola.

VIGNY, ALFRED VICTOR, COMTE DE (1797-1863). French poet, dramatist, and novelist. He was born at Loches, March 27 1797. One of the earliest leaders of Romanticism, he published his first poems in 1822. His verse ranks with the finest philosophical poetry in modern literature. His prose fiction comprises an historical romance, Cinq-Mars, 1826; Stello, 1832; and three fine nouvelles collected under the title Grandeur et Servitude Militaires, 1835.

In the drama he produced, besides translations from Shakespeare (Shylock, Othello) and a short comedy, two prose tragedies, La Maréchale d'Anere, 1830, and Chatterton, 1835. He died Sept. 17, 1863.

VIGO. Seaport of Spain. It stands on Vigo Bay, 72 m. N. of Oporto. The fine harbour is a port of call for large steamers. The tunny and sardine fisheries, building of small steamers, and manufacture of cordage are important. There are foundries, machine shops, paper and saw mills, petroleum and sugar refineries, chocolate and soap factories, tanneries and distilleries. Wines, fish, cattle, and agricultural produce are exported. The port was attacked by Drake, 1585 and 1589, and by an English and Dutch fleet in 1702, when immense treasure was taken. Pop. 53,091.

VILAYET (Turk. province). Name given to the chief administrative divisions of Turkey. Each vilayet is governed by a vali and has an elective council. In the present republic of Turkey there are 62 vilayets, and each is divided into cazas.

VILJOEN, BENJAMIN JOHN (1868-1917). South African soldier. He came to the front in the S. African War, 1899-1902, as a daring guerrilla fighter. One of the military leaders in the operations against Ladysmith, 1899-1901, he was taken prisoner by the British in the latter year. He was a member of the second Volksraad of the S. African republic previous to the Union. After the war he undertook a lecturing tour in the British Isles. He died at Lamesa, New Mexico, Jan. 14, 1917. See South African War.



Alfred de Vigny, French writer

VILLA. Latin word meaning a country house, but now used in England for a residence of moderate size, usually a suburban one. Most wealthy Romans had their villas, and the name and idea were carried by the Romans into France, Britain, and elsewhere. The normal type enclosed an open court, access to the dwelling apartments and offices being gained by a covered corridor. Outstanding remains in Britain are at Woodchester, Winchcombe, Chedworth, Gloucestershire, Bignor, Sussex, and Brading, Isle of Wight.

VILLA, FRANCISCO PANCHO (1877-1923). Mexican soldier. Born at Las Nieves, he was originally known as Doroteo Arango, but changed his name to Villa. He became notorious for his robberies. Pardonned by Madero on the outbreak of revolution in 1910, in return for his services, Villa speedily gained fame as a guerrilla general. In 1914 he sided with Carranza against Huerta, then revolted against the former, and when, in 1916, the Carranzist government was recognized by the U.S. government, Villa continued a guerrilla warfare against it. He was murdered, July 20, 1923. See Mexico.



Francisco Villa,
Mexican soldier

The Carranzist government was recognized by the U.S. government, Villa continued a guerrilla warfare against it. He was murdered, July 20, 1923. See Mexico.

VILLAGE (Lat. villa). Name given to a small settlement, one smaller than a town. The typical village, found all over England, consists of a number of houses grouped round a church. The hall or manor house stands near, and around are a number of farms.

The term village community is applied to a group of settlers who built their houses close together and cultivated the surrounding land in common. It is practically certain that something of this kind was found at an early date over a good part of Europe.

Village centres for disabled ex-service men came into existence following the Great War. By means of medical treatment, coupled with a course of re-education both of mind and muscle, the men are enabled to earn their own living. The first village centre was established at Enham (q.v.), Hants. The offices are 10, Upper Woburn Place, London, W.C.1.

VILLARS, CLAUDE LOUIS HECTOR, DUO DE (1653-1734). French soldier. Born at Moulins, May 8, 1653, he entered the army in 1671. His reputation made, he was given a cavalry command in 1690, and during the next 25 years was almost constantly in the field. One of France's chief generals in the War of the Spanish Succession, he won victories at Friedlingen, Denain, and elsewhere, and was in command at Malplaquet. He died at Turin, June 17, 1734. A marshal in 1702, Villars was prominent as a politician after 1715.

VILLEGAS, José (1848-1921). Spanish painter. Born at Seville, Aug. 26, 1848, he studied art in Spain and Italy. He excelled in genre subjects, his best known works being Columbus at La Rabida, Palm Sunday in Venice, A Spanish Christening, and A Cairo Slipper Market. Villegas was for many years director of the Prado Museum, Madrid. He died Nov. 10, 1921.

VILLEINAGE. State of being a villein. In England, while the manorial system prevailed, i.e. roughly from the 11th to the 15th century, a large proportion of the population were in this condition. They formed a class intermediate between the freemen and the serfs. Their position as defined by the lawyers was quite servile. They could not leave the land to which they were bound. They were obliged to perform certain services to the lord of the manor, and they had to pay him fines of various kinds.

In practice the position of the villeins was somewhat better. They had by custom

certain rights, and gradually the courts of law began to recognize these. Residence for a year and a day in a chartered town made a villein into a freeman. The end of the system was due mainly to economic causes. See Manor; consult also P. Vinogradoff, Villeinage in England, 1892.

VILLENEUVE, PIERRE CHARLES JEAN BAPTISTE SILVESTRE (1763-1806). French sailor. Born Dec. 31, 1763, he was a naval officer when the Revolution broke out, and rose to be admiral in the republican navy, 1796. Saving his vessel at the battle of the Nile, he made his way to Malta. A favourite of Napoleon, he was given command of the Toulon squadron in 1804, but was defeated in 1805 at Trafalgar. Taken prisoner by the English, he was released in 1806, and committed suicide at Rennes, April 22, 1806.

VILLEROI, FRANÇOIS DE NEUVILLE, DUC DE (1644-1730). French soldier. Son of the marquis of Villeroi, a marshal of France, he spent much of his boyhood as the companion of the young Louis XIV. He became a soldier, and succeeded Luxembourg as commander of the army in the Netherlands in 1695. In the early days of the War of the Spanish Succession he served in Italy, but at Cremona he was taken prisoner. He led the French at Ramillies, but after this defeat was dismissed. He died July 18, 1730.

VILLERS-COTTERETS. Town of France, 14 m. S.W. of Soissons. The castle, built by Francis I, is used as a home for the aged. The industries include carriage building and biscuit making. Entered by the Germans at the end of Aug., 1914, during the Great War it was the scene of a rearguard action between the Germans and British in the retreat from Mons, Sept. 1. Pop. 4,466. See Aisne; Marne; Mons.

VILLIERS DE L'ISLE ADAM, PHILIPPE AUGUSTE MATHIAS, COMTE DE (1839-89). French poet. A Breton count, he was born at St. Briec. He claimed descent from a grand master of the Knights of Malta, and on the death of King Otto wanted to be a candidate for the throne of Greece. Impecunious, imaginative, influenced by Poe, Hegel, Wagner, and occultism, he lived for a time with the monks of Solesmes, and died of cancer in a Paris hospital. He wrote dramas, poems, and philosophical romances.

VILLON, FRANÇOIS (1431-c. 1485). French poet. He was humbly born in Paris. His own patronymic was Montcorbier, and he called himself Villon after a priest who became his benefactor. After some irregular attendance at the university of Paris, he became associated with a company of reckless young gallants, and in 1455 he was sentenced to be hanged for killing a priest in a brawl. Through the influence of the Paris parlement he was respited.



François Villon,
French poet

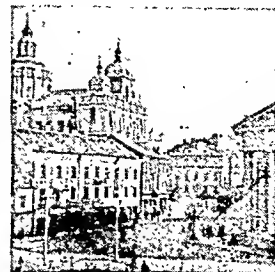
After a fitfully feverish career he found a quiet sanctuary in the house of the abbé of St. Maixent in Poitou, and there he presumably died.

His first considerable work was *Le Petit Testament*, a mocking list of bequests to his graceless companions. His masterpiece, *Le Grand Testament*, written in 1461, is a treasury of ballades and rondeaux charged to the brim with purest poetry.

VILNA or WILNO. City of Poland. It lies at the confluence of the Vileika and Vilia and is an important rly. centre. The cathedral of S. Stanislaus contains the silver coffin of S. Casimir. The trade in grain and timber products is extensive. Tobacco, candles,

leather, knitted goods, and gloves are manufactured. It has long been an important centre of Jewish interests.

Vilna figured prominently in the Great War, the Germans capturing it from the Russians, Sept. 18, 1915. On Oct. 10, 1920, Zeligowski, at the head of a Polish force acting independently of the Polish government, seized the town, proclaiming it and part of the former government of Vilna a republic. In 1923 the council of ambassadors decided that the town and district should belong to Poland. The Lithuanians still regard the city as their capital. Pop. 189,000. See Lithuania; Poland.



Vilna. Cathedral of S. Stanislaus, built in 1387 and restored in 1801

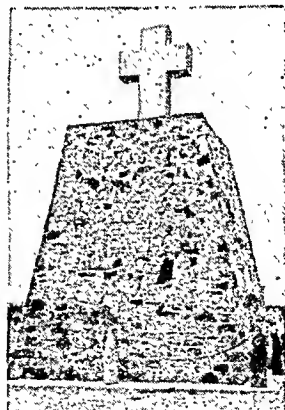
a republic. In 1923 the council of ambassadors decided that the town and district should belong to Poland. The Lithuanians still regard the city as their capital. Pop. 189,000. See Lithuania; Poland.

VIMEIRO. Village of Portugal. It is 7 m. from Torres Vedras and 31 from Lisbon. Here on Aug. 21, 1808, was fought the first important battle of the Peninsular War. Wellington, with 20,000 men, had pushed forward to Vimeiro, when he was attacked by the French, with somewhat fewer numbers. The French fell back in disorder, but Sir Henry Burrard, in supreme command, refused to pursue.

Viminal or VIMINALIS. One of the seven hills of Rome, E. of the Quirinal. It was so called from the osiers (viminalis) on it. See Rome.

VIMY RIDGE. Upland of France. It is 5 m. N. by E. of Arras and 476 ft. high, and is an E. spur of the Notre Dame de Lorette. In the Great War the village here was captured with

Petit-Vimy by the British, April 13, 1917. The ridge, dominating the Arras sector, passed to the Germans early in the war. Unsuccessfully attacked by the French under Foch in June and Sept., 1915, it was stormed by Canadian troops, April 9-10, 1917, in the third battle of Arras, and thenceforth was held by the British. Canadian war memorials are here, and the ridge has been planted with maples. See Arras.



Vimy Ridge. The Canadian Corps Artillery monument

VINCENNES. Town of France. It lies outside the fortifications of Paris, with which it is connected by rly. and tram. There are distilleries, metal and engineering works, chemical, piano and organ, rubber, and fancy goods manufactures. Market gardening is carried on. The château was begun by Louis VII in 1164. Louis XI converted the keep into a state prison; among famous prisoners have been Henry of Navarre, the Condés, Cardinal de Retz, Diderot, and Mirabeau. Vincennes was the scene of the execution of the duke of Enghien, 1804, and of various spies and traitors during the Great War. The Bois de Vincennes is a park between the fortifications and the right bank of the Marne. Pop. 41,527.

VINCENT (d 304). Spanish saint and martyr. Ordained deacon at Osea (Huesca), he was apprehended during the persecution of Diocletian and taken to Valencia (Valencia), where he died after tortures inflicted by the governor Dacianus. His day is Jan. 22.

VINCENT DE PAUL (1576-1660). French priest and saint. Born at Gascony, April 24, 1576, the son of a small farmer, in 1600 he was ordained priest. After a visit to Rome he made his way to Paris. Here he founded the Order of Mission Priests, which was later established at St. Lazare, Paris, and became known as the Lazarist Fathers. He founded the Daughters of Charity, the first order of unclioistered women devoting their lives to works of charity among the poor, established the Foundling Hospital in Paris, and worked on behalf of the galley slaves. In 1649 he established the first mission to the natives of Madagascar, and he died in Paris, Sept. 27, 1660. He was canonised 1737.



Vincent de Paul,
French saint

united above and free below, so that the expansion of the stamens throws them off entire. They are succeeded by berries (grapes) containing two or four hard seeds. Many varieties have been produced, with fruit varying in colour from purple to whitish green.

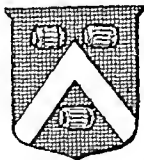
The grape vine is believed to have been introduced to Britain by the Romans, and in Saxon times vineyards were numerous. But the climate of Britain is more conducive to the production of foliage than to the ripening of the fruit. The genus *Vitis* includes about 400 species. See Grape; Phylloxera.

VINEGAR (Lat. vinum, wine; acer, sharp). Sour liquid obtained by the acetic fermentation of alcoholic liquors. The acid in vinegar is acetic acid, 5 to 7 p.c. being the best proportion, the rest of the liquid being made of esters and extractive and mineral matters. The flavour and constituents of vinegar depend largely upon the liquor from which it is made. Table vinegars are often flavoured with pepper, capers, garlic, etc., and aromatic vinegars contain volatile oils and are used as cooling lotions.

VINEGAR HILL. Eminence in eo. Wexford, Irish Free State, just outside Ennisceorthy. In May, 1798, a force of rebels 15,000 strong formed a camp on Vinegar Hill, whence they carried on outrages on the Protestant royalists. They were defeated by a force under General Lake. See Ireland.

VINEGAR PLANT. Name given to a tough layer of a slimy character found on the surface of fluids, originally saccharine, which have become alcoholic through the breaking up of the sugar by the action of the yeast. Where this appears the alcohol is converted into acetic acid. The mass consists of numerous layers of minute threads of fungi and bacteria.

VINTNER. Dealer in wine. The Vintners' Company is one of the 12 great London livery companies. Incorporated in 1437 and called originally the Merchant Wine-Tonnors of Gascoyne, it had two classes, wine importers and innkeepers, and exercised powers over the imports and sale of wines and the licensing of taverns. That part of the city known as the Vintry was once a centre where the vintners chiefly resided. The hall in Upper Thames Street was rebuilt in 1930.



Vintners' Com-
pany arms

VIOL. Name of a family of bowed instruments, dating from the 11th century. In general appearance it somewhat resembled the violin type, but there were really important differences. The back of the viol was flatter and its ribs deeper, while the shoulders, instead of being round and meeting the neck at right angles, were sloping and met it at a tangent.

The sound-holes were usually e- instead of f-shaped, and the strings were five to seven in number instead of four, the tuning being in fourths and one third. There were several sizes, the chief being the treble, but the violone (or double bass viol) is the only one still in use.

VIOLA. Bowed instrument of the violin type. It is about one-seventh larger in size, and has its four strings a fifth lower in pitch. The size of the viola being inadequate to the deeper pitch, the tone, though sympathetic, is less brilliant than that of the violin (q.v.).



Viol, tenor 6-stringed
instrument

VIOLET (*Viola*). Large genus of low herbs, mostly perennial, of the order violaceae, natives of all the temperate regions. Eleven species are recognized as British, including such well-known forms as the sweet violet (*V. odorata*), the dog violet (*V. canina*), and the heartsease (*V. tricolor*)—the last an annual. The flowers are irregular, and the five petals form two pairs of different size and an odd petal. In many species, as in the sweet violet, the odd petal is lengthened behind to form a hollow tube in which nectar is produced. See Heartsease; Pansy.



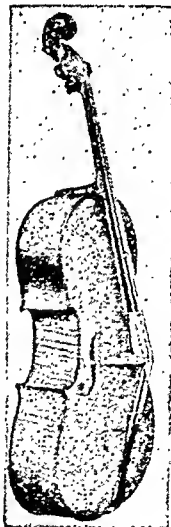
Violet. The British wild
violet, *Viola canina*

VIOLIN. Bowed instrument of great importance in modern music. It dates back for some three and a half centuries, and since the early 18th century its form, as settled by the great Italian luthiers, has undergone no radical change. Its size, shape, and proportions are based (a) on the manner of holding and bowing the instrument; and (b) on the production of a full, powerful, and brilliant tone. The principal parts that make up a violin are: (1) a resonant body, consisting of an arched belly and back, united by ribs; (2), a finger-board; (3), a neck, terminating in a head or scroll; and (4) four strings carried from a tailpiece over a bridge on the belly to tuning-pegs in the end of the neck.

The strings are set in vibration by a horse-hair bow held in the performer's right hand, the fingers of the left hand being pressed upon them as required. To reach the higher notes, seven positions are used. See Stradivari.

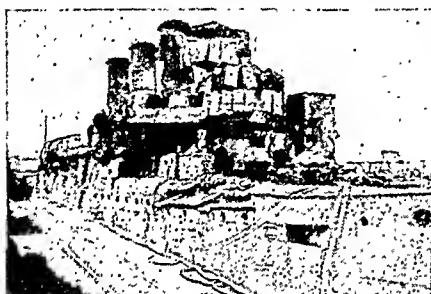
VIOLONCELLO. Bass violin tuned an octave below the viola (q.v.), but held between the legs of the performer as was the viola da gamba. It generally plays the bass part in orchestral music, but it is also valuable for melodic purposes.

VIPER. Large tribe of poisonous snakes. They are usually characterised by thick bodies, flat and triangular heads, vertical pupils to the eyes, and short tails. All are venomous, and most viviparous. The true vipers (*Vipera*) include some ten species, found in Africa, Europe, and part of Asia. The sand viper is found in S. Europe, where it preys upon small birds and mammals, lizards, and snakes. Russell's viper occurs in India, Ceylon, and Siam; its bite is almost as deadly as that of the cobra. The common viper or adder (*V. berus*) is common in Europe and Asia, and is the only venomous reptile occurring in Great Britain. See Adder; Horned Viper; Snake.



Violoncello, bass
stringed instrument

VIPER'S BUGLOSS (*Echium vulgare*). Biennial bristly herb of the order Boraginaceae, a native of Europe, W. Siberia, and N. Africa. The stout stem is three or four feet in height, the lower part clothed with lance-shaped or oblong leaves, the upper crowded with short lateral sprays of flowers. The flowers are funnel-shaped, red-purple before they open, then a bright blue—occasionally white. The fruit consists of four wrinkled, angular nutlets. See illus. p. 1394.



Vindictive. The battered cruiser in port after her action at Zeebrugge Mole on April 23, 1918
Imperial War Museum

VINDHYA. Hill range of India. It forms part of the N. edge of the Deccan plateau, with a steep slope S. to the Narbada valley and a gentler one N. to the Malwa Plateau.

VINDICTIVE. British cruiser. She was of 5,700 tons and carried ten 6-in. guns. Then obsolete, she was fitted up to take part in the attack on Zeebrugge, April 23, 1918. The Vindictive went alongside the mole and landed a party of men in the face of heavy enemy fire. The Vindictive got safely away from Zeebrugge, and on May 10 of the same year was run into Ostend Harbour and sunk to block the channels. She lay there until raised and berthed in Ostend Harbour in Aug., 1920. A new Vindictive, a light cruiser of 9,750 tons, was subsequently added to the navy. See Ostend; Zeebrugge.

VINE (*Vitis vinifera*). Climbing shrub of the order Vitaceae. It is believed to be a native of Asia Minor, and has been cultivated from the earliest times. It has slender woody stems of great length, which cling to trees by means of tendrils. The large, lobed leaves have toothed edges, and the small green flowers are clustered in racemes. The five petals are



Vine in the gardens of Hampton
Court, planted in 1768

VIRCHOW, RUDOLF (1821-1902). German scientist. Born at Schivelbein, Pomerania, Oct. 13, 1821, he had a medical training in Berlin, and in 1847 was appointed lecturer at the university. The same year he was appointed to study the causes and cure of typhus. He was appointed professor of pathological anatomy in Würzburg, and in 1856 to the similar chair in Berlin. He was elected to the Prussian diet, 1862, and became leader of the opposition.



Rudolf Virchow,
German scientist

In 1858 he published his Cellular Pathology, which stamped him at once as one of the most original thinkers of his profession. He died in Berlin, Sept. 5, 1902.

VIRGIL OR **VERGIL** (70-19 B.C.). Roman poet, whose full name was Publius Vergilius Maro. Born Oct. 15, 70 B.C., at Pietole, near Mantua, the son of a small landowner, he was educated at Cremona, Milan, Naples, where he learned Greek, and Rome, where he studied rhetoric and philosophy. After the battle of Philippi his father's estate was made over to the veterans who had fought for Octavian against Brutus and Cassius.

On the advice of his friend, Asinius Pollio, Virgil journeyed to Rome, and made a personal appeal to Octavian. There is some obscurity as to the result, but, if Virgil did not finally recover his property, he received compensation in the form of an estate in Campania. His visits to Rome secured him the patronage of Maecenas and the friendship of Horace. Relieved from financial anxiety by the generosity of Maecenas, he was able to devote himself undisturbed to literary work. From 37 onwards his life was spent alternately in Rome and Naples. In 19 he visited Greece. He died Sept. 21, and was buried at Naples.

The poems universally recognized as the work of Virgil are: (1) Ten Eclogues (selections) or Bucolics (pastoral poems), written 42-37 B.C.; (2) The Georgics (37-30), or Treatise on Agriculture, a didactic poem in four books, dedicated to Maecenas; (3) The Aeneid, an epic poem in 12 books. Inspired from Homer—the first six based on the Odyssey, the last six on the Iliad—its purpose was the glorification of the Julian house represented by Augustus, the reputed founder of which was Ascanius, the son of Aeneas (q.v.).

In 1930 the 2000th anniversary of the poet's birth was celebrated in Italy and England. There are memorials to him at his birthplace near Mantua and near Naples, where he died. The former takes the form of a grove in which are



Virgil, Roman poet, from a bust in the Capitol, Rome

all the flowers mentioned in the Georgics. His tomb at Naples was also restored.

VIRGINAL. Name applied to the spinet and harpsichord in the 16th century, probably on account of their being the favorite instruments of ladies, whereas gentlemen preferred the lute. See Harpsichord; Spinet.

VIRGIN BIRTH, THE. Term for the doctrine that Jesus Christ, alone of all the human race, was born of one human parent, that by the miraculous conception of the Virgin no birth-sin was passed on to Him, and that He was thus born perfect Man. See Immaculate Conception; Incarnation.

VIRGINIA. State of the U.S.A. With an area of 42,627 sq. m., it is situated on the Atlantic coastline. The coast is low and marshy and comprises part of the Dismal Swamp. In the W. the Allegheny Range and the Blue Ridge enclose the fertile valley of Virginia. Chesapeake Bay, Hampton Roads, and the broad river estuaries contain excellent harbours. The rivers include the Potomac, Rappahannock, York, James, and Roanoke. Much tobacco is grown, other crops including maize, wheat, and oats. Coal, pig iron, and slate are worked. There are upwards of 5,000 m. of rlys. Richmond is the capital.

Virginia, named after Elizabeth, was the first permanent English settlement in America. The colony grew greatly in population and wealth owing to the tobacco industry. The Virginians, among them Washington, joined, for the most part, in the struggle for independence, and Virginia was one of the 13 original states. In 1928 a Virginian society put up a tablet at Blackwall, on the Thames, to mark the spot from which, on Dec. 19, 1606, the first permanent settlers embarked for America. Pop. 2,575,000.

VIRGINIA. Heroine of ancient Roman legend. Daughter of the centurion Lucius Virginus, her beauty inflamed the decemvir Appius Claudius, who suborned one of his supporters to claim her as his slave, and when the case came before him in his judicial capacity, declared her to be the man's property. Thereupon her father seized a knife and slew his daughter. A popular revolution broke out against the tyrannical decemvirs, and Appius Claudius committed suicide. The story is the subject of one of Macaulay's Lays of Ancient Rome.

VIRGINIA CREEPER (*Vitis quinquefolia*). Climbing shrub of the order Vitaceae, a native of North America. It has large digitate leaves and inconspicuous green flowers much like those of the grape vine. It climbs with the aid of branching tendrils, the branches ending in adhesive disks which cling to brick or woodwork. Veitch's creeper (*V. inconstans*), with small glossy leaves and short leafstalks, is a native of Japan. Both species are remarkable for their foliage, which assumes glowing red tints in the autumn. See Vine.

VIRGINIAN DEER (*Odocoileus virginianus*). Species of deer found in Canada, the U.S.A., and in parts of S. America. It is about 3 ft. high at the shoulder, and the coat is reddish brown in the summer and greyish in the winter. The antlers are comparatively large and well branched,

and the bushy white tail, held erect when the animal is running, is characteristic.

VIRGINIAN STOCK (*Maleolmia maritima*). Annual herb of the order Cruciferae. A native of the Mediterranean region. It was introduced to British gardens in 1713. It has erect, branching stems, 6-12 ins. in height, with alternate elliptical leaves and bright flowers ranging in tint from white to rose. It is a favourite edging plant in gardens.



Virginian Stock. Leaves and flowers of the edging plant

VIRGINIA WATER. Artificial lake in Windsor Great Park, on the borders of Surrey and Berkshire. About a mile from Virginia Water station on the Southern Rly., it is 1½ m. long and about ½ m. across at its widest part. The original marshland was drained and the lake created in 1746 by the duke of Cumberland with the aid of Paul Sandby. Notable features are the cascade, cavern, and a colonnade brought by George IV from the ruins of Leptis Magna, in Tripoli. Near is Belvedere Fort, a residence of the prince of Wales.

VIRGIN ISLANDS. Group of the Leeward Islands. Anegada, Virgin Gorda, Tortola and others belong to Great Britain; and Crab or Vieques, Culebra, St. Thomas, Ste. Croix, St. John and others belong to the U.S.A. The American group were purchased from Denmark in 1917 for £5,000,000. The British Virgin Islands have an area of 58 sq. m., and the U.S. islands cover 132 sq. m. Road Town, on Tortola, is the port of entry and the capital of the British islands, which are under a nominated executive council. Pop. Brit., 5,082; U.S., about 20,000. See West Indies.

VIRGO (Lat. the virgin). Sixth sign of the Zodiac. It is one of the constellations known to the ancients. Gamma Virginis is a celebrated double star. Alpha Virginis is the star Spica, a double star of the first magnitude. See Constellation.

VIROCONIUM OR **URICONIUM**. Romano-British town on the site of Wroxeter, Shropshire. It was established as a military fort by Claudius for the XIV legion about A.D. 45; when the legion withdrew in 70 a municipal town quickly developed. Within its walled enclosure were a town hall, public baths, and fine houses of Italian design. The junction of Watling Street and of roads from Caerleon and Chester, it attained much opulence. Excavations have revealed rows of colonnaded shops, a temple, bronze foundry, etc.

VIRTON. Town of Belgium. It is in the extreme S.W. close to the French border, slightly S. of Arlon and E. of Montmédy. Pop. 3,600. The name is given to the battle fought Aug. 21-25, 1914. The French plan was to advance N. on a front of 60 m. from the French frontier between the Meuse and German Lorraine. They found themselves confronted with superior German forces, and after incurring heavy losses were forced to retreat. In one division of the colonial corps the French loss was 8,000 out of 12,000 infantry. The Germans captured numerous guns.

VISCACHA (*Agouti*). Genus of small rodents. They belong to the chinchilla group, which occurs in S. America. The animal is



Virginia Creeper.
Hanging sprays of leaves



Viscacha. Small nocturnal rodent of South America, allied to the chinchilla

W. S. Berridge, F.Z.S.



Viper's Beggloss.
Flower spike of the British plant.
See p. 1393

about 20 ins long, and has grey fur mottled with black on the upper parts and white beneath, and black and white stripes on the face. It is found in warrens, is nocturnal in habit, and feeds upon grass and roots.

VISCHER, PETER (1455-1529). German sculptor. Born at Nuremberg, he studied in Italy. His most famous work was the monument of S. Sebald in the church of that name at Nuremberg. In this work, which occupied him 13 years (1506-19), he was assisted by his five sons. The tomb of Archbishop Ernest at Magdeburg may also be cited. He died at Nuremberg.

VISCONTI. Name of a noble Lombard family, lords of Milan, 1277-1447. The first member of importance was Ottone (1215-95), archbishop of Milan in 1262. After his death the temporal power was assumed by his grand-nephew Matteo (1255-1322), who became lord of Milan. Involved in a quarrel with the pope, shortly before his death he abdicated in favour of his son Galeazzo (1277-1328), who married Beatrice d'Este, and was succeeded by his son Azzo (1302-39). In 1349 the lordship of Milan passed to Galeazzo's brother Giovanni, archbishop of Milan, and a patron of learning and letters, and on his death was divided between his three nephews, Matteo, Galeazzo, and Bernabo. The next of importance was Giangaleazzo (1347-1402). He extended his rule over Verona, Padua, and elsewhere, and was granted the title of duke in 1395. He died of the plague, Sept. 3, 1402. The family died out in the male line in 1447, when its power passed to Francesco Sforza, who had married one of the Viscontis.

VISCONTI-VENOSTA, EMILIO MARCHESE (1829-1914). Italian statesman. Born at Milan, Jan. 22, 1829, he was one of Mazzini's most active followers until 1853, when he realised that the salvation of Italy lay rather with Cavour than with the republican party. In 1859 he was nominated royal commissioner with Garibaldi's army. Foreign minister, 1863-64, 1866-67, 1869-70, 1896-98, and 1899-1901, his terms of office were marked by wisdom and tact, especially during the difficult situations created by the war with Austria, 1866, the Franco-Prussian War, 1870, the occupation of Rome, 1870, the Abyssinian disaster of 1896, and the Balkan troubles of 1897-98. He died in Rome, Nov. 28, 1914.

VISCOSE. Name given to artificial silk prepared from wood pulp or cotton by digesting with caustic soda and treating with carbon bisulphide. See Artificial Silk.

VISCOSITY (Lat. viscus, bird-lime). Internal friction, or resistance, to the motion of molecules of a fluid body among themselves. If a liquid flows over a horizontal surface, the layer of liquid next to the surface tends to adhere to it by cohesion, and the velocity of the fluid particles above this layer becomes greater the more distant they are from the bottom. Different liquids have different degrees or coefficients of viscosity, and these may vary at different temperatures.



Viscount. Coronet of English viscount

VISCOUNT (Lat. vicecomes). Title of nobility. In the British peerage it ranks fourth, being between earl and baron. The feminine is viscountess. A viscount's children are entitled to the prefix "hon."

The title came to England from France, where the viscount was at first simply the deputy of the comte or count. The first creation in England dates from 1446. The oldest existing viscounties are, in Ireland, that of Gormanston (1478), and in England, that of Hereford (1550). See Coronet; Count; Peerage.

VISHNU (Skt. worker). One of the three chief gods of Hinduism. Originally of minor importance, and perhaps a sun-god, he came to be regarded by his worshippers as the supreme Deity, and hence was associated with Brahma and Siva in the Trimurti or triad, in which his character was that of the preserver. He is the genial, kindly patron of the prosperous classes, and his rites though often licentious, are free from bloodshed. Vishnu is represented as a man, painted black, with four arms, riding on the Garuda, half-man and half-bird. See Hinduism; Trichinopoly.

VISIGOTH. Branch of the Gothic people which in the 3rd century A.D. lived W. of the river Pruth. It separated from the Ostrogoths about A.D. 250, and at that time occupied a region approximately corresponding to the modern Rumania. The later history of the Visigoths, which closed with the overthrow of their Spanish kingdom by the Mahomedans in 711, is part of that of the Goths (q.v.).

VISION. Act or sense of seeing. The duration of any stimulus necessary to produce a visual sensation may be exceedingly short, and depends upon the intensity of the exciting source. An image persists for some time after the stimulus has been removed. Among the many different theories accounting for the perception of colour, that most favoured is Koenig's, which is that there are three separate cones for distinguishing red, green, and violet. Animals, e.g. the earthworm, which are eyeless respond to light through the skin. See Eye Sight.

VISITATION. Ecclesiastical term for the office of inquiry performed at intervals by bishops and archdeacons in dioceses and parish churches. The episcopal inquiry is made concerning the state of religion in the diocese, and the office includes the administration of confirmation and the delivery of an address which is called a charge. Archidiaconal visitations are directed more particularly to temporal matters, e.g. the repair of churches, etc. In England diocesan visitation was instituted by Grosseteste (1175-1253).

The order of the Visitation is a religious order for women. Founded by S. Francis de Sales and S. Jane Frances de Chantal, in 1610, at Annecy in Savoy, it was designed for the care of the sick and the relief of the poor, but is now a strictly enclosed order of nuns devoted to a life of contemplation. The Sisters of the Visitation are a separate congregation.

The Visitation of the Blessed Virgin Mary is a feast instituted by Pope Urban VI in 1389 in commemoration of the visit paid by the Blessed Virgin to her kinswoman Elizabeth (Luke 1). In 1441 the council of Basel directed that it should be observed in all Christian churches. In the Church of England calendar it is fixed for July 2. See Magnificat; Mary.

VISITOR. Literally, one who visits. In a special sense it is used for an inspecting officer. All charitable corporations, including colleges at universities and certain schools (in law, charitable corporations), have a visitor, who makes a periodical examination to ensure the execution of the founder's wishes. In the case of hospitals and similar institutions the visitor's functions now mainly devolve upon the charity commissioners. In the last resort the sovereign is the visitor.

VISTULA. River of Central Europe, almost entirely in Poland. It rises in the W. Beskids, about 20 m. S.E. of Teschen, and flows N., then N.E. past Cracow, turns N. again past Warsaw, Plock, and Thorn (Torun), and enters the Baltic by several mouths at the

free city of Danzig (q.v.), after a course of 630 m. Its chief affluents are the San, Wieprz, Bug, and Pilica. Since the Great War the control of the Vistula has caused certain difficulties and the amount of trade on it has declined.

VITAMINE. Term for substances found in recent years to be present in natural foods in very small amount, but which exercise an important influence upon nutrition. Their chemical nature is not known, and they have not yet been isolated in pure form. Three vitamins have been recognized. The first is anti-scorbutic vitamin, and when this is completely absent from the diet scurvy rapidly ensues. It is present in fresh meat and fresh vegetables. The second is a vitamin soluble in water, the absence of which from the diet causes the disease beri-beri to supervene. It is present in the seeds of plants, eggs, and fish-roe. In cereals the largest quantity of this vitamin is contained in the embryo or germ. The third vitamin is associated with fats, and is known as fat-soluble vitamin. When absent from food, general nutrition fails. This vitamin is present in butter, and is absolutely essential to growth. Vitamins in food are destroyed or reduced in amount by cooking or by processes of preservation.

VITELLIUS, AULUS (d. A.D. 69). Roman emperor from Jan. 2 to Dec. 22, A.D. 69. He was in command of the legions of Lower Germany when the news of Galba's accession reached these parts. His own troops and those of Upper Germany refused to acknowledge the new emperor, and Vitellius was proclaimed emperor at Cologne. In July Vitellius reached Rome and gave himself up to gluttony. The legions of Illyricum declared Vespasian as emperor, and, advancing into Italy, they entered Rome and put Vitellius to death.

VITERBO. City of Italy. It is 54 m. by rly. N.N.W. of Rome. With its well-preserved walls and numerous medieval buildings, it maintains its ancient aspect. The cathedral and the church of San Francesco contains the tombs of popes. The Palazzo Municipale has a museum of Etruscan antiquities. Pop. 35,794.



Vitrina fasciata, a typical species of the small glass snail

VITRINA. Genus of small snails, nearly related to the slugs. The shell is very thin and transparent, and the animals are often known as glass snails. They have the peculiarity of being about in the winter when other species are hibernating. Two species occur in the United Kingdom, *Vitrina pellucida* and *V. pyrenaica*.

VITRUVIUS POLLIO, MARCUS (fl. 10 B.C.). Roman architect and author. A North Italian, he was probably employed by Julius Caesar as a military engineer in the African war, 46 B.C., and worked as an architect under the patronage of Augustus, to whom he dedicated his work in ten books, *On Architecture*, about 16-13 B.C. The work of Vitruvius has a peculiar interest, as it is practically the only surviving original authority on classical architecture. As such it exercised enormous influence when classical architecture was revived.

VITTORIA OR VITORIA. City of Spain. It is 30 m. S. of Bilbao. The cathedral of Santa Maria and the church of San Vicente are medieval fortress churches which have been restored. Pop. 36,762.

The battle of Vittoria was fought June 21, 1813, between the British and Portuguese under Wellington and the French. Wellington made a successful frontal attack and cut off the French from the Vittoria-Bayonne road.

VITTORIO VENETO, BATTLE OF. Fought between the Allies and the Austrians, Oct., 1918. This is the official Italian name of the

great offensive which opened on Oct. 23 and ended in the complete military collapse of Austria on Oct. 31, but it is also described as the third battle of the Piave (q.v.)

VITUS. Christian martyr and saint of the 4th century. He is said to have been born in Sicily, of a noble family, and to have been converted to Christianity by his nurse, Crescentia. Enraged by this, his father handed the boy over to Valerian, the governor, who tried in vain to change his faith. He then escaped to Italy, and was martyred. He is the patron saint of dancers, and was formerly invoked against various complaints, notably chorea (q.v.) or St. Vitus's dance. He is the patron saint of Saxony. His festival is June 15.

VIVARINI. Name of a family of Italian painters belonging to Murano, near Venice. Antonio Vivarini (c. 1420-70) was the founder of the Muranese school. Bartolommeo (c. 1423-99), was a younger brother of Antonio, and probably studied under him. He is said to have been the first Venetian to use the new oil medium, though his most successful works are frescoes. Alvise or Luigi (c. 1446-c. 1502) was the son of Antonio, and probably the pupil of Bartolommeo. See p. 416.

VIVIANI, RENÉ (1863-1925). French statesman. Born in Algeria, Nov. 8, 1863, he was educated for the law, but soon turned to politics. As a socialist he entered the chamber in 1893. In 1906 he accepted office as minister of labour, and he retained that post until Oct., 1910. In Dec., 1913, he was minister of public instruction. In June, 1914, he became prime minister. He re-organized his cabinet after the outbreak of the Great War as a war ministry, and until his resignation in Oct., 1915, he was one of France's most powerful forces. He accepted office under Briand as minister of justice in 1915, but resigned in March, 1917. In 1920 he was one of France's representatives at the first assembly of the League of Nations, and later became her permanent representative. He died Sept. 7, 1925.

VIVIANITE. In mineralogy, a hydrated ferrous phosphate. The mineral, usually associated with iron, copper, or tin ores, is blue to green in colour with a pearly lustre. Alternatively known as blue iron earth, it is named after J. H. Vivian, the mineralogist.

VIVISECTION (Lat. vivus, alive; secare, to cut). Operation on a living subject for the purpose of advancing the science of medicine. The vast majority of experiments, however, are not operations but inoculations, blood tests, feeding experiments, etc. First practised by Herophilus about 300 B.C., in the 19th century vivisection was taken up on a much larger scale, one of those who made great use of it being Pasteur. The development of vivisection led to an agitation against it, especially in Great Britain, and societies were founded to check it, the supporters of vivisection replying in 1908 by establishing the Research Defence Society. In the United Kingdom experiments performed on animals are strictly controlled by a system of licensing.

VIZIER (Arab. wazir, from wazara, to support). Oriental title held by the minister of the Abbasside caliphs. In Turkey, the head of each department of the council was styled vizier, and the sultan's chief minister was the grand vizier. The title was held by the chief officer of the Mogul emperors.

VLACH OR **WALLACH.** People of mixed stock, mostly in the Balkan peninsula. The name, applied by their neighbours, is some-

times considered a variant of Welsh, foreigner. Estimated at 10,000,000, they call themselves Ruman, and apparently represent the neolithic long-headed Balkan population, affected by pastoral nomads immigrant from the E., possibly by the romanised Dacian stock, and by Greek and Slav infiltration.



Vladivostok. The harbour; in winter a channel is kept open by ice-breakers

VLADIVOSTOK. Town and harbour of Soviet Asia, in the Far Eastern area. On Peter the Great Bay, in the sea of Japan, it is the Pacific terminus of the Trans-Siberian Rly and the largest Soviet port on the Pacific. The town was founded in 1860. There is a fine harbour, but ice-breakers are required to keep open a channel during the winter.

During the Russo-Japanese War a Russian squadron was based on the port, but in Aug., 1904, in an attempt to unite with the Port Arthur fleet, it was defeated and took no further part. After the Russian revolution, 1917 and the formation of the Bolshevik government, Vladivostok became of great importance for the Allies as the only base for the Czechoslovak army, and was occupied by them. Pop. 107,977.

VOCALION. Harmonium invented in the last quarter of the 19th century by James Baillie-Hamilton. Its broad free reeds were acted upon by high wind pressure, and it possessed great purity and variety of tone, but notwithstanding its merits it never became a commercial success.

VODKA. Russian alcoholic beverage. A spirituous liquor, it is distilled from rye, barley, oats, potatoes, or maize. A crude, strong spirit, it contains up to 95 per cent. of alcohol, although for consumption this percentage is diluted down to 50 or thereabouts. Its consumption was forbidden in Russia during the Great War. Its sale as a state monopoly was permitted again in 1922.

VOGLER, GEORG JOSEPH (1749-1814). German musician. Born at Würzburg, June 15, 1749, he studied music and theology in Italy, and, ordained priest in Rome, 1773, was generally known as Abbé Vogler. His life was spent in almost continuous travel all over Europe, with sojourns of some duration at Mannheim and at Stockholm, where he established music schools. In 1790 he visited London, where he gave organ recitals. In 1807 he became court master of the chapel at Darmstadt, where he opened another music school. He died there, May 6, 1814.

VOICE (Lat. vox; Fr. voix; O. Fr. vois). Sound produced by the vibration of the vocal cords in the larynx by a current of air driven against them from the lungs. The tones of the voice are lower in men than in women and children, because of the greater length of their vocal cords. In the falsetto voice, part of the cords are held rigid, and only part allowed to vibrate. Loss of voice may be due to hysteria or paralysis of the larynx, or to cancer and other diseases of the vocal cords or adjacent structures. See Larynx; Speech

VOICE CULTURE. The art of developing the latent possibilities of a voice and of training it in such a manner as to produce a full and resonant quality of tone, and to attain ease and certainty of execution.

VOIL. Lake or loch of Perthshire. It lies 8 m. S. by W. of Killin. Its maximum length is 3½ m. It is linked with Loch Doine.

VOLAPÜK (corrupted from English world-speak). Name given to a system of universal language, invented in 1879 by J. M. Schleyer, a priest of Constance, Baden. The alphabet consists of 26 letters, 8 long vowels, and 18 consonants.

There is one declension and one conjugation, subject to no exceptions. Adjectives are derived from substantives. All words are accented on the last syllable. The vocabulary consists of some 15,000 words, mostly monosyllabic. About a third of the words are of English origin. See Esperanto.

VOLCANO. Vent in the earth's crust through which molten rock reaches the surface. A volcano is not necessarily a mountain, although in process of time the ash or lava from the eruptions forms an ash cone like Vesuvius, 4,013 ft. in height, or a lava cone like Mauna Loa in Hawaii, which rises to 13,760 ft. above sea level or 30,500 ft. above the ocean floor. Nor is a volcano a furnace, as the cone does not burn, although the lightning flashes and the reflected red glow of the crater from the under surface of steam clouds gave the ancients the idea of combustion. Etna, Fujiyama, and Mt. Egmont are beautifully symmetrical cones slightly truncated by the crater at the top. Other volcanoes are disfigured by the appearance of parasitic cones due to minor eruptions at weak spots on the sides, or by the results of later eruptions, like that of Krakatoa, which blew away half the former cone. See Cone; Cotopaxi; Egmont; Etna; Krakatoa; Lava; Popocatepetl; Tenerife; Vesuvius.

VOLE. Genus of small rodents. They are commonly confused with rats and mice, from which they are distinguished by their short tails, blunt heads, and comparatively bulky bodies. Three species occur in England and Scotland. The field vole (*Microtus agrestis*), commonly called the field mouse, is a little larger than a house mouse and has brown fur on the back and greyish white beneath. The bank vole (*Evotomys glareolus*) is slightly smaller. The water vole, commonly known as the water rat, has soft yellowish brown fur, and is 8 ins. long in body.



Vole. Small aquatic rodent, often called a water rat, on a stone

VOLGA (ancient Rha). River of European Russia. It rises in a small lake in the Valdai plateau in the prov. of Tver, flows E. as far as Kazan, where it turns S., finally entering the Caspian Sea through a delta with many mouths. It is from 2,000 to 2,500 m. long, and is navigable for nearly the whole of its course. Its waters abound in fish, especially salmon and sturgeon. Canals, uniting its tributaries to those of the Neva, form a medium of communication between the Caspian and the Baltic, and others with the Black and White Seas. Its tributaries include the Oka, Sura, Kama, and Samara. Important towns on its banks are Tver, Yaroslavl, Kostroma, Nijni-Novgorod, Kazan, Ulianovsk (Simbirsk), Saratov, and Astrakhan.

The republic of the Volga is an autonomous republic of the Socialist Soviet Union, created in 1923. It is largely peopled by Germans, who were introduced in the 18th century. Pokrovsk is the capital. The area is 9,627 sq. m. Pop. 571,089.

VOLSTEAD ACT. Name of the Act of Congress that declared the sale of liquor illegal in the United States. It is the 18th amendment to the constitution and was passed on Jan. 29, 1919. The name is that of one of its promoters. See Prohibition.

VOLT. In electricity, the unit of electromotive force, pressure, tension, or potential difference. One volt is the electrical pressure which, if steadily applied to a conductor whose resistance is 1 ohm, will produce a current of 1 ampere. It is so named from Alessandro Volta (1745-1827), the Italian physicist, who made many discoveries in electricity. It is an instrument to measure potential difference in volts. It is usually a sensitive graduated galvanometer.

VOLTAIC CELL. Primary cell in which chemical energy is converted into electrical energy. The standard voltaic cell is Clark's, which, at 15° C., gives an electromotive force of 1.434 volts.

VOLTA. River of W. Africa. It rises in the French Sudan in two headstreams, the Black and White Volta, and flows through the jungle forest of the Gold Coast Colony S.E. and S. to the Bight of Benin at Adda. Its total length is about 900 m.

The colony of the Upper Volta is a part of French W. Africa, formed in 1919 from the S. section of the Upper Senegal Niger Colony (French Sudan). Ouagadougou is the capital. The area is about 142,000 sq. m. Pop. about 3,000,000, including some 450 Europeans.

VOLTAIRE. Assumed name of the French writer, François Marie Arouet (1694-1778). He was born in Paris, Nov. 21, 1694, the son of a notary, and was educated by the Jesuits. He reluctantly studied law for a while, but subsequently lived on an allowance, dabbling in literature and making his way in society by his wit and manners. He made his mark as a dramatist with his *Oedipe*, produced in 1718.

In 1725 Voltaire's talent for epigram gave offence to the *Chevalier de Rohan-Chabot*, whose lackeys chastised him in their master's presence. In vain he sought redress, and when it became known that he was taking lessons from a fencing master with a view to a duel, he was sent to the Bastille, and on his release obtained permission to go to England, where he remained from May, 1726, until early in 1729. While in England he published his epic, the *Henriade*, and wrote his *History of Charles XII* and his *Letters on the English*. Soon after his return to France Voltaire amassed a fortune by speculation. In 1734 the French government, enraged by the appearance of his *Letters on the English*, issued an order for his arrest, but left him unmolested when he took refuge in the country house of Mme. du Châtelet, at Cirey. This friendship, though punctuated by frequent quarrels, continued until her death in 1749. Works written during those years include the plays *Méropé* and *Mahomet*, *Dialogues on Philosophy*, the scandalous *La Pucelle*, and *The Age of Louis XIV*. In 1746 he was elected a member of the French Academy of Letters.

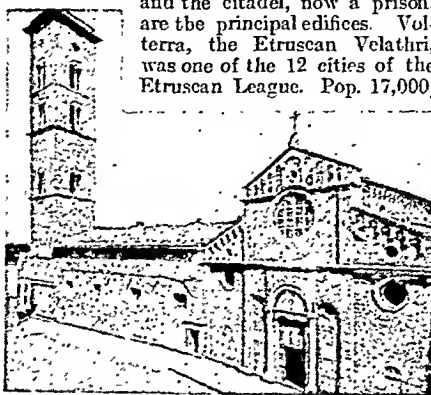
After the death of Mme. du Châtelet Voltaire was persuaded to take up his residence at the court of



Voltaire,
French writer
After Largillière

Frederick the Great, who had conceived a boundless admiration for his talents. He was received almost as a demigod, but his relations with his royal patron gradually became strained. Voltaire, after some wanderings in Alsace and Switzerland, finally settled at Ferney, on French soil, but close to Geneva. He established important industries on his estate; he wrote books of all kinds, including his brilliant satirical tale, *Candide*, 1759; and conducted a voluminous correspondence. Voltaire died May 30, 1778, and his remains were transferred to the Panthéon in 1791.

VOLTERRA. City of Italy. It stands at an elevation of 1,800 ft. on a hill, encircled by its massive ancient walls, 51 m. by rly. S.E. of the city of Pisa. The cathedral (1120), the Palazzo Municipio (1208), and the Palazzo Tagassi, with a national museum, and the citadel, now a prison, are the principal edifices. Volterra, the Etruscan Velathri, was one of the 12 cities of the Etruscan League. Pop. 17,000.



Volterra, Italy. West front of the cathedral, consecrated in 1120 and enlarged in 1254

VOLTURNO. River of Italy. It rises in the Apennines, and flows S.E., then W. past Capua to the gulf of Gaeta in the Tyrrhenian Sea. It has a length of about 105 m. On its banks Garibaldi defeated the army of Naples.

VOLUNTARY AID DETACHMENT. Bodies of civilians, some of men and some of women, numbered and registered at the War Office. They were organized in every county of the United Kingdom to render first aid in case of invasion. Previous to the Great War, the detachments of the British Red Cross and Order of St. John were organized to be ready at a moment's notice, and in Oct., 1914, the women decided to work together as a joint committee known as the Voluntary Aid Detachments, popularly known as V.A.D.'s.

In 1918 those attached to the brigade of the Order of St. John numbered 65,000 (44,000 men and 21,000 women), with 10,000 overseas, while the Red Cross Society had over 3,000 detachments with a personnel of over 90,000 (24,000 men and 66,000 women). See Nursing; Red Cross.

VOLUNTEER (Lat. *voluntarius*, of free will). Term applied in a special sense to those who offer to serve the state in a military capacity. In Great Britain voluntary training for home defence on a national scale dates from the Napoleonic wars, though the train bands of Stuart times were largely a volunteer force. In 1859 the renewed fear of invasion brought about the formation of volunteer rifle corps, and the National Rifle Association was founded in the same year. An Act of 1863 defined the conditions of service of the new force, and authorised a capitation grant of 30s. a year in respect of each efficient volunteer.

Battalions of infantry were raised in the towns and counties, and each was attached to the regiment of the line which had a connexion with the locality. An officer of the regular army was appointed as adjutant, and he

supervised the training. The yeomanry, also raised on a county basis, were in reality mounted volunteers. This force lasted until 1907, when the army was reorganized and the volunteers became the Territorial Force (q.v.).

On the outbreak of the Great War volunteer units were formed, but the force was not officially recognized until April, 1916. It rendered good service in various ways until disbanded in Nov., 1919.

IRISH VOLUNTEERS. The first units of this force were raised in 1779 for home defence. The example of Ulster in raising volunteers in 1914 was promptly followed by the Nationalists in the rest of Ireland, and after the Dublin rebellion, 1916, the Irish volunteers developed into the guerrilla force known as the "I.R.A." See Ireland; Sinn Féin.

VOLUTE. In architecture the spiral scroll forming the principal feature of the Ionic capital and of the Roman composite capital. See Composite Order; Ionic Order.

VOLVOX. Genus of small flagellate protozoa, common in many ponds. It lies so nearly on the border line between the animal and vegetable kingdoms that most botanists class it as a green alga. It consists of a hollow sphere of unicellular individuals, each possessing two flagellae, and the whole united together by a gelatinous envelope. In the common pond species, *Volvox globator*, there may be as many as 10,000 individuals in the colony, which progresses by rolling along in the water. Like the plants, the cells contain chlorophyll, and build up starch granules. Reproduction is both sexual and asexual.

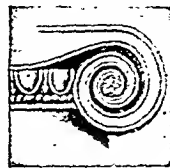
VOODOO or *Vaudoux*. Superstitious cult current in some W. Indian islands, especially Haiti. Introduced by early slaves recruited from Dahomé, its secret rites, performed by a priest and priestess, are based upon the worship of the green snake.

VORARLBERG. Province of the republic of Austria, formerly of the empire of Austria-Hungary. The name, meaning the land beyond the Arlberg Pass, was given to it in the 18th century, when certain small areas were united under this name. It adjoins Bavaria, Switzerland, Liechtenstein, and Tirol; parts of its boundary are formed by the Rhine and Lake Constance. It is drained by the Ill, and is almost wholly mountainous. The inhabitants are nearly all German Roman Catholics. Its area is 1,005 sq. m. Pop. 139,999.

VORONOFF, SERGE (b. 1866). Russian surgeon. Born July 10, 1866, and educated for the medical profession in Paris, Voronoff became a surgeon there. Later he was made director of a biological laboratory and then director of experimental surgery in the Collège de France.

Voronoff's name is prominently associated with attempts at rejuvenation by the transplantation of the sexual glands of young animals. In the lower animals those of an animal of the same species are used; in man those of one of the higher apes. Numbers of these experiments have been successful, the animal or man into whose body the vigorous gland is transplanted losing to a large extent the characteristics of senility and manifesting the vigour of a much younger individual.

VORTICELLA or *BELL ANIMALCULE*. Small protozoan, common in ponds. It resembles a bell with a ciliated mouth, and is



Volute in
architecture



Serge Voronoff,
Russian surgeon

attached to water plants and other objects by a slender stem. The minute organisms which serve as its food are swept into the gullet by the action of the cilia. The vorticella occurs in colonies, and the stem can be contracted.

VORTICISM. Name adopted in the early 20th century to describe an artistic movement on Futurist lines, and, like Futurism, including literature. The word vortex is used by the Italian C. D. Carra to denote the emotional condition of the Futurist artist, but actual vorticism seems to have originated in Great Britain. It insists upon the imaginative reconstruction of nature in formal designs, regarding the question of representation as irrelevant. Vorticist designs are in straight lines and angular patterns. See Futurism.

VORTIGERN (fl. 450). British king. Reigning in the S. and E. of England when Hengist and Horsa came to Britain, he enlisted the Saxons against the ravaging Picts and Scots, and granted them part of Kent as the price of their service; but eventually he waged war against them and was compelled to cede large portions of territory in Essex and Sussex.

VOS, MARTEN DE (1532-1603). Flemish painter. Born at Antwerp, he studied under Frans Floris and in Rome and Venice. He became a fine and facile colourist, painted portraits of the Medici family and other illustrious Italians, and executed important decorations for the churches of Antwerp, where he was dean of the S. Luke's Guild in 1572. He died at Antwerp, Dec. 17, 1603.

VOSGES. Mountain range of France. It forms the W. edge of the basin of the middle Rhine opposite the Black Forest, and is separated at its S. end from the Jura Mts. by the Gate of Burgundy. The lower slopes are vine-clad, up to 3,600 ft. they are forested with pine and beech, and above 3,600 ft. they are pasture land. There are summits exceeding 4,000 ft. Lead, silver, copper, rock salt, and coal are mined. See Alsace-Lorraine.

A department of France is called the Vosges. One of the most picturesque districts of the country, this includes the southern part of the Vosges Mts. and some beautiful river valleys. Épinal is the capital and the area is 2,300 sq. m. There was intermittent fighting in this area throughout the Great War.

VOTE (Lat. *vovere*, to vow). Act of indicating a preference at elections for representatives to parliament and other bodies. It is usually done to-day by ballot, i.e. marking a paper, a method which has the advantage of secrecy, although voting by show of hands, with the right of claiming a ballot, is still usual at company meetings and for other purposes. Voting is also the usual way of deciding in legislative and other assemblies the fate of a proposal, but here it is usually open voting, not voting by ballot.

In 1929 there were 29,850,776 persons entitled to vote at the general election of that year in Great Britain and Northern Ireland. Of this number 22,657,164 actually voted.

An instrument called a voting machine has been invented for recording votes and used to some extent in the United States. A separate key is provided for each candidate, the keys being arranged in rows and numbered.

A vote of credit is a sum of money voted by the House of Commons in a time of emergency, such, for instance, as during the early days of the Great War. See Ballot; Election; Franchise; Proportional Representation; Representation; Suffrage.

VOW (Lat. *votum*). Generally, any solemn promise; in a religious sense, any voluntary and solemn promise made to God which may be physically but not morally violated. As the Christian Church developed two classes of vows were recognized (1) concerning gifts; (2) affecting conduct, as of chastity, pilgrimage, and vows of the religious orders. The Roman Catholic Church recognizes temporal, perpetual, conditional, absolute, simple, and solemn vows, and holds that the pope alone has the supreme authority to dispense from any but minor vows. The Church of England formally recognizes only the baptismal and marriage vows, though those of brotherhoods and sisterhoods are recognized by bishops at their discretion.

VRYHEID. Town o. Natal, S. Africa. It is 53 m. from Dundee and 290 m. from Durban, being connected by rly. with both. It stands at an alt. of about 4,000 ft. and is the centre of a district in which coal, iron, and gold are mined. After being in Zululand, Vryheid was given in 1884 to a group of Boers, who made it into a little republic. This he came part of the Transvaal in 1888. In 1902 it was transferred to Natal. Pop. (white) 2,127.

Vulcan. In Roman mythology, an old Italian deity, the god of fire. He was identified with the Greek Hephaestus (q.v.).

VULCAN. Hypothetical planet supposed to exist between Mercury and the sun. The French mathematician Leverrier calculated from perturbations of Mercury the position of the supposed planet. The general consensus of astronomical opinion is that Vulcan does not exist.

Vulcanite. Form of rubber made by mixing with sulphur. It is also known as ebonite (q.v.).

VULGATE (Lat. *vulgatus*, common). Name sometimes applied to the Septuagint (q.v.), but specifically to the Latin version of the Bible prepared by Jerome in the 5th century. Jerome's version was revised by order of Sixtus V. and issued in Rome in 1590, and revised again by order of Gregory XIV and issued in 1592. Contributions towards a revised text were made by Robert Étienne, 1528. In 1907 Pope Pius X appointed a commission, of which Cardinal Gasquet was president, to prepare the way for another official version. See Bible.

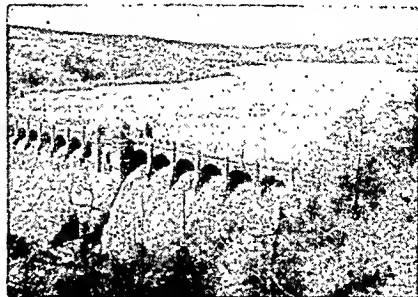
VULTURE. Family (Vulturidae) of large birds of prey. They differ from the eagles and hawks in having the head and neck—except in one genus—more or less bare of feathers. They all have long, hooked beaks; the plumage is often loose and untidy, and the claws are long and curved. They feed chiefly on dead animals and carrion.

The griffon vulture (*Gyps fulvus*), common in S. Europe, Asia, and N. Africa, is about 40 ins. long, and has grey and brown plumage with a large white ruff round the throat.

The Egyptian vulture (*Neophron percnopterus*) is about 2 ft. long, and has white plum-

age with a little brown and black. The cinereous or black vulture (*Vultur monachus*) is a larger bird; it has black plumage. The head and neck are partly covered with white down, the bare skin of the rest being dull red.

The American vultures are classed in a separate family—Cathartidae. The nostrils are connected and the contour feathers have no after-shaft. The bill is not so well fitted for attack; the claws are less curved and not so sharp. They include the condor, the king vulture and the Californian vulture. See Condor; Lämmergeier; Secretary Bird.



Vyrnwy. Reservoir for the water supply of Liverpool, formed by a dam across the Llanwydyan valley.

VYRNWY. River and artificial lake of Montgomeryshire, Wales. The river rises in Montgomeryshire and flows to the Severn. Its upper valley has been made into a lake to supply Liverpool with water. The work was begun in 1880, and the water is conveyed by pipes to the destination, 68 m. away. The length of the lake is nearly 5 m. and it covers nearly 2 sq. m. Its capacity is over 12,000 million gallons.

W. Twenty-third letter of the English alphabet. It has the value of both a vowel and a consonant. It is called double u, being in form VV (UU). Its phonetic relation to u is the same as that of y to i. At the beginning of its utterance it resembles a vowel, but when the sound is being completed it inclines more to the consonantal value. It is sometimes mute, as in two, sword, and always before r, as in wrath, wrong. Before h its articulation is reversed, what, which being more correctly, though not universally, pronounced as if written hwat, hwich; or it is mute, as in who, whole. It never has a consonantal value when final, in which case it is always combined with another vowel. See Alphabet; Phonetics.

WAAL. River of the Netherlands, a branch of the Rhine (q.v.). Not far from Nijmegen, the Rhine divides into the Neder Rijn and the Waal, the latter flowing W. until, 2 m. E. of Gorinchem (Gorkum), it is met by the Maas or Meuse and becomes the Mervede.

WADDESDON. Village of Buckinghamshire. It has a station 43 m. from London on the L.N.E. and Met. Rlys. Waddesdon Manor was built for Baron Ferdinand de Rothschild in 1880. Pop. 1,439.

WADDON. District of Croydon. It is 1 m. W. of the thorough proper, and has a station on the Southern Rly. During the Great War it was made an aircraft centre, and, considerably enlarged, afterwards became the terminus of the air lines to the Continent. See Croydon.

WADE, GEORGE (1673 - 1748). British soldier. Born in Westmeath, Ireland, he served in Flanders, 1692 and 1702-3, and in Spain, 1704-10, distinguishing himself at the battles of Almanza, 1707, and Saragossa, 1710.



Vulture. 1. Black vulture. 2. Griffon vulture. Both occur around the Mediterranean. W. S. Herridge, F.Z.S.



George Wade, British soldier.

After the Jacobite rebellion of 1715 he held the command in the Highlands, and from 1726-37 was engaged in the construction of military roads. Made a field-marshal in 1743, he commanded the British troops in Flanders in 1744. He died March 14, 1748.

WADEBRIDGE. Market town and urban dist. of Cornwall. It is 7 m. from Bodmin, with stations on the G.W. and Southern Rlys. A bridge of 17 arches, dating from about 1485, crosses the Camel estuary. The town has a trade in agricultural produce. Market day, Mon. (alternate). Pop. 2,319.

WADHURST. Parish of Sussex. It is 6 m. from Tunbridge Wells, with a station on the Southern Rly. The church has some interesting features, including a collection of local ironwork, and there are some old houses. In the grounds of Wadhurst Hall is a lake famous for the shooting it affords. Pop. 3,674.

WADY HALFA OR HALFA. Frontier town of Egypt. It is on the E. bank of the Nile, 949 m. by rly. N. of Khartoum and 811 m. S. of Cairo. A few miles S. is the second cataract.

WADY MUSA OR RIVER OF MOSES. Stream of Transjordan. It is said to have originated when Moses struck the rock (Num. 20, 7-13). On it are the ruins of Petra (q.v.).

WAFD. Name given to the nationalist party in Egypt. It arose about the end of the war period, when the Egyptians were agitating for independence. Its first leader was Zaglul Pasha. The party continued to exist after Egypt received its independence in 1922, its aim being to extend the authority of Egypt at the expense of that of Great Britain. The Wafdists won a sweeping victory at the general election of 1929. After the death of Zaglul in 1929 Nahas Pasha became their leader.

WAGES. In economics, the reward of labour, as opposed to interest, the reward of capital, and rent. In ordinary speech an artificial distinction has grown up between wages and salaries, the former being paid to manual workers and as a rule weekly.

The older economists held the doctrine of the wage fund, this being a certain sum out of which wages were paid. It could only, they held, be increased gradually, and consequently any considerable increase in the number of workers decreased the individual shares. The modern theory is that wages are paid from the total product and can increase almost indefinitely with an increase in that product.

In general their amount is decided by the relation between the supply of labour and the demand for it, but they will not as a rule rise beyond the amount which the particular industries can pay and remain solvent, or fall below the standard of living set up by the workers. History shows that rising wages invariably lead to an increase in the birth rate, which thus tends in time to lower them again. An important distinction is that between real wages, i.e. the amount of commodities the wages will purchase, and monetary wages. See Capital; Labour; Political Economy; Trade Union; Wealth.

WAGGA WAGGA. Town of New South Wales, Australia. It stands on the Murrumbidgee, 310 m. by rly. from Sydney. It is the centre of a pastoral and mining district. Pop. 8,930.

WAGNER, WILHELM RICHARD (1813-83). German composer. Born at Leipzig, May 22, 1813, he studied music there. In 1833 he was appointed chorus master at the theatre of Würzburg. In 1839 he went to Paris, where he stayed till 1842, when he removed to Dresden. Driven from Germany by the political upheavals of 1849, he passed the next twelve years in exile in Switzerland, England, Italy, and France; from 1861 to 1864 he was mainly in Vienna and Mainz, in increasing financial

distress, from which he was relieved by the gift of a pension from the king of Bavaria. From 1864-65 he was at Munich, and subsequently in Switzerland till 1872, when he removed to Baireuth, which remained his home till his death, at Venice, Feb. 13, 1883.



Richard Wagner,
German composer
After Lenbach
Photo: Bruckmann

The great bulk of Wagner's music was written for the stage. His operas are *Die Feen*, 1833; *Das Liebesverbot*, 1835-36—these two were not published during his lifetime; *Rienzi*, 1838-40; *Der fliegende Holländer*, 1840-41; *Tannhäuser*, 1844-45; *Lohengrin*, 1846-48; *Der Ring des Nibelungen*, a tetralogy consisting of *Das Rheingold*, 1853-54; *Die Walküre*, 1854-56, *Siegfried* (begun in 1857, abandoned for some years, and completed 1869), and *Götterdämmerung*, 1870-74, *Tristan und Isolde*, 1857-59; *Die Meistersinger von Nürnberg*, 1862-67; and *Parsifal*, 1877-82. He also composed some orchestral music, of which only a *Faust* overture and the *Siegfried-Idyll*, a serenade to his second wife, are of great importance; a handful of pianoforte and choral pieces of slight value; and some songs to French and German words. See Baireuth.

WAGRAM. Village of Austria, 11 m. from Vienna. Here a battle was fought between the French under Napoleon and the Austrians under the archduke Charles, July 5 and 6, 1809. The first French attack was repulsed, and the Austrians took the offensive. They succeeded in forcing back the French for some distance, but in a counter-attack the French caused the Austrians to withdraw. The French lost about 30,000 out of 180,000 troops engaged, and the Austrians 25,000 out of 130,000.

WAGTAIL (*Motacilla*). Genus of insectivorous birds. It is allied to the pipits. Wagtails are restricted to the Old World, except that the blue-headed species has been found in Alaska. They run instead of hopping. Three species breed regularly in the British Islands: the pied wagtail (*M. lugubris*), the grey wagtail (*M. boarula*), and the yellow wagtail (*M. Rallii*). In addition, the white wagtail (*M. alba*) and the blue-headed wagtail (*M. flava*) are visitors to Britain. The pied wagtail is a sprightly black and white bird. The white wagtail is similar, but its upper parts are grey instead of black. The grey wagtail, which haunts watersides in hilly districts, is blue-grey above.

WAHABI OR WAHHABI. Name of the members of a Mahomedan sect, founded early in the 18th century. Its adherents sought to recapture the simplicity of early Islam. They deprecated pilgrimage to holy places, invocation of saints, luxury in dress, and sepulture, and prohibited tobacco. In 1811 Mehemet Ali, viceroy of Egypt, organized an expedition which, after desperate struggles, broke the Wahabite power.

Early in the 20th century the power of the Wahabis was revived by Abdul Aziz. He founded settlements of them, and these furnished him with soldiers. The sect took a prominent part in the fighting in Arabia both during and after the Great War.

WAIHI. Town of North Island, New Zealand. It has rly. connexions with Thames and Auckland, and is the centre of a gold-mining area. Pop. 7,000.

WAIKATO. River of North Island, New Zealand. Rising in Ruapahu, it flows through Lake Taupo, N. through Auckland prov. into the Tasman Sea, 25 m. S. of Manukau harbour. Its length is 170 m.

WAINFLEET. Market town of Lincolnshire. It is 18 m. from Boston, on the L.N.E. Rly. Magdalen College, Oxford, was founded by William of Waynflete, who was born here. Market day, Sat. Pop. 1,375.

WAINSCOT. In joinery, a special quality of oak used for panels to cover the whole or part of a wall surface, hence the panels themselves used for this purpose. The term is derived from the Dutch *wagensehot*, the name of an oak species grown in Germany, and at one time exported in large quantity to Holland for re-export.

WAKE. Annual church vigil, also the all-night watching by a corpse before burial. The church wake was an all-night service commemorating the completion or dedication of a church, and was usually held on the patron saint's day, or on the Sunday after the day of dedication. Booths were erected in the churchyard for the supply of food and drink on the following day, which was a holiday, and the wakes soon became little more than uproarious fairs. Lancashire was long noted for its wakes, and the Bradford wakes were known as tides. The corpse wake survives

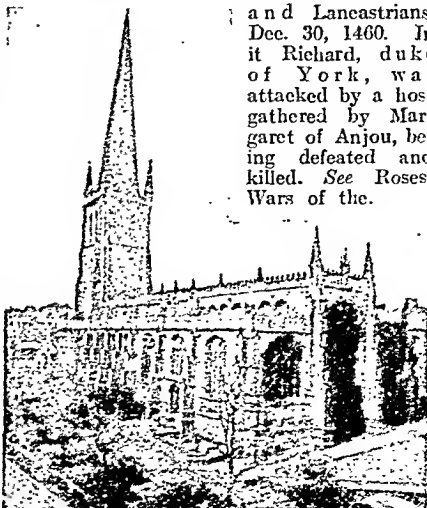
in Ireland. The annual holidays of Lancashire workers are called wakes. See Vigil.

WAKEFIELD. City, co. borough and market town of Yorkshire (W.R.). It stands on the Calder, 9 m. from Leeds, on the L.M.S. and L.N.E. railways. The cathedral is the former parish church of All Saints, a 15th century building with a fine spire. Other buildings include the town hall, corn exchange, and county buildings. On a bridge over the Calder is a beautiful Decorated chapel, restored in the 19th century. Six Chimneys is one of several old houses. The city is an agricultural centre. Manufactures include worsted, chemicals, soap, flour, and beer. Wakefield was a place of some importance in the Middle Ages. In the 16th century it became a centre of the cloth trade. In 1888 Wakefield became the county town of the west riding and the seat of a bishop. Market days, Fri. and Sat. Pop. 53,052.

The battle of Wakefield was fought between the Yorkists and Lancastrians, Dec. 30, 1460. In it Richard, duke of York, was attacked by a host gathered by Margaret of Anjou, being defeated and killed. See Roses, Wars of the.



Wagtail. Black and white, pied wagtail, a sprightly, insectivorous bird



Wakefield, Yorkshire. Cathedral church of All Saints, enlarged from the 15th cent. parish church

WAKEFIELD, EDWARD GIBBON (1796-1862). British statesman. Born in London, May 20, 1796, he was for a time in the diplomatic service. For abducting an heiress in 1826 he was imprisoned, 1827-29. In 1830 he wrote a book on capital punishment, which had an appreciable influence on the amelioration of the English criminal law. He made a close study of colonisation; assisted in the colonisation of South Australia, 1836; was secretary to the 1st earl of Durham in Canada, 1838; and helped forward the settlement of Canterbury, New Zealand. He died at Wellington, N.Z., May 18, 1862.

WAKE ROBIN, CUCKOO PINT, OR LORDS AND LADIES (*Arum maculatum*). Perennial herb of the order Araceae. A native of Europe



Wake Robin. Flowers and leaves of *Arum maculatum*

and N. Africa, it has a tuberous root-stock and large, spear-shaped leaves, often blotched with purple-black. The short flowering stem is surmounted by a large cowl-like spathe, yellow-green with a purple edge. Within this is the thick dull purple spadix, around the lower

half of which are clustered the simple flowers. The lowest of these are pistils, the upper stamens. The pistils develop into fleshy, scarlet berries, conspicuous in autumn when the spathe has withered. The plant is acrid and poisonous.

WAKKERSTROOM. Town and dist. of the Transvaal, S. Africa. The town lies 43 m. by rly from Volksrust, near the frontier of Natal, at an alt. of 5,900 ft., and is an agricultural and administrative centre. Pop. 1,490.

WAKLEY, THOMAS (1795-1862). British surgeon. Born July 11, 1795, he was apprenticed to an apothecary. Establishing a practice in Regent Street, London, in 1823 he founded *The Lancet* and set himself to remedy various abuses in the medical world. He died May 16, 1862.



Thomas Wakley, British surgeon
After K. Meadows

WALCHEREN. Island of the Netherlands, in the prov. of Zeeland. About 13 m. long and 10 m. broad, it lies in the Schelde estuary, W. of the islands of N. and S. Beveland, across which a rly. runs to the mainland near Bergen-op-Zoom. The surface is protected by dykes. Cereals are grown and cattle bred. Some fishing is carried on. Among the towns are Middelburg and Flushing.

In 1809 a British expedition under Lord Chatham was sent to attack Walcheren, then an important point in the French defences. After the landing on July 30, Flushing was invested and fell on Aug. 16. Fever broke out, and the island was evacuated, Nov.-Dec., 1809.

WALDECK OR **WALDECK PYRMONT**. Former republic of Germany, now part of Prussia. Covering 433 sq. m., it consisted of two detached portions, Waldeck, lying between Westphalia and Hesse-Nassau, and Pyrmont, farther to the N.E. Arolsen was the capital. Until 1918 it was ruled by a prince, who after 1868 was but a vassal of Prussia. In Nov., 1918, a republic was proclaimed, but in 1929 the little state was included in the Prussian prov. of Hesse-Nassau.

WALDECK-ROUSSEAU, PIERRE MARIE RENÉ ERNEST (1846-1904). French statesman. Born at Nantes, Dec. 2, 1846, he became a

barrister and mayor of Nantes, 1870. Entering the chamber of deputies in 1879, he was minister of the interior under Gambetta, 1881-82, and under Ferry, 1882-85. Having been an unsuccessful candidate for the presidency in 1894, he became premier in 1899, his administration being marked by the revision of the Dreyfus trial, 1899, and measures against the religious orders, 1901. He resigned in 1902, and died at Corbeil, Seine-et-Oise, Aug. 10, 1904.

WALDENSES OR **VAUDOIS**. Religious sect founded by Peter Waldo of Lyons in the 12th century. Their doctrines were based upon a literal interpretation of the moral precepts of the Bible. The sect was widespread in Provence, in Piedmont, and in the intervening mountain districts. They were subjected to periodical persecutions, and in the 16th century became attached to the Calvinistic branch of the reformers. Active persecution ceased in the 18th century, but the Waldenses continued to be excluded from civil rights till 1848.

A recognized Protestant Church, the Waldenses are still vigorous. Their church government is similar to the Presbyterian, and the latter church in England aids them financially.

WALES. Peninsula in the W. of Great Britain. In the N.W., separated from the mainland by the Menai Strait, is the Welsh island county of Anglesey.

The principality has a long irregular coastline, being bounded N., W. and S. by the sea. It is mainly a land of mountains. Snowdon, in the N., reaching 3,560 ft. The rivers include the Severn, Wye, Usk, Dee, Towy and Teifi. Bala, the chief source of the Dee, is the largest lake. The area is 7,466 sq. m. Pop. 2,205,680.

The chief industrial area is in the S., where coal mining, iron ore production, the tinplate industry, and shipping are the main activities. Oil refining is an important industry, and slate is quarried. There is railway communication with London and other centres by the G.W. and L.M.S. Rlys. Holyhead, the terminus of a steam packet service to Kingstown (Dun Laoghaire) and Dublin, is served by the latter system, and the Fishguard-Rosslare route is worked by the G.W. Rly. In general the government of Wales is associated with that of England, but there is a Welsh board of health and also a distinct organization for education.

Wales is divided into twelve counties, six in North Wales and six in South Wales, while for certain purposes Monmouthshire is regarded as part of Wales. Cardiff and Swansea are the largest towns. There is no recognized capital, but Cardiff is the headquarters of government. Aberystwith and Carmarvon are also national centres. The Church of Wales, which is now separated from the Church of England, consists of six dioceses under an archbishop. The university of Wales consists of four colleges, at Aberystwith, Bangor, Cardiff, and Swansea. It sends one member to Parliament. In Wales and Monmouthshire there were, in 1921, 190,292 persons who could speak only Welsh. A further 787,074 could speak both Welsh and English.

HISTORY. The Welsh, a term applied by the Teutons to Romanised foreigners, call themselves Cymry, that is, fellow countrymen. After the Roman evacuation, Cunedda Wledig, a British prince from S. Scotland, established himself in the N.W. district of Gwynedd, and founded a dynasty. Harassed by Norsemen and English, and frequently at war among themselves, the Welsh princes at length acknowledged the overlordship of powerful English kings. The Norman conquest of England was quickly followed by attacks on Wales, and the marches were the scene of constant warfare. With the greatest Welsh monarch, Llewelyn (q.v.), or Llywelyn the Great (1194-1239),

the house of Gwynedd became supreme, and Wales seemed at last to have become a stable political state under English suzerainty. But Llywelyn ap Gruffydd (1246-82) foolishly intrigued against Edward I, who forced him to submit. Wales was annexed, 1284, and Edward's infant son, born at Carnarvon, was made prince of Wales. Welsh law was allowed to remain in the country parts, but boroughs were formed, and settled with English.

The Welsh supported Henry VII, who was of Welsh descent, and the Tudors favoured the principality. The Act of Union in 1536 made English law general, and admitted representatives of Wales to Parliament. The Reformation was quietly accepted, but the people were gradually alienated from an Anglicised, apathetic, and often corrupt Church. Religious and educational reform was carried on, with remarkable results. There was a great secession from the established Church in 1811, that of the Calvinistic Methodists, while the Congregationalists and Baptists became powerful bodies. With the development of the great industrial district of S. Wales, socialism spread among the workers. See Aberystwith; England, map.

WALEWSKI, ALEXANDRE FLORIAN JOSEPH COLONNA, COMTE (1810-68). French diplomatist. Born in Poland, May 4, 1810, he was a son

of Napoleon I by Marie, countess Walewski. As a boy he went to France and for some years served in the army. Under Napoleon III he was French ambassador in London: from 1855-60 he was minister of foreign affairs, and from 1860 to 1863 was minister of state. From 1865-67 he was president of the chamber of deputies, and for ten years previously he was a senator. He died at Strasbourg, Oct. 27, 1868.



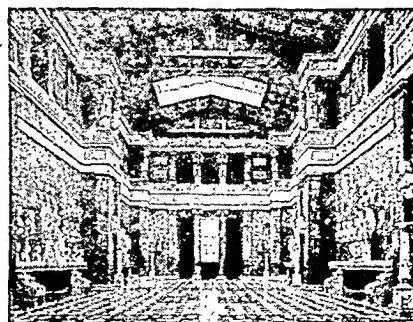
Comte Walewski, French diplomatist

WALHALLA (Ger. form of Valhalla). Temple of fame commemorating eminent Germans, near Ratisbon, Germany. It stands on a hill on the N. bank of the Danube, near Donaustauf, 6 m. E. of Ratisbon. Designed by L. von Klenze, it was built, 1830-42, by King Louis I of Bavaria. The fine hall contains over 100 busts of distinguished Germans. See Valhalla; also illus. below.

WALHAM GREEN. District of London. It is in the met. bor. of Fulham, with a station on the District Rly. between West Brompton and Parsons Green, and was known as Wendon Green, from the manor of that name.

WALKER. District of Newcastle-upon-Tyne. It is on the N. bank of the Tyne, and has a station on the L.N.E. Rly. It was incorporated with Newcastle in 1904.

WALLABY. Name given to several of the smaller species of kangaroos. They are smaller in size and brighter in colour than the typical kangaroos. They occur in the dense scrub of Australia, Tasmania, and New Guinea. See Kangaroo; also illus. p. 1401.



Walhalla. Interior of the German Temple of Fame near Ratisbon, containing busts of eminent men

WALLACE, ALFRED RUSSEL (1823-1913). British scientist. Born at Usk, Jan. 8, 1823, he spent 1848-52 collecting in the Amazon region, and 1854-62 in the Malay Archipelago, publishing valuable accounts of the expeditions. While in Borneo he wrote his famous essay on the law which has regulated the introduction of new species, in which he independently formulated Darwin's theory. He died Nov. 7, 1913. His many books include *Miracles and Modern Spiritualism*, 1874; *Man's Place in the Universe*, 1903. See Darwin, C. R.



A. Russel Wallace,
British scientist

WALLACE, EDGAR (b. 1875). British novelist. After education in an elementary school, he joined the army and served in South Africa. There he became a war correspondent, and helped to found *The Daily Mail of Johannesburg*. He had then written one or two volumes, and after his return to England he began a literary output which reached enormous proportions. Some were detective stories, and nearly all were full of thrills and excitement. He was almost equally successful with his plays, among them *The Ringer*, and found time to write for the press on the drama and horse-racing and to work for the films.



Wallaby. Bennett's Wallaby, typical of the marsupial order. See p. 1400
Cambier Bolton. F.Z.S.

WALLACE, LEWIS (1827-1905). American soldier and novelist. Born in Indiana, April 10, 1827, he served in the Mexican war. He took part in the Civil War, and was governor of New Mexico, 1878-81, and minister to Turkey, 1881-85. He died Feb. 17, 1905. As a novelist he is best known by his *Ben Hur*, 1880, a story of Palestine and of Rome in the time of Christ. This was an extraordinary success when adapted for the films.

WALLACE, SIR RICHARD (1818-90). British art collector. Born in London, July 26, 1818, in 1870 he inherited Hertford House, together with its pictures and other works of art. During the siege of Paris he spent large sums on the organization of ambulances and the endowment of a British hospital, being rewarded with a baronetcy, 1871. He was M.P. for Lisburn, 1873-85. He died July 20, 1890. See Hertford House.



Sir Richard Wallace,
British art collector
After W. R. Symonds

WALLACE, SIR WILLIAM (c. 1270-1305). Scottish national leader. He was a son of Sir William Wallace of Elderslie, Renfrewshire. At Dundee he killed an Englishman in a quarrel, was outlawed, and commanded a body of malcontents in a kind of guerrilla war with the English. In command of a considerable army, Wallace totally defeated an English army of 50,000 men at Stirling, Sept. 11, 1297, thus driving the English from Scotland. Edward I, however, pursued Wallace as far as Falkirk, where, on July 22, 1298, he

routed the Scots army. The beaten leader fled, and little more is known of him until his betrayal to the English, near Glasgow, by Sir John Menzies, Aug. 5, 1305. Condemned as a traitor and rebel, Wallace was executed, Aug. 23, 1305. See Dumbarton.

WALLACE COLLECTION. Gallery of works of art in London. The collection was bequeathed by Lady Wallace (d. 1897), widow of Sir Richard Wallace (q.v.), to the English nation. Hertford House, Manchester Square, was bought, and the gallery was opened to the public, June, 1900. There is a collection of French masters of the 18th century, while the Italian and Spanish works include fine examples of Titian, Luini, Velazquez, and Murillo. The armoury and the collection of 18th century French furniture are unique. The collection was made by the 3rd and 4th marquesses of Hertford and Sir Richard Wallace. See Hertford House.

WALLACHIA OR WALACHIA. Division of Rumania. Formerly one of the Danubian principalities, it became, 1859-1861, the W. division of Rumania between Hungary and Bulgaria. After the dismemberment of Austria-Hungary, Rumania extended beyond Wallachia to include Transylvania on the N. and the E. Banat on the W. Wallachia lies between the Transylvanian Alps and the Danube, which separates it from Yugoslavia and Bulgaria. See Rumania.

WALLAROO. Seaport in South Australia. It stands on the E. side of Spencer Gulf, 85 m. N. of Adelaide by rly. It is the port for the Wallaroo and Moonta copper mines, and has extensive smelting works. Copper, lead, and wheat are exported. Pop. 3,147.

WALLASEY. County bor. of Cheshire. It lies on a peninsula at the mouth of the Mersey and is separated from Birkenhead by a channel called the Great Float. The bor. comprises New Brighton, Egremont, Seacombe, Liscard, Poulton, Leasowe, and Moreton. It is served by the L.M.S., which has five stations in the borough, and the Cheshire Lines Rly., an electrified line. Ferry boats also connect it with Liverpool. The buildings include a town hall, a fine modern building, and there are several parks. Pop. 101,100.

WALLENSTEIN OR WALDSTEIN, ALBRECHT WENZEL EUSEBIUS VON (1583-1634). Bohemian soldier and statesman. Born Sept. 14, 1583, at Hermanitz, in Bohemia, at the outbreak of the Thirty Years' War in 1618 he joined the emperor Ferdinand II. In 1625 he was appointed general of the imperial armies, and was very successful in ensuing campaigns. But the antagonism of the Catholic princes compelled Ferdinand to remove him from the command in 1630, but the victories of Gustavus Adolphus and the fall of Tilly, 1632, necessitated his recall. When Gustavus was killed at Lützen, Nov. 16, 1632, Wallenstein was left the greatest



Sir William Wallace. Statue of the Scottish hero at Aberdeen

figure on the stage. For his own ends he intrigued alike with the Swedes, the German Protestants, and with German Catholics. Ferdinand was alarmed, and in Jan., 1634, announced the dismissal of Wallenstein. Wallenstein would probably have turned upon the emperor had he not himself been assassinated, Feb. 25, 1634.

WALLER, EDMUND (1606-87). English poet and politician. Related to both Oliver Cromwell and William Hampden, he was born March 9, 1606, at Coleshill, Hertfordshire (Bucks since 1832), and sat in Parliament from 1624-87. Involved in a plot to secure London for Charles I in 1643, he was fined £10,000 and banished, but was pardoned by Cromwell, 1651. He died Oct. 21, 1687. As a poet, remembered by the lyric, *Go, lovely rose, he remodelled the heroic couplet.*



Edmund Waller,
English poet

WALLER, LEWIS (1860-1915). British actor. Born at Bilbao, Spain, Nov. 3, 1860, he first appeared at Toole's Theatre in 1883. He played leading Shakespearean parts under Sir Herbert Tree's and his own management, and became the popular romantic hero of the day in such costume plays as *The Three Musketeers*, *Robin Hood*, and *Monsieur Beaucaire*. He was manager successively of the Haymarket, Shaftesbury, Imperial, and Lyric Theatres, London. He died Nov. 1, 1915.



Lewis Waller,
British actor
Downey

WALLFLOWER (*Cheiranthus cheiri*) Perennial herb of the order Cruciferae, native of N. and C. Europe. It forms a small bush from 1 ft. to 2 ft. in height, with alternate lance-shaped leaves and racemes of fragrant flowers, which in the natural state are orange-yellow, but under cultivation vary from a clear yellow through blood-red to dark brown. The plant was introduced to British gardens in the latter half of the 16th century. In many places it has become naturalised on ancient walls, and these escapes have reverted to the natural yellow of the flowers.

WALLINGFORD.

Borough and market town of Berkshire. It lies on the Thames, 15 m. N.W. of Reading, on the G.W. Rly. In S. Peter's church is buried Sir W. Blackstone. The castle was the scene of a siege by Parliamentary forces during the Civil War, 1646, and was mostly demolished a few years later. The town occupies the site of a Roman camp. The treaty of Wallingford is the name of the peace made here in 1153 between Stephen and Matilda. Market day, Fri. Pop. 2,721.



Wallflower. Leaves, pods, and flowers

WALLINGTON. District of Surrey. It is 2½ m. from Croydon, with a station on the Southern Rly. With Beddington it forms an urban district. Pop. 21,770.

WALLOON (akin to Welsh, foreigner). Dominant ethnic stock in S.E. Belgium, including the restored Malmédy and Eupen dists. They number nearly 3,000,000. Their Romance dialect is in colloquial use by a fraction of the Walloons, who commonly speak modern French. For many years there has been

friction between the two language groups in Belgium, the Walloons, who speak French, and the Flemings.

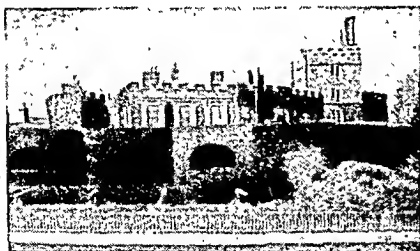
In Elizabeth's reign, and in Stuart times, Walloon Protestant refugees settled at Canterbury, and elsewhere in England, practising silk weaving and cloth manufacture, and in Canterbury Cathedral crypt they have maintained their separate worship since 1561. See Belgium.

WALL PENNYWORT, NAVELEWORT, OR PENNY PIES (*Cotyledon umbilicus*). Perennial herb of the order Crassulaceae, a native of Europe, W. Asia, and Africa. It has a fleshy root-stock, from which spring the round fleshy leaves, 1 in. to 3 ins. across, depressed in the centre and with the leaf-stalk attached to the middle of the under side. On the flowering stem they are spoon-shaped and wedge-shaped. The stem, which varies from 6 to 18 ins., is covered with drooping, greenish-white cylindric flowers.

WALLSEND. Borough of Northumberland. On the N. bank of the Tyne, 4 m. E. of Newcastle, it stands on the site of a Roman camp, and is named from being the E. end of Hadrian's Wall (q.v.). Its growth is due to the collieries, opened in the late 18th century. It has a station on the L.N.E. Rly. Pop. 45,480.

WALL STREET, Thoroughfare in New York City containing the Stock Exchange. The name is used as a synonym for the American stock market. See New York.

WALL TREE. Horticultural term for a tree prepared and grafted for culture against a wall; and specifically for fruit trees which have undergone training in one or other of the various desirable forms. All pip or stone fruits may be grown against walls, but such protection is an absolute necessity for the ripening of peaches, nectarines, or apricots grown in the open air in Great Britain. See Espalier Garden.



Walmer Castle. Official residence of the lord warden of the Cinque Ports

WALMER CASTLE. Official residence of the lord warden of the Cinque Ports (q.v.). About 3 m. to the S. of Deal, the original building was erected in 1539 by Henry VIII as a coast block house, but it has been much altered and enlarged.

WALNEY. Island of Lancashire. A long strip of land lying in front of Barrow-in-Furness (q.v.), of which borough it is part, Walney is connected by a bridge and steam ferry with the mainland. On it is Vickerstown.

WALNUT (*Juglans regia*). Large timber tree of the order Juglandaceae. It is a native of Asia, and reached Britain in the 15th century. It grows to 40 ft. or 60 ft. high, with a broad, spreading head and a short bole

covered with yellow-grey bark. The long leaves are broken into 5-9 lance-shaped leaflets, which give off a spicy aroma. It bears numerous male blossoms in long, hanging green catkins, and small spikes of one to four female flowers at the tip of a shoot, which develop into the single-seeded fruits (walnuts) enclosed in a wrinkled, bony shell and invested in a green, fleshy coat. The tough, light wood, when mature, is of a rich brown colour, and is used for cabinet making.

WALPOLE, HORACE OR HORATIO (1717-97). English author and letter writer. Born in London, Sept. 24, 1717, 4th son of Sir Robert Walpole, 1st Earl of Orford, he was made inspector of imports and exports, 1737-38, and usher of the exchequer, controller of the pipe, and clerk of the estreats, 1738. M.P. for Callington, 1741-54; Castle Rising, 1754-57; King's Lynn, 1757-68; he succeeded to the earldom of Orford, Dec., 1791; and, dying in London, March 2, 1797, was buried at Houghton, Norfolk.



Horace Walpole, British author

WALPOLE, HUGH SEYMOUR (b. 1884). British novelist. Son of George Walpole, bishop of Edinburgh, he was for a time a schoolmaster. During the Great War he served, 1914-16, with the Russian Red Cross. His works include *The Wooden Horse*, 1909; *Mr. Perrin and Mr. Traill*, 1911; *Fortitude*, 1913; *The Dark Forest*, 1916; *The Green Mirror*, 1918; *The Secret City*, 1919; *The Cathedral*, 1922; *Harmer John*, 1926; *Wintersmoon*, 1926; *Hans Frost*, 1929; and *Rogue Herries*, 1930.

WALPOLE, SIR ROBERT (1676-1745). English statesman. Born Aug. 26, 1676, he inherited his father's estates in Norfolk, and entered Parliament in 1701, soon making his mark in the House of Commons. He held office in the Whig administration, was condemned for corruption by a partisan vote in 1712, but returned to office with the Whigs on the accession of George I in 1714.

The Whig group to which Walpole belonged was practically in opposition from 1717-21, when the collapse of the South Sea Bubble and Walpole's reputation as a financier brought back Walpole and his brother-in-law, Townshend, as the heads of the government, from which Townshend retired in 1730. Walpole virtually ruled the nation from 1721 to 1739, directing his policy to the one supreme object of advancing the material prosperity of England, developing her commerce, and keeping her at peace.



Sir Robert Walpole, English statesman After Jarvis

Walpole employed the system of parliamentary corruption more methodically than his predecessors, though less profusely than his successors. In 1739 a storm of popular sentiment forced him to declare war with Spain, yet he held on to office although he was wholly unfitted to be war minister, until resignation was forced upon him in 1742, when he received the title of earl of Orford. He died March 18, 1745.



Walnut Leaflets. Top, left, male flowers; right, fruit

WALPURGA (d. 779). English missionary and saint. Daughter of Richard, king of the West Saxons, who was sent to Germany to help her cousin, S. Boniface, in his missionary work, and became abbess of Heidenheim. She died in 779. Her festival is on Feb. 25.

The Eve of S. Walpurga's Day, celebrated in Germany on May 1, is known as Walpurgis Night. It coincided with the old pagan May festival, when witches were believed to assemble on mountains, especially the Blocksberg or Brocken (q.v.), to worship the devil.

WALRUS (*Trichechus*). Large, fin-footed, carnivorous aquatic mammal. It is related to the sea-lion, from which it differs in its dentition, larger size, heavier and bulkier body, and the absence of external ears. When adult, the walrus is distinguished by the pair of huge tusks growing from the upper jaw. These are used both in fighting and for digging molluscs out of the bed of the sea.



Walrus. Young specimen, before the appearance of the tusks

A full-grown male walrus is 10 to 12 ft long, and may weigh 3,000 lb. There are two rather distinct races. The Atlantic walrus (*T. rosmarus*) occurs in Spitsbergen and other islands off the extreme N. of Europe. In America it occurs on the islands about Baffin Bay. The Pacific walrus (*T. obesus*) is found about Alaska and the N.E. coasts of Siberia. Formerly much more abundant, it has been exterminated in many districts by relentless hunting.

WALSALL. County bor. and market town of Staffordshire. It is 8 m. N.W. of Birmingham, and is served by the L.M.S. line and by canals. The buildings include several churches, the modern town hall, free library, museum, and institute of science and art. There is a memorial to Sister Dora. The principal trade is the making of saddlery and hardware, and there are also iron foundries and leather works. It sends one member to Parliament. Market days, Tues. and Sat. Pop. 96,964.



W. J. Walsh, Irish prelate Lafajette

WALSH, WILLIAM JOHN (1841-1921). Irish prelate. Born in Dublin, Jan. 30, 1841, he became professor of theology at Maynooth in 1867, vice-president in 1878, and president in 1881. In 1885 he was made Roman Catholic archbishop of Dublin, remaining there until his death, April 9, 1921. Walsh, who was

first chancellor of the national university of Ireland, 1908, wrote a number of books.

WALSINGHAM. Town of Norfolk. It is 5 m. S.E. of Wells, on the L.N.E. Rly. The ruined Augustinian priory of Our Lady of Walsingham was a famous pilgrim resort of the Middle Ages. Pop. 1,083. See Pilgrim.

The title of Baron Walsingham has been held by the family of de Grey since 1780. The founder of the family was Sir William de Grey (d. 1781), solicitor-general and chief justice of the common pleas, created a baron in 1780. John, 7th baron, was a metropolitan magistrate, 1905-19, when he succeeded to the title. He died March 21, 1929, and was succeeded by his son George, the 8th baron.

WALSINGHAM, SIR FRANCIS (c. 1530-90). English statesman. Born at Chislehurst, Kent, he acted as agent for Burghley, was chief of the secret service in London. 1569, ambassador in France, 1570-73, and secretary of state, 1573-90, being knighted in 1577. He was instrumental in bringing about the trial and execution of Mary Queen of Scots. He was made chancellor of the duchy of Lancaster in 1587. A Puritan, he did much to encourage American colonization. He died poor, April 6, 1590, and was buried in St. Paul's Cathedral.



Sir F. Walsingham,
English statesman

WALTER, JOHN (1739-1812). Founder of The Times. Son of a London coal-merchant, he bought Printing House Square in 1784. There he started a printing business and, Jan. 1, 1785, started The Daily Universal Register, the name of which was altered, Jan. 1, 1788, to The Times or Daily Universal Register, and on March 18, 1788, to The Times (q.v.). He died Nov. 16, 1812.



John Walter,
Founder of The Times

John Walter II (1776-1847), son of the above-named, was born Feb. 23, 1776, and became joint manager of The Times about 1797; sole manager, 1803; and editor, 1803-10. He bought Bear Wood, Berkshire, for which co. he was M.P., 1832-37; was M.P. for Nottingham, 1841; and died July 28, 1847.

John Walter III (1818-94), eldest son of the last-named, became sole manager of The Times in 1847. He introduced the Walter press, 1869; was M.P. for Nottingham, 1847-59, and Berkshire, 1859-65 and 1868-85; and died Nov. 3, 1894. His eldest son, John Balston Walter, was accidentally drowned in 1870, and the chief proprietary interest in The Times passed to a younger son, Arthur Fraser Walter (1846-1910). In 1908 the control of The Times passed to Viscount Northcliffe, and after his death in 1922 to Hon. J. J. Astor, with whom John Walter, a son of A. F. Walter, was associated.

WALTER, LUCY (c. 1630-58). Mistress of Charles II. Daughter of a South Wales squire, she went to The Hague, where she became the mistress of the prince of Wales (Charles II) in 1648. She lived with Charles until 1650, and after many disreputable adventures died in Paris. She bore Charles a son, James, whom he created duke of Monmouth (q.v.).

WALTHAM ABBEY. Historic church in the urban district of Waltham Holy Cross (Waltham Abbey), Essex. It was founded in 1060 on an earlier foundation, by King Harold. Henry II converted it into a priory, and it became an abbey in 1184. It was surrendered to Henry VIII in 1540. The W. tower was built in 1556.

WALTHAM CROSS. Dist. of Hertfordshire. Part of the urban dist. of Cheshunt, it lies on the S.E. border of the co., 12½ m. from London, on the L.N.E. Rly. The Eleanor Cross erected by Edward I has been restored.

WALTHAM HOLY CROSS. Urban dist. of Essex, also called Waltham Abbey. It lies 3 m. S. of Cheshunt, in the valley of the Lea. Its chief industries are the government powder mills, flour mills, and heweries; its most notable feature is the abbey church of Holy Cross (see Waltham Abbey). Pop. 6,847.

WALTHAMSTOW. Borough of Essex, part of Greater London. It is served by the L.N.E. and L.M.S. Rlys. The parish church of S. Mary, partly rebuilt in 1537, has been enlarged and restored. William Morris was born at Walthamstow, which was made a borough in 1929. Pop. 131,100.



Izaak Walton,
English angler
and biographer
After J. Huysman

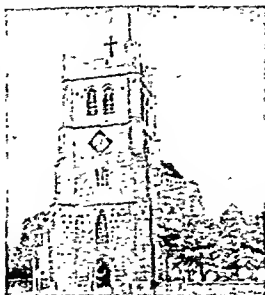
WALTON, IZAAK (1593-1683). English poet, biographer, and angler. Born at Stafford, Aug. 9, 1593, the son of a yeoman, after a successful business life in Fleet Street and Chancery Lane he retired to Shallowford, Staffordshire, about 1644. He returned to London in 1650, lived with Bishop Morley at Farnham Castle, Surrey, and then with his son-in-law, Canon Hawkins, at Winchester, where he died Dec. 15, 1683, being buried in the cathedral.

Walton's Lives of Donne, 1640; Wotton, 1651; Hooker, 1662; Herbert, 1670; and Sanderson, 1678, are among the most delightful of English biographies. His Compleat Angler: or the Contemplative Man's Recreation, 1653, is still one of the most popular of English nature hooks. The second part was added by his friend Charles Cotton (q.v.) in 1676.

WALTON HEATH. Village in Surrey, 5 m. from Reigate. The station, on the Southern Rly., is Tadworth and Walton. The old village, sometimes called Walton-on-the-Hill, has an ancient church. In the 20th century the golf course laid out on the heath began to attract residents, and numerous villas were built around it. Pop. 1,795.

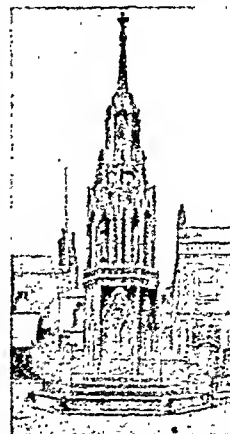
WALTON-LE-DALE. Urban dist. of Lancashire. On the Ribble, 2 m. S.E. of Preston, it is served by the L.M.S. Rly. The chief industries are cotton spinning, iron-founding, and market gardening. Pop. 12,153.

WALTON-ON-THAMES. Urban dist. of Surrey. On the S. bank of the Thames, 5 m. S.W. of Kingston, it is largely a residential suburb of London, with a station on the Southern Rly. The Norman church of S. Mary contains interesting monuments. In the parish are the waterworks of the W. Surrey and Chelsea Water Companies. Near is Walton Manor. Pop. 14,647.



Waltham Abbey. West tower added to the remains of the ancient church of Holy Cross in 1556

WALTON-ON-THE-NAZE. Urban dist. and watering place of Essex. It is 7½ m. S. of Harwich, on the L.N.E. Rly. Standing on the Naze, and almost surrounded by the sea, it has excellent bathing and boating. The encroachment of the sea has reduced it considerably. Pop. 3,666.



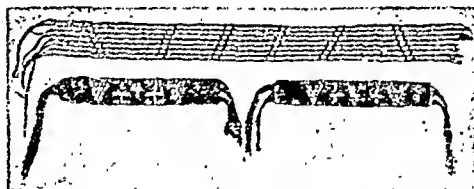
Waltham Cross, Heris.
Eleanor Cross, erected by
Edward I

WALTZ (Ger. walzen, to revolve). A dance, the music to which is written in 3/4 time, though, as two bars are necessary to complete the movement, the time really is not simple treble, but compound duple. Its origin is somewhat obscure, but it probably came from Southern Germany, or from Bohemia. It first appeared in the 18th century, and although fiercely attacked in various quarters it soon conquered the dancing world. The form has been utilised by Chopin and other composers as a medium for instrumental music. See Dancing.

WALVIS BAY. Port in South-West Africa. It is 21 m. S. of Swakopmund, which it has now superseded. It was retained by Great Britain when the Germans assumed a protectorate over the adjacent hinterland, and from 1878 until the Great War it was a detached part of the Cape of Good Hope. There is a wireless station. The area of the district is 374 sq. m. Pop. 1,180.

WALWORTH. Dist. of London. It is in the bor. of Southwark (q.v.), S. of Newington, and S. and S.W. of Bermondsey. In Browning Street is the Browning Settlement. The Walworth Road runs S. from the Elephant and Castle (q.v.) to the Camberwell Road.

WAMPUM (Algonquian wamp, white). Shell beads strung for ornament, currency, and tribal records by some North American Indian peoples.



Wampum. Two strings of shell beads used as money, and an ornamental wampum belt, made by Iroquois Indians
By courtesy of the Trustees, British Museum

Made of the perforated central column of several kinds of marine shells, they became the recognized medium of exchange with the early white settlers. The Iroquois preserved treaty records and the like mnemonically on wampum belts up to 5 ins. wide.

WANAMAKER, JOHN (1838-1922). American merchant. Born in Philadelphia, July 11, 1838, he became a bookseller's errand boy, and in 1856 became a retail clothier, this business developing into a huge concern with a branch in New York. Wanamaker founded the Bethany Sunday School in 1856, the Christian Commission during the Civil War, and was president of the Philadelphia Y.M.C.A., 1870-83. He also founded colleges and Y.M.C.A. branches in the Far East. In politics a Republican, he was postmaster-general 1889-93. During the Great War he sent relief to Belgium. Wanamaker died in Philadelphia, Dec. 11, 1922.



John Wanamaker,
American merchant

WANDERING JEW. THE. Legendary character condemned to wander about the earth until the second coming of Jesus Christ. According to the story told by Matthew Paris (d. 1259), the Jew, doorkeeper to Pilate, told Jesus to go faster when He was led out to be crucified, whereupon Jesus replied, "I go, but thou shalt wait until I return." The story reappears in the Chronique Rimée of Philippe Mouskos (d. 1283), bishop of Tournai, and there are other versions of the legend, which has Greek and Teutonic parallels. A play of this name, by E. Temple Thurston, with Matheson Lang in the title rôle, was produced at the New Theatre, London, Sept. 9, 1920.

Wandle. River of Surrey. Rising in the hills above Carshalton, it flows through Beddington and Miteham to the Thames

WANDSWORTH. Metropolitan borough of London. Named after a Thames tributary, the Wandle, and covering an area of 14½ sq. m., it includes the dists. of Wandsworth proper, Putney, Tooting, Balham, Streatham, and part of Clapham. Part of Wandsworth Common, which covers 175 acres, is in Battersea (q.v.). Wandsworth park occupies 20 acres on the right bank of the Thames. Wandsworth Bridge, 1873, connects with Fulham. Pop. 354,178

WANGANUI. Town of New Zealand, in North Island. On the Wanganui river, 134 m. by rly. from Wellington, it is the centre of an agricultural and pastoral dist., and exports cattle, sheep, grain, and wool. Pop. 27,630.

WANGARATTA. Town of Victoria, Australia. At the confluence of the Ovens and King rivers, it is an agricultural centre, 146 m. by rly. from Melbourne. Pop. 4,020.

WANKIE. Settlement of Southern Rhodesia. It is 212 m. N.W. of Bulawayo by the Cape to Cairo rly., and is the centre for the Wankie coalfields.

WANSTEAD. Urban dist. of Essex. It is on the borders of Epping Forest (q.v.), with stations, Snaresbrook and Wanstead Park, on the L.N.E. and L.M.S. Rlys. Wanstead park, 200 acres, the property of the City Corporation, contains several lakes and a heronry. Here, 1715-1822, stood Wanstead House, built by the 1st Earl Tylney, and for a time the residence of Louis XVIII and the Prince de Condé. Wanstead Flats extend S. towards Forest Gate. The church of S. Mary was rebuilt in 1790. Pop. 15,297.

WANTAGE. Market town and urban dist. of Berkshire, 26 m. from Reading. Wantage Road, 3 m. distant, has a station on the G.W. Rly. The church of SS. Peter and Paul is mainly Perpendicular, but retains some Early English parts. The town has a gallery containing pictures of deeds that won the V.C., presented by Lord Wantage, who himself won the V.C. in the Crimean War. Wantage is famous as the birthplace of Alfred the Great. Near is the Vale of the White Horse. Market day, Wed. Pop. 3,886.

The town gave the title of haron to Robert James Loyd Lindsay (1832-1901), Conservative M.P. for Berkshire, 1865-85, and financial secretary to the war office, 1877-80. Made a haron in 1885, he died without sons, June 10, 1901.

WAPENTAKE (Old Norse vápnatak, touching of weapons). Name given to a division of certain English counties. It corresponds to the hundred elsewhere, and occurs in the shires of York, Lincoln, Leicester, Nottingham, Derby, and Rutland. The theory is that wapentake is the Danish equivalent for the hundred, as the word is only found in parts settled by this people. It originated in the ceremony of touching the chief's spear as a sign of homage. See County; Hundred.

WAPITI (*Cervus canadensis*). Species of large deer. Allied to the British red deer, but

larger in size, it occurs in N. America, though rarely now outside reservations, and in Central and N.E. Asia. The body is a light reddish brown, the head and limbs darker. It is distinguished by the fine development of its antlers. See Antler; Deer.

WAPPING. London dist. Part of the bor. of Stepney (q.v.); it lies between the London docks and The Pool, being connected with Rotherhithe by the Thames Tunnel. Near the High Street are the Old Stairs of Charles Dibdin's ballad. See Thames.

WAR, THE WORLD. The occasion of the Great War was the determination of Austria, supported therein by Germany, to act as accuser, judge, and executioner in regard to charges brought by her against Serbia. Russia could hardly avoid action on behalf of Serbia; France was bound to aid Russia if Germany joined against her, but no other country was under actual treaty obligation to either group. On Aug. 2nd, 1914, all these countries had declared war. Belgium was pledged to neutrality. Germany's resolve to attack France via Belgium met with resistance from her, and caused Britain to declare war on Aug. 4th.

Germany's aim was to drive into France—unprotected by fortresses on the Belgian line—swoop on Paris, and finish the war in the west in a few weeks or, at most months, by prostrating her, while on her own eastern frontier Russia, moving slowly, would be unable to come into play. With France off the board, Russia would soon be brought to terms, and the British fleet alone would remain to be dealt with—if it did remain.

The plan, it would seem, missed success by the narrowest margin. The Belgian resistance gave bare time for the British expeditionary force to take station on the French left. The allied line, hinging on Verdun, was swung back on Paris, but was neither pierced nor outflanked; fresh French troops were mustering behind the line. The sixth week opened with a French counter-attack; the Germans in turn swung back on their hinge, fighting the continuous series of engagements known as the battles of the Marne and the Aisne till both combatants were stabilised in a long, continuous line of entrenchments facing each other, in French or Belgian territory, from the Belgian coast to the Swiss border, though for two months more it was only by desperate fighting that the British were able to hold their ground in the Ypres salient.

Meanwhile the British fleet confined the German to its ports except for occasional raiding operations, while Japan joined the allies, ejected the Germans from Asia, and patrolled the Pacific; the Union of South Africa set about the like task in South Africa;

and the other Dominions of the British Empire were hastening to take part in the struggle.

In Europe on the eastern front the Russians had flung an invading force into East Prussia, very useful to their allies in the west at a critical hour, but were disastrously driven out by the battle of Tannenberg. This, however, did not prevent them from making a vigorous advance in Galicia against the Austrians, whose invasion of Serbia met with no success, while Hindenburg's counter-invasion of Poland was thrown back.

At this stage, however, Turkey dropped the mask of neutrality and threw in her lot with the Central Powers. Her entry was aimed at the two European powers which were also great Asiatic powers, Great Britain and Russia, which were in consequence forced to organize war against Turkey in Asia; hence the opening of the Russian campaigns in Caucasus and the British in Mesopotamia. It also, however, suggested a flank attack on the Central Powers through Turkey by seizing the Dardanelles.

In 1915 the stabilised lines of the western front were on both sides so strongly entrenched that the sole hope of early victory lay in the chance of a sudden overwhelming blow at some point which would pierce the enemy line and roll it up to right or left. On that front both sides during 1915 confined themselves to a series of such efforts, each of which ended in failure; in one of them, at Ypres, poison gas was first brought into action. In Asia, Russia drove through the Caucasus, and the British pushed their difficult way towards Bagdad, but ultimately had to fall back to Kut-el-Amara.

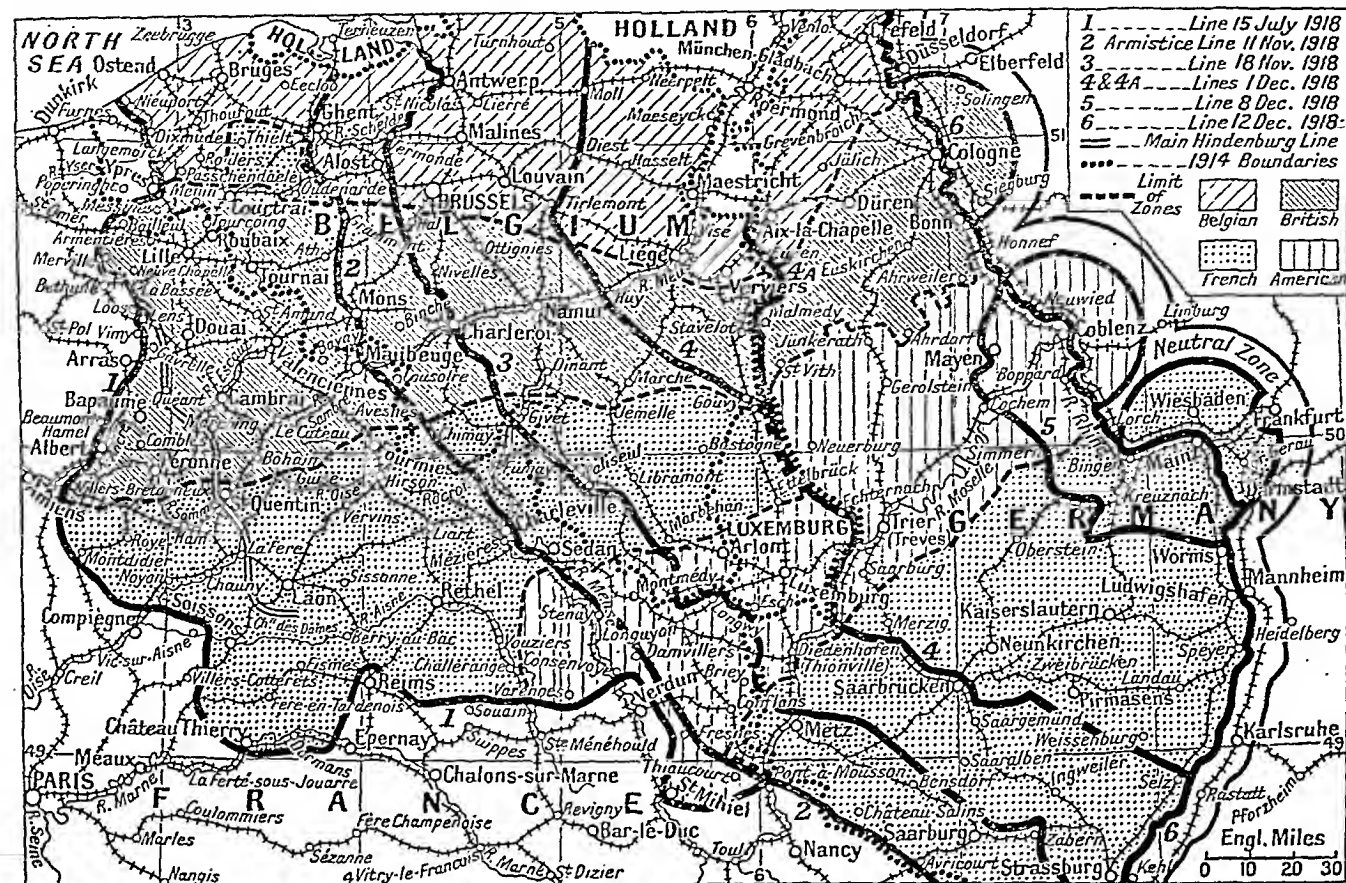
On the sea Germany began and continuously developed the submarine campaign—her fleet having ceased to be practically operative on the surface—for sinking non-combatant enemy ships at sight, the British responding by tightening the blockade, to the detriment of neutral commerce with Germany. Italy embarrassed Austria by declaring war on her, with a view to the recovery of what still remained in her hands of Italia Irredenta. It was not till October that Bulgaria became convinced that the Central Powers were the winning side, and attacked Serbia, while French and British troops, with the assent of the technically neutral Greek government, occupied Salonica. This change was the result of the British failure in the Dardanelles and of the sweeping German successes on the Russian front, where the stabilisation of the western front had led them to seek their main objective.

The British had opened the year with a naval attack on the Dardanelles, unsupported by troops, which could not be spared from the west. Then followed the glorious tragedy of Gallipoli, in which the impossible was all but achieved; but the great adventure failed as the German rush on Paris had failed, from the exhaustion of the force of the attack at the moment of the decisive crisis. After the Suvla Bay episode the last hope of success in that quarter was dead. Such allied forces as could be spared from the west for Salonica were wholly inadequate for striking a victorious blow, and were sufficiently occupied in preventing the Balkan peninsula from passing wholly over to the Central Powers.

For at the beginning of the year the Germans had twice thrust into Poland, only to be held up on the line of the Vistula and forced to retire; while the Russians were rolling the Austrians back in Galicia and threatening to pierce into Hungary through the Carpathians. But Mackensen, superseding the Austrian commanders, was preparing a hurricane onslaught which the Russian generals, paralysed by the bureaucracy, could not hold up. Before Mackensen's wedge and his storm of artillery the Russian line reeled back over Galicia and Poland past the Vistula, past Warsaw, but was never pierced, till it was sundered by the Pripiet marshes.



Wapiti. Large Californian deer, showing the characteristic branching antlers and heavily built body
Gambier Bolton, F.Z.S.



The World War. Map showing French and Belgian territory recovered by the Allies, July-Nov., 1918; also their respective zones in the occupied areas of Germany

There the German advance was stayed, but in the last three months of the year Serbia was undergoing her martyrdom, Greece was rocking in the balance, a double Italian front had developed, the British were shut up in Kut and had evacuated Gallipoli, and the Germans were preparing another effort in the west.

In February, 1916, the storm broke. The immediate objective was Verdun, and before Verdun the battle continued to rage until June. On both sides, French and German, indomitable valour and hideous carnage were its leading features. But when the onslaught was at last exhausted, Verdun still stood and the French line still held. Once more the blow which might have been decisive had failed, and the counter-blow was in preparation. Almost at the same moment Austria was compelled to abandon her advance into Italy through the Trentino. And meanwhile the German fleet had emerged to fight the great naval battle of Jutland, in which the approach of the main British fleet forced upon it a skilful retreat to its mine-defended ports, whence it never again ventured out. In the East, Kut had fallen and the campaign in Mesopotamia was in suspense.

At the opening of 1916 it appeared that the Germans had carried their offensive in the east to the limit of safety, since the precedent of Napoleon had proved the folly of attempting the penetration of Russia herself. The accession of Bulgaria and devastation of Serbia had added to the strength of the Central powers in the Balkan regions. Germany had thus been enabled to concentrate on the Verdun thrust, still keeping the British on the Allied left too fully in play to relieve the pressure on Verdun, while the Austrians had felt themselves free for the Trentino adventure. But the result was that the new Russian attack on the Bukovina, conducted with unexpected vigour and success, called both Germans and Austrians to the Eastern front;

a movement which had hardly begun when the British opened the offensive that developed as the battle of the Somme.

For four months the British line hammered its way forward without anywhere effecting anything in the nature of a breakthrough, gradually absorbing shattered entrenchments, which the Germans only evacuated to occupy others ready prepared in the rear; when the advance had been carried to a depth of some seven miles on a short front, weather conditions set in which made farther progress practically impossible. It was at this time that those new and formidable instruments of war, the "tanks," made their first startling appearance.

Meanwhile the Russian successes in the Bukovina and the generally more promising aspect of the war (incidentally Arabia had revolted against the Turkish sovereignty) induced Rumania to join the Allies and strike through the Carpathians at Transylvania. But after the first dash her effort, otherwise unsupported, since the Russians now had their own hands full, proved disastrous to herself and useful to the Central Powers. The German command was able to stem the attack, hurl it back, cross the Danube, and invade Rumania under the leadership of Mackensen. The retreating troops fought valiantly, but could not save Bukarest and the invaluable oil-fields of Wallachia from falling into the hands of the invaders before the year was over. The capture of Monastir by the French and Serbians, and of Gorizia by the Italians on the Isonzo front were no very adequate compensations for the Allied cause.

Thus, at the beginning of 1917, the position as a whole pointed to something like a stalemate, though neither side was ready to make peace except on terms which would be a practical acknowledgement that it had won the war. A basis of negotiation through the President of the U.S.A. was rejected by the Allies, and on both sides preparations were

being made for increased activity as soon as weather conditions should permit.

In the farther East, then, the British renewed their thrust in Mesopotamia, recovered Kut, and swung on to Bagdad; while a move on Palestine from Egypt was held up at Gaza. On the Western front their forward push, supported by the French on their right, threatened St. Quentin. But at this moment two events occurred, not on the battlefields, which vitally affected the whole subsequent course of the war—the Russian revolution and the declaration of war by the U.S.A.

The former began as a constitutionalist revolution which at the moment did not seem likely to affect the national Russian attitude towards the war beyond creating some temporary confusion; the constitutionalists were at least as zealous as the Tsarists. It was when the constitutionalists were undermined and overwhelmed by the communist movement, to be known later as Bolshevism, that the development of a veritable portent, affecting not only the Russians, became apparent. It meant the collapse of Russia as a factor in the war. The action of the U.S.A., on the other hand, meant that the Central Powers must strain every effort to force an unqualified decision before the new armies from across the Atlantic should be ready to take the field.

On the Western front, then, the Allied attack was intensified, extending northward and southward of the line won before St. Quentin. The Germans were forced back, but always into new entrenchments awaiting them immediately in rear of those they abandoned. The "impregnable" Vimy Ridge was stormed by the Canadians; the Messines Ridge was blown up by the most spectacular and terrific mining operation on record. The French gained, but were unable to retain, a footing on the Chemin des Dames. The slaughter was tremendous, while each side claimed that the enemy had been the greater sufferers, and the

effective gains were almost inappreciable. On the Isonzo front Trieste could still defy the Italian approach. The Rumanians were still maintaining their unaided struggle against Mackensen, but could do no more. What should have been the simultaneous Russian offensive was held up by the political confusion and the growing disaffection of the troops.

Then, shortly after midsummer, Brusiloff made his desperate and brilliant attempt to retrieve the position on the Russian front; but his swift and startling successes were only the prelude to utter disaster. The revolutionary virus had permeated the troops, and they failed their dauntless chief. From that moment such prospect as there had been of a Russian recovery vanished; the only question was how soon Russia would be off the board altogether, though time must still elapse before the Germans could be set free to join their comrades in the west. The British carried their campaign into the flats of Flanders, which were rapidly becoming an impassable sea of mud where tanks could not operate. In the southern sector, where Pétain had taken Nivelle's place, the French were encouraged by the recovery of ground lost before Verdun, and actually regaining the Chemin des Dames.

And then there came a shock which was in some sort of a by-product of the Russian revolution which was undermining the morale of some sections of the Italian forces on the Isonzo. Reinforced by Germans, the Austrians smashed through the Italian line at Caporetto, not only splitting it and raising the siege of Trieste, but flinging it back in a retreat so compulsorily hasty as to be hardly distinguished from a flight, till it was able to reform and make a stubborn stand on the Piave.

At about the same time, little was actually gained by the British capture of Passchendaele, while the strength of the German position was shown by the saving of Cambrai from a brilliantly planned and executed British attack. In the east some relief was given by the abdication of King Constantine and the definite association of the new Greek government with the allies, and by the stubbornly continued resistance of the Rumanians; whereas in Russia the establishment of Lenin's ascendancy ensured an early transfer of German forces to the west. There was, however, something of a triumph in the Palestine campaign, where Allenby took Gaza in flank and advanced on Jerusalem, which he occupied on December 9, 1917.

Long before the Germans, in March, 1918, concluded their treaty of Brest-Litovsk with Trotsky, reinforcements had been pouring in behind the German lines in the west. The great offensive which was to smash the allies before the Americans could join them was in preparation. It opened on March 21, at the weak point where the British right were taking over from the French, who were expecting the attack elsewhere on their own line. The British were hurled reeling back over all the ground they had won in the last twenty months, but with the flank never quite uncovered, the line never quite pierced, till the weight of the onslaught was exhausted and they were able to stand at bay on the Ancre. A second blow on the British left towards Calais drove it back in a deep curve, but was then held up. And in May, when American troops were already arriving behind the lines, the Germans began their final desperate drive towards Paris; while the supreme command and the complete co-ordination of the entire allied line had just been entrusted to the right man, who had at last been found—Marshal Foch. Also British squadrons had just succeeded in sealing up the German submarine bases at Zeebrugge and Ostend.

At the end of May, then, came the crash; this time against the French, who were hurled back out of the ground won by Pétain in the

previous year, to the Marne. Would the Germans be able to hurt through and rush on Paris, or would they be held up? It was the last chance, for even now American battalions were beginning to enter the French line. For six weeks their effort was concentrated on the Marne "pocket"; it was the advance of the Old Guard at Waterloo; on July 15 they made a lodgement across the Marne, but no more. The blow had expended itself. On July 18 the pocket had become a trap from which they could only extricate themselves with the utmost difficulty, and the extrication was only the first step of a compulsory retreat along the whole line.

The last Austrian thrust on the Piave had already failed when the French delivered their first counter-attack (as it appeared to the un-instructed world) on the withdrawing Germans about the pocket, developing it to right and left. Where was Ludendorff's next thunderbolt to crash? The next thrust, however, was made by the British left. Always it was either British or French who made the next attack in a new quarter, and every attack was an advance; while the Americans were now formed as a separate army on the extreme right of the allies; till the whole line was pressing back the whole German line and striking co-ordinated blows always at their own choice, rolling it off French soil.

Elsewhere, in September, the allies from Salonica struck at the Bulgars and drove them to surrender; Allenby swept the Turks out of Palestine by the battle of Megiddo, and invaded Syria. In October the Austrians were smashed back from the Piave, and the remaining Turkish armies in the East were shattered. When November opened Germany stood alone, but still in occupation of Belgian and Alsatian territory. The battle of the Sambre and the capture of Sedan by the Americans were almost the finishing strokes. Revolt broke out in Berlin; the Kaiser fled to Holland; and it remained for a provisional government to accept the armistice terms dictated by the allied command, and signed just as the Canadians drove into Mons on the morning of November 11. See Aisne; Arras; Foch; Gallipoli; Haig; Kut; Marne; Neuve Chapelle; Tannenberg; Versailles, Treaty of, etc.

CASUALTIES. An authoritative statement was made in the House of Commons in May, 1921, as follows:

BRITISH EMPIRE			
		DEAD	WOUNDED
Great Britain	.. ..	743,702	1,693,262
Canada	.. ..	56,625	149,732
Australia	.. ..	59,380	152,171
New Zealand	.. ..	16,136	40,729
S. Africa, Newfoundland, etc.	.. ..	8,832	15,153
India	.. ..	61,398	70,859
		946,023	2,121,906
ALLIED AND ASSOCIATED COUNTRIES			
		DEAD	WOUNDED
France	.. ..	1,385,300	No record
Belgium	.. ..	38,172	44,686
Italy	.. ..	460,000	917,000
Portugal	.. ..	7,222	13,751
Rumania	.. ..	335,706	No record
Serbia	.. ..	127,535	133,148
U.S.A.	.. ..	115,660	205,690
ENEMY COUNTRIES			
		DEAD	WOUNDED
Germany	.. ..	2,050,466	4,202,028
Austria	.. ..	1,200,000	3,620,000
Bulgaria	.. ..	101,224	152,400
Turkey	.. ..	300,000	570,000

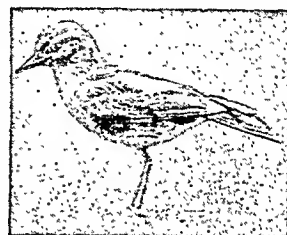
WARATAH OR **WARATAU** (*Telopia speciosissima*). Shrub of the order Proteaceae. A native of Australia, it has dense tufts of long oval leaves, from which spring sprays of brilliant crimson tubular flowers. It shares with the wattle (*Acacia*) the distinction of being the national flower of Australia.

WARATAH. Town of New South Wales, Australia. Four m. N.W. of Newcastle, of which it is a suburb, it has coal and copper mines.

Another Waratah is a mining centre of Tasmania, 82 m from Launceston. It is noted for its tin mines especially the rich Mt. Bischoff mine.

WARBECK, PERKIN (c 1474-99). Pretender to the English throne. Son of a Fleming named Werbecque, he went to Cork in 1491, and in 1492 proclaimed himself duke of York, son of Edward IV. The Yorkist faction pressed his claim, and he was acknowledged by the French, Imperial, and Scottish courts. Landing at Whitesand Bay, Cornwall, Warbeck proclaimed himself Richard IV, Sept. 7, 1497. He marched inland, but was defeated at Exeter, surrendered, and was hanged at Tyburn, Nov. 23, 1499.

WARBLER. Popular name for insectivorous birds of several genera in the family Sylviidae. Eleven species breed in Britain,



Warbler. *Phylloscopus sibilatrix*, the wood-warbler
W. S. Berridge, F.Z.S.

and nine others are occasional visitors. In general structure they resemble the thrushes. The true warblers of the genus Sylvia are represented in Britain by the whitethroat (*S. communis*), lesser whitethroat (*S. curruca*), blackcap (*S. atricapilla*), and garden warbler (*S. hortensis*).

The Dartford warbler (*Melospiza undatus*) is resident in the S. counties wherever there are heaths. The genus *Phylloscopus* includes the chiffchaff (*P. rufus*), the willow-warbler (*P. trochilus*), and the wood-warbler (*P. sibilatrix*). The genus *Acrocephalus* has two British representatives, the sedge-warbler (*A. phragmitis*) and the reed-warbler (*A. streperus*), waterside birds that nest among the reeds and sing through the night. The grasshopper warbler (*Locustella naevia*) is more a bird of the hedgerow, whose song has suggested its name. A second species, Savi's warbler (*L. luscinoides*) bred regularly in the reed-beds of the East Anglian fens before their drainage. See Blackcap.

WARBURTON, WILLIAM (1698-1779). British divine. Born at Newark, Dec. 24, 1698, he was educated at the grammar school there. After a few years as a lawyer, he was ordained in 1723. Chosen rector of Braut Broughton in 1728, he was made preacher at Lincoln's Inn in 1746, dean of Bristol in 1757, and held other appointments. In 1759 he was made bishop of Gloucester, and he remained there until his death, June 11, 1779.



Waratah. Crimson blooms of the national flower of Australia

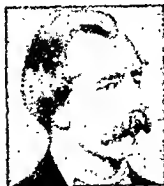


William Warburton, British divine
After Hoare

WARD. In English law, a child under wardship or guardianship. In certain circumstances an infant (in the legal sense) becomes a ward of court, i.e. under the protection of the high court. See Guardian; Infant, etc.

WARD. In English local government, an electoral division of a municipal borough or parish. In boroughs divided into wards the burgesses whose names are inscribed in the ward rolls elect the councillors for that ward. See Borough.

WARD, ARTEMUS (1834-67). Pseudonym of Charles Farrar Browne, American humorist. Born at Watford, Maine, April 26, 1834, as Artemus Ward, Showman, he contributed to The Cleveland Plain Dealer a series of letters describing the humours of an imaginary travelling menagerie. In 1861 Artemus Ward began a career as lecturer, visiting England in 1866. He died at Southampton (England), March 6, 1867.



Artemus Ward,
American humorist

His best known books are Artemus Ward: His Book, 1862; Artemus Ward: His Travels, 1865; and Artemus Ward in London, 1867.

WARD, DAME GENEVIÈVE (1837-1922). British actress. Born in New York, March 27, 1837, she began her career as an operatic singer, but in 1862 lost her voice after an attack of diphtheria. In 1873 she made her first appearance at Manchester as Lady Macbeth. Her success as a tragic actress was immediate and lasting. In the part of Stephanie in Forget-Me-Not, 1879, she rose to the highest point of her art. In 1893 she joined Henry Irving's, and in 1910 F. R. Benson's company. In 1855 Geneviève Ward married Count C. de Guerbel. In 1921 she was created D.B.E. She died Aug. 18, 1922.

WARD, JOHN (b. 1866). British labour leader. After serving in the army he worked as a navy, and became interested in labour questions, joining the Social Democratic Federation in 1885. He founded the Navvies' Union in 1899, and in 1906 was elected Labour M.P. for Stoke-on-Trent. In the Great War he raised five labour battalions, and became colonel of the 25th Middlesex Regiment, which he led against the Bolsheviks in Siberia. He was with this battalion on board the Tyndareus (q.v.) when it was mined. He wrote With the Die-hards in Siberia, 1920.

WARD, SIR JOSEPH GEORGE (1857-1930). New Zealand statesman. Born April 26, 1857, he entered politics and became minister of railways, commerce, finance, postmaster-general, minister of defence and of lands. He was prime minister, 1906-12, and represented New Zealand at the Imperial Conferences in London, 1907, 1909, and 1911. A warm supporter of imperial unity, he was a member of the imperial war cabinet, 1917-18, and one of New Zealand's representatives at the peace conference, 1919. He was created a baronet in 1911. In Dec., 1928, he again became premier, but retired in May, 1930. He died July 7, 1930.



Sir Joseph Ward,
New Zealand statesman
Bassano

WARD, SIR LESLIE (1851-1922). British artist, known by his pseudonym Spy. Born in London, Nov. 21, 1851, he studied architecture under S. Smirke and at the R.A., but later developed a gift for caricature. He became famous in connexion with Vanity Fair, which he served 1873-1909, and for which he produced a remarkable series of caricatures. Knighted in 1918, he wrote Forty Years of Spy, 1915. He died May 15, 1922.

WARD, MARY AUGUSTA (1851-1920). British novelist, better known as Mrs. Humphry Ward. Born June 11, 1851, at Hobart,

Tasmania, she married T. Humphry Ward in 1872, and in 1881 published her first novel, Milly and Olly. Her other novels include



Mrs. Humphry Ward,
British novelist
Lafayette

Robert Elsmere, 1888; David Grieve, 1892; Marcella, 1894; Lady Rose's Daughter, 1903; The Marriage of William Ashe, 1905; Missing, 1917; and Fields of Victory, 1919. She was keenly interested in social work, and founded the Passmore Edwards Settlement. She died March 24, 1920.

Thomas Humphry Ward (1845-1926) is chiefly known by his edition of The English Poets, 1881-1918. For many years he was on the staff of The Times.

WARD, THOMAS (1810-58) British adventurer, known as Baron Ward. Born at York, Oct. 9, 1810, and trained as a jockey, in 1827 he entered the stables of Charles Louis, duke of Lucca, becoming his valet and confidential servant. In 1846 he was created a baron and made minister of finance. Upon Charles Louis's accession to the duchy of Parma, Ward became his prime minister. He negotiated the abdication of Charles Louis, and installed his son as Charles III, going to Vienna as minister plenipotentiary. On the assassination of Charles III in 1854, Ward was dismissed. He died Oct. 5, 1858.

WARD, WILLIAM GEORGE (1812-82). British theologian. Born March 21, 1812, in London, he was educated at Winchester and Christ Church, Oxford. Fellow and tutor of Balliol College, he became one of the leaders of the Tractarians. His book, The Ideal of a Christian Church, 1844, brought him into disfavour with the university authorities, and in 1845 he joined the Church of Rome. From 1851-58 he was lecturer at S. Edmund's College, Ware, and from 1863-78 editor of The Dublin Review. Known as Ideal Ward, he died July 6, 1882.

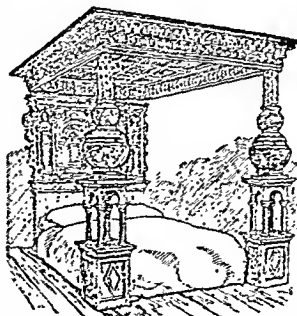
WARDEN. Defender, head, or high official. In England the guardians of the Scottish and Welsh borders were known as lords wardens of the marches. The lord warden of the stannaries is the head officer of the stannaries of Cornwall. Warden is the title of the heads of some colleges at Oxford.

WARDMOTE. Court or moot formerly held in each ward of an English town. Such are still held in the wards of the city of London. The court's powers include the supervision of the police, of ale and beer houses, and of beggars, vagrants, etc. See Moot.

WARD ROOM. In British warships, a common mess shared by the commander, unless he is in command, when he messes in his own cabin, and all other officers down to and including the rank of lieutenant. Junior officers mess in the gun room.

WARE.

Urban dist. and market town of Hertfordshire. It is on the Lea, 2 m. from Hertford, on the L.N.E. Rly. S. Edmund's Roman Catholic college is at Old Hall. At the Saracen's Head Inn



Ware. The Great Bed of Ware,
mentioned by Shakespeare
From a drawing by C. C. Harper

was preserved the Great Bed of Ware, 12 ft. square, now at Rye House. Malting and brick making are carried on. Market day, Tues. Pop. 5,949.

WAREHAM. Market town and borough of Dorset. It is about 2 m. from Poole Harbour, on the Southern Rly. The church of S. Mary contains the coffin of King Edward the Martyr. There are remains of British earthworks, called the walls. Market day, Thurs. Pop. 1,997.

War Grave. Term used for the graves of those who fell in the Great War and were buried in the war areas. See Grave.

WARHAM, WILLIAM (c. 1450-1532) English prelate. He entered the Church, and in 1494, being also a lawyer, he was made master of the rolls. In 1492



William Warham,
English prelate
After Holbein

Henry VII made him bishop of London and keeper of the great seal. He was translated to Canterbury in 1504 and was lord chancellor from then until 1515. Although he objected strongly to certain measures of Henry VIII's ecclesiastical policy, he remained archbishop and also chancellor of Oxford University until his death, which took place on Aug. 22, 1532.

WARKWORTH. Village of Northumberland. Near the mouth of the Coquet, 32 m. from Newcastle-upon-Tyne, on the L.N.E. Rly., it is famous for its Norman church, its castle founded about 1200, and the hermitage of Bishop Percy's ballad The Hermit of Warkworth. The castle, which came to the Percys in 1332, was presented to the nation by the duke of Northumberland in 1922. At the mouth of the Coquet is the port of Amble (q.v.). Pop. 1,042.

WARMBAD. Settlement in the South-West Africa Protectorate. It lies between Kalkfontein and Raman's Drift, on the Orange river, at an alt. of 2,361 ft. Pop. (white) 1,696.

WAR MEDAL, BRITISH. Decoration granted to those who left their native shores in any part of the British Empire for service overseas, whether they eventually entered a theatre of war or not, between Aug. 5, 1914 and Nov. 11, 1918. It was awarded in 1919, and is of silver. The medal in bronze was granted to all British subjects who were enrolled in native labour corps units and who served in theatres of war. The ribbon is: Centre orange, watered, with stripes of white and black on each side and with borders of royal blue.



War Medal. Reverse
of the British
decoration

WARMINSTER. Urban district and market town of Wiltshire. It is 20 m. N.W. of Salisbury, on the G.W. Rly., on the edge of Salisbury Plain, and has a 14th century church. It is a market for agricultural produce, has machinery works, and malting is carried on. Market day, Mon. (alternate). Pop. 5,451.

Warmsley. Colliery centre of Gloucestershire. It is 5 m. E. of Bristol, on the L.M.S. Rly. Pop. 2,600.

WARNEFORD, REGINALD ALEXANDER JOHN (1892-1915) British airman. Born in Cooch Behar, India, he entered the merchant service. On the outbreak of the Great War he joined the Sportsmen's Battalion, but transferred to the air service. Attached to the R.F.C. in France, on June 7, 1915, he attacked and destroyed a Zeppelin near Brussels. For this feat he was awarded

the V.C. On June 17, while flying at the Buc acrodrome, Versailles, his aeroplane crashed and he was killed.

WARNER, CHARLES (1846-1909). Stage name of Charles John Lickford, British actor. Born in London, Oct. 10, 1846. He was early associated with Samuel Phelps. He made his London debut at the Princess's Theatre, April 25, 1864, as Benvolio in *Romeo and Juliet*, and created the part of Charles Middlewick in *Our Boys*, at The Vandeville, Jan. 16, 1875. He achieved success in melodrama, especially as Concan, in *Drink*; Tom Robinson, in *It's Never Too Late to Mend*; and the title part in *Michael Strogoff*. He committed suicide in New York, Feb. 11, 1909.

WARNER, PELHAM FRANCIS (h. 1873). English cricketer. Born in Trinidad, Oct. 2, 1873, he was educated at Rugby and Oriel

College, Oxford, and became a harrister. Having played cricket for his school, he was in the university eleven in 1895-96, and also played for Middlesex. He was captain of the M.C.C. team that went to Australia in 1903, and was victorious in three out of five of the test matches; and of the one sent to S. Africa in 1905.



P. F. Warner, English cricketer

In 1911 he again took a team to Australia. He was captain of Middlesex, 1907-20, when he retired. His books include *How We Recovered the Ashes*, 1904, *My Cricketing Life*, 1921, and *The Fight for the Ashes*, 1930. He is editor of *The Cricketer*.

WAR OFFICE. British department of state. At its head is the secretary of state for war, who is ex officio president of the army council, which regulates the affairs of the whole British as distinct from the Indian army. Its constitution is liable to change, but it has always hitherto contained four military and several civilian members, the latter now including the parliamentary under-secretary, the financial secretary of the war office, and the permanent under-secretary, who, as secretary of the war office, also exercises general control. The four military members consist of the chief of the imperial general staff, the adjutant-general, the quartermaster-general, and the master-general of the ordnance.

The headquarters of the war office are housed in an imposing structure between Whitehall Place and Horse Guards Avenue, designed by William Young and built in 1899-1906, at a cost of over £1,000,000. See *Whitehall*.

WARP. Those threads of a fabric, running lengthwise throughout the piece, across which the transverse or weft threads are woven. Normally they have to take the greater part of the strain in wear, and to withstand an appreciable strain in course of weaving.

Weaving can be so arranged that warp threads predominate upon the face of the fabric, which is then known as warp faced. The warp is held taut in ordinary weaving, but it can be formed into loops, as upon the surface of Turkish towelling or Brussels carpet. It may be constituted of different materials or colourings, which appear in the fabric as stripes. The warp threads near the edges are commonly distinct from the rest in thickness, material, or colour, to make the lists or selvages. See *Loom: Weaving*.

WARPING. Process of reclaiming or improving low-lying, swampy ground by inundating it with alluvial deposit. It is possible only near the mouths of rivers like the Nile or the English Humber, whose waters are at all times heavily charged with silt. Some of the finest wheat crops in the world are grown upon warped land around the Wash.

Warracknabeal. Town of Victoria, Australia. It is 217 m. N.W. of Melbourne by rly. on the line to Hopetonn. Pop. 2,500.

Warragul. Town of Victoria, Australia. It is 62 m. by rly. S.E. of Melbourne on the main line to Orbost. Pop. 2,300.

WARRANT. Name given to a document that authorises or assures. In English law it is a written order, given by a person in authority, to do some act. Warrants are issued for the arrest of alleged criminals and for searching premises. A distress warrant is one authorising the sheriff's officer to seize goods for arrears of rent. Ordinary warrants are signed by magistrates, sheriffs, or other legal officials. Warrants of other kinds are issued by the sovereign. The term is also used for documents authorising the payment of dividends or the delivery of goods out of bond. See *Arrest*; *Distrain*.

WARRANT OFFICER. In the British navy, a rank between commissioned officer and petty officers and men. Each branch of the navy's personnel now has its quota of warrant officers. They are promoted from the lower deck, and may obtain further promotion until they reach the rank of lieutenant.

In the British army, warrant officer is a rank intermediate between that of commissioned and non-commissioned officer. In each of the departmental corps, such as the R.A.S.C., R.A.O.C., and R.A.M.C., there are a stated number of warrant officers, and in each regiment of cavalry and battalion of infantry there are nominally two, the regimental sergeant-major and the handmaster.

WARRE, EDMOND (1837-1920). British schoolmaster. Born in London, Feb. 12, 1837, he became fellow of All Souls College in 1859, and rowed in the Oxford eight, 1857-59. Returning to his old school, Eton, as assistant master in 1860, he was ordained and made headmaster in 1884. He retired in 1905 and in 1909 was elected provost. One of Eton's most notable headmasters, Warre wrote on rowing. He died Jan. 22, 1920.

WARREN. Breeding place for rabbits. In artificial enclosures one acre, covered with good grass and planted frequently with furze and juniper, is sufficient to support about twenty rabbits. The word is also used for ground enclosed for the preservation and breeding of game, or for a fish preserve in a river. In legal terminology, free warren, or right of warren, is a franchise, obtained by prescription or grant of the crown, for the right of property in heasts and fowls of warren.

WARREN, SIR CHARLES (1840-1927). British soldier. Born Feb. 7, 1840, he entered the R.E. in 1857 and for a time was engaged on surveying work in Palestine. He commanded troops against the Bechuanas, 1875, and 1884-85, when he was knighted. In command in the Suakin campaign, 1886, he was commissioner of the metropolitan police, 1886-88, and commander-in-chief of the Straits Settlements, 1889-94. In the S. African War, when in command of the 5th division, 1899-1900, he incurred much criticism through his operations at Spion Kop. He died Jan. 21, 1927.

WARREN, SAMUEL (1807-77). British novelist. Born near Wrexham. May 23, 1807,

1859, and died July 29, 1877. Warren's fame rests upon his novel, *Ten Thousand a Year*. Great popularity was also achieved by his melodramatic *Passages from the Diary of a Late Physician*.



Samuel Warren, British novelist

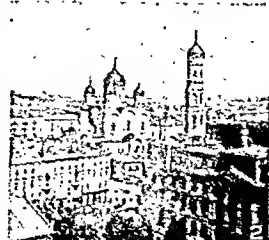
WARRENPOINT. Seaport and urb. dist. of co. Down, Northern Ireland. At the head of Carlingford Lough, 6 m. S.E. of Newry, it is served by the G.N. of I. Rly. Pop. 1,900.

Warri or Warl. Port of Nigeria. It stands 80 m. S. of Sapele by creek. on the Forcados branch of the Niger estuary. See *Nigeria*.

WARRINGTON. Co. hor. and market town of Lancashire. On the Mersey, between Liverpool and Manchester, it is served by the L.M.S. and the Cheshire Lines Rlys., and has rail and canal communication with all parts of industrial Lancashire and Cheshire. The parish church of S. Elphin, on the site of a 12th century building, contains monuments of the Boteler family. Other buildings are the grammar school, founded in 1526, and the blue coat school, 1665. There are a town hall, technical institute, and market hall. The town is a busy industrial centre, manufacturing wire, pins, tools, cotton, leather, glass, and soap. Oliver Cromwell gained a victory here over the Scots in 1648. Market days, Wed. and Sat. Pop. 77,280.

WAR SAVINGS CERTIFICATE. Form of British Government security first issued in 1916 during the Great War. The small investor was attracted by the issue of certificates through the post office to be sold for 15s. 6d. each, £1 to be repaid at the end of five years. This meant compound interest at something over 5 p.c. per annum, and, moreover, complete freedom from income tax. The only restraint was that no one person could hold more than 500. The price was raised to 16s. on April 1, 1922. From Feb., 1916, to Sept. 20, 1930, the number of certificates sold was 983,530,294, of a value of £772,433,985. The amount standing to the credit of the holders at the same date was £483,000,000.

WARSAW (Polish Warszawa). Capital of Poland. It stands on the left bank of the Vistula, 404 m. from Berlin, at the junction of railways communicating with Leningrad, Moscow, Vienna, and elsewhere. On the right bank, with bridge connexion, is the suburb of Praga, chiefly inhabited by Jews. Warsaw was formerly the residence of the Russian military and civil governors. The religious metropolis of Poland, it is the see of a Roman Catholic and a Greek archbishop. The university, founded in 1861, was suppressed in 1832, reopened in 1869, and re-founded after the Great War. It has a magnificent library.



Warsaw. 1. Part of the city, looking towards Praga. The twin spires belong to the R.C. Church of S. Florian. 2. The Greek Orthodox Cathedral of S. Alexander Nevski

The city, which is surrounded by walls pierced by eleven gates has boulevards on the model of those of Paris. Notable buildings include the cathedral of S. John (R.C.), the churches of the Holy Cross and S. Andrew, and a beautiful Lutheran church. The Alexander Nevski cathedral was demolished after the Great War. There are several palaces, some converted into municipal buildings.

Warsaw became the capital of Poland in 1609, taking the place of Cracow. After the third partition of Poland, it remained in possession of Prussia till 1806. In that year it was entered by the French, and by the treaty of Tilsit (July 7, 1807) it became the capital of the grand-duchy of Warsaw, which lasted six years. It was occupied by the Russians in 1813, and by the treaty of Vienna became the capital of the new kingdom of Poland. Warsaw figured prominently in the Great War, being captured by the Germans in Aug., 1915. In 1920 it was the objective of the Bolshevik armies, and in Oct. they approached near it, but the subsequent Polish victories removed the danger of its fall. Pop. 936,713.

WARSPITE. British battleship of the Queen Elizabeth (q.v.) class. She displaces 27,500 tons and carries eight 15-in., twelve 6-in., and two 3-in. guns. At the battle of Jutland the Warspite was hit eighteen times and had one turret gun put out of action.

A training ship called the Warspite, which lay off Greenhithe, was destroyed by fire, Jan. 20, 1918. It was replaced by another ship of the same name, moored off Grays, Essex.

WART. Overgrowth of the horny layer of the skin, occurring chiefly on the fingers and hands. A wart may be removed by the frequent application of caustics, glacial acetic acid being the one commonly employed. Solid carbon dioxide has given good results.

WARTEBURG. Peak of Thuringia, Germany. It is near Eisenach, in the Thuringian Forest, and is chiefly known from the castle built here by a ruler of Thuringia about 1100. It became a resort of the Minnesingers, and here in 1207 took place the competition between them mentioned in Wagner's Tannhäuser. The castle passed to the elector of Saxony, and to it Luther was taken by order of the elector Frederick III in May, 1521, when his life was in danger. See Luther.

WART DISEASE (Synchytrium endobioticum). Tumorous fungus-like growth which affects potatoes both upon stem and tuber. It obtains access to the potato through the eyes, and continues to expand in the form of a globular protoplasmic mass. The cells die, leaving only the cell wall, but the growth continues indefinitely. There is no remedy for this fungoid disease, and all infected tubers should be dug up and burnt. All occupiers of land upon which the disease occurs must at once report its appearance to the ministry of agriculture and fisheries. See Potato.

WART HOG (Phacochoerus). Genus of two species of African swine (Suidæ). Generally resembling the wild boar, they are distinguished by the large head, the four huge tusks, and the three flexible pads on each side of the long face. The pads or "warts" are believed to serve as shields for the rather prominent eyes during the contests of the boars. Both species (*P. aethiopicus* and *P. africanus*) are much alike, and have a long mane of coarse, bristly hair on the neck and back.

WARTON THOMAS (1718-90). British poet and critic. Born at Basingstoke, Jan. 9, 1728, he became

professor of poetry at Oxford in 1757. In 1785 he became Camden professor of history, and in the same year was made poet laureate. His fame rests on his scholarly *Observations on the Faerie Queene*, 1754, and still more on his uncompleted *History of English Poetry, 1774-81*, which is a landmark in English literature, inasmuch as it provoked reaction from 18th century classicism, and was thus a considerable factor in the romantic revival. He died at Oxford. May 21, 1790



Warwick. Double gateway of the 14th century castle showing, left, Caesar's tower

WARWICK. Borough, county town and market town of Warwickshire. On the Avon, it is 21 m. S.E. of Birmingham and is served by the G.W. and L.M.S. Rlys. The town became of importance with the erection, about 915, of the castle, founded by Ethelfleda, daughter of Alfred the Great. The present castle is a good example of 14th century fortification. In 1871 much of the interior was destroyed by fire. The principal church is S. Mary's, largely rebuilt after a fire in 1694. Parts of the older building remain in the chancel and the Beauchamp Chapel, which contains tombs of the earls of Warwick. Two of the old town gates remain. Near West Gate is the fine 14th century, half-timbered Leicester's Hospital, an almshouse. Market days, Wed. and Sat. (alternate). Pop. 12,362.

WARWICK, EARL OF. English title held by various families since the 12th century. The 1st earl was the Norman, Henry de Newburgh (d. 1123). On the death, in 1297, of Thomas, 6th earl, the title passed through two female descents to William de Beauchamp, 9th earl. On the death of Henry, the 14th earl, 1445, the title was granted to his daughter Anne's husband, Richard Neville, the king-maker. The title passed to Anne's grandson, Edward Plantagenet, who was deprived of his title and executed in 1499.

The family of Dudley held the title, 1547-90, and that of Rich, 1618-1759. In 1759 the earldom was granted to Francis Greville. From him was descended Francis (1853-1924), 5th earl of the new creation. He married Frances Evelyn, heiress of the Maynard family, who is known as a socialist. The chief seat of the earl is Warwick Castle.

WARWICK, RICHARD NEVILLE, EARL OF (1428-71). English statesman, called the king-maker. He was born Nov. 22, 1428, the son of Richard Neville, earl of Salisbury. Young Richard became earl of Warwick by his marriage with the heiress to the earldom. He helped his cousin, Edward of York, to crush the Lancastrians

and secure the throne. The king left the government to Warwick, but paralysed his policy by secret negotiations. Warwick rose in arms, captured the king, and in effect himself assumed the supreme authority. But the king suddenly turned the tables upon him; Warwick had to fly the country, but in Aug., 1470, he reappeared in England in arms. Edward fled the country, and Warwick restored the imprisoned Henry VI. But in March Edward once more landed in Yorkshire, and Warwick was killed at Barnet April 14, 1471. See Roses, Wars of the.

WARWICKSHIRE. Midland county of England. Its area is 945 sq. m. It contains in the S. spurs of the Cotswold Hills, Edge Hill rising to 826 ft., and in the N. is the forest of Arden, but the greater part is undulating. The Avon, Tame, and Leam are the chief rivers. The county has a large industrial area, including Birmingham and neighbourhood, as well as Coventry. Elsewhere agriculture is carried on, chiefly dairy farming and the growing of oats and wheat, and there are orchards and market gardening. The county is served by the G.W., L.M.S. and L.N.E. Rlys., and by several canals. Warwick is the county town. Others include Leamington, Rugby, Stratford-on-Avon, Nuncaton, Sutton Coldfield, and Bedworth, as well as the greater part of Birmingham; also Kenilworth, Maxstoke, and other places of historic or antiquarian interest. The county's literary associations primarily centre in Stratford-on-Avon (q.v.). Pop. 1,390,092. See map p. 1410.

WARWICKSHIRE REGIMENT, ROYAL. Regiment of the British army. The 6th of the line, it was raised in 1674 to help the Dutch in their fight against France, and remained in Holland until 1688, when it landed with William of Orange. It went with William III to Flanders, and at the battle of Steinkirk was all but annihilated. In 1705 the regiment was sent to Spain, and at the battle of Almanza it won the Antelope, which is now its badge, by seizing a standard with this emblem thereon. The Warwicks won further honours at the capture of Minorca, in the Peninsular War, in the defence of Canada, and in S. Africa. The distinction of being a royal regiment dates from 1832. Numerous territorial and service battalions, in addition to its regular battalions, did splendid service during the Great War. The regimental depot is at Warwick.



Warwickshire Regiment badge

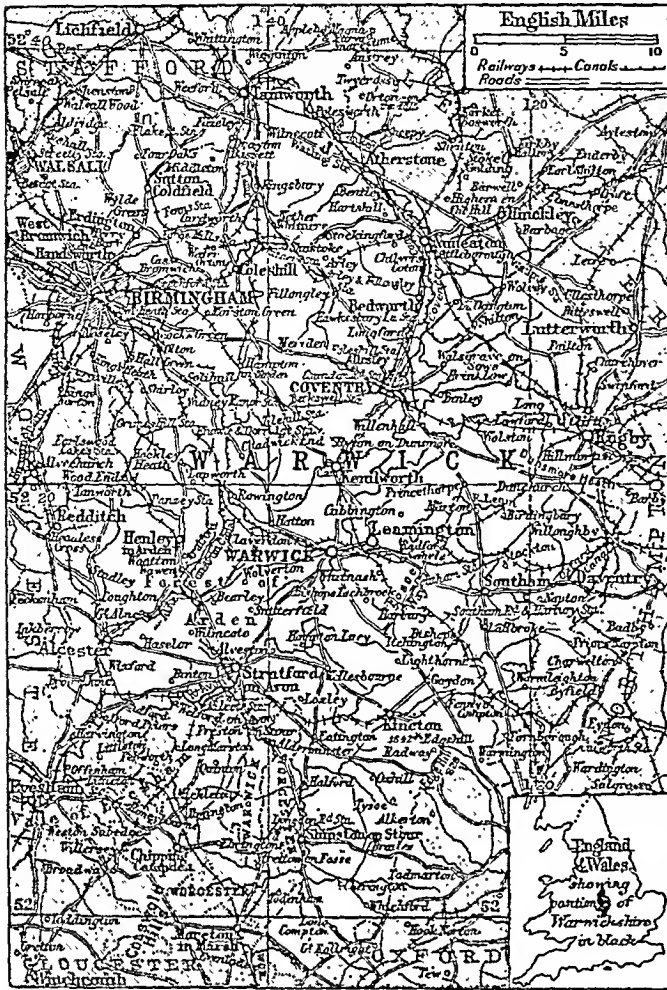
WASH, THE. Opening on the E. coast of England. It indents the coasts of Norfolk and Lincolnshire and is 22 m. long and 15 m. broad. It receives the rivers Ouse, Nen, Welland, and Witham, and is very shallow, being the submerged extension of the Fens. By the channels known as Boston and Lynn Deepes ships of moderate size can reach Boston and King's Lynn. The Wash was formerly far more extensive than it is to-day, much land having been reclaimed from the sea. See Fens.

WASHINGTON. Urban district of Durham. Near the Wear, 6 m. W. of Sunderland, it has a station on the L.N.E. Rly. and is a busy colliery centre. Pop 17,230.

WASHINGTON. State of the U.S.A. Lying along the Pacific coast, its area is 69,127 sq. m. It is crossed centrally from N. to S. by the Cascade Range, in and near which are several volcanic peaks, including Mt. Rainier (14,526), and in the W. the Coast Range follows a similar direction with Mt. Olympus (8,150 ft.). Between lies a broad depression, deeply cut into by Puget Sound, and E. the surface belongs in part to the great



Wart Hog. Boar of the Ethiopian species, *Phacochoerus aethiopicus*



Warwickshire. Map of the industrial and agricultural county. See article p. 1409. The plain of the Columbia river, but is mountainous in the N. and S. Wheat, barley, oats, maize, and fruit are the largest crops. Lumbering and mining, especially of coal, and fishing are important industries. Higher education is provided at the university of Washington and elsewhere. Olympia is the capital, but Seattle, Tacoma, Spokane, and other towns are of greater importance. Pop. 1,587,000.

WASHINGTON. Capital of the U.S.A., the official residence of the president, and the seat of the Federal Government and Congress.

The Corecoran Gallery has a fine collection of American paintings. Pop. 552,000.

WASHINGTON, BOOKER TALLAFERRO (1858-1915). American educator. A plantation slave, he was born near Hale's Ford, Franklin co., Virginia, and after the Civil War removed to Malden, West Virginia, where he earned a living first in a salt furnace and then in a coal mine. He studied at the Hampton Normal and Agricultural Institute, 1872-75, and later took a course at the Wayland Seminary in Washington. From 1879-81 he directed the work of Red Indians at the

venues cross. circles have been designed.

The Capitol dominates Washington. It stands on an eminence in a park, its dome crowned by the statue of Liberty. On either flank are the office buildings of the Senate and the House of Representatives. Across the park facing it is the Congressional Library.

At one end of Pennsylvania Avenue stands the famous White House, the official home of the president. It is an unpretentious two-storied building, resembling a country house rather than a state residence. Close to the White House are the principal departmental offices, as well as the headquarters of the U.S. Chamber of Commerce, a magnificent building. Washington is rich in statues and memorials of the past.

The Washington Monument stands in its own grounds on the Potomac. Universities comprise George Washington, Catholic University of America, Georgetown, Howard, and American (Methodist) University.

February 22, 1732, at Bridges Creek, Westmoreland co., Virginia, the son of a prosperous planter. At 16 he was appointed public surveyor of Culpeper co., and a little later adjutant-general, with the rank of major. In 1755 he was appointed to the staff of General Braddock, who was sent to evict the French, and earned a high reputation. In 1759 Washington married Martha Curtis, a rich widow, and devoted himself to the administration of her estates.

At the outbreak of the War of Independence in 1775 Washington was appointed to the chief command. He won a brilliant victory at Trenton, Dec. 26, 1776—a stroke that practically saved America. At Monmouth he converted, by his personal magnetism, an inglorious defeat into an important victory, June 28, 1778. The struggle remained uncertain until decided by the interposition of the French and the surrender of Cornwallis.

Washington, now almost a broken man, was prevailed on to assume the office of president, April 30, 1789, and with great difficulty arranged a compromise between the two parties into which the U.S.A. was now divided. The American constitution was the result of the president's exertions. Washington was re-elected president, being in office seven years altogether, during which he laid the foundation of the Monroe Doctrine (q.v.). He declined the third term of presidency, and retired in 1796 to his estate at Mount Vernon, where he lived until his death, Dec. 14, 1799. See Mount Vernon; Sulgrave; United States.

WASHINGTON CONFERENCE. Meeting convened by the U.S.A., Nov. 1921, to consider political conditions in the Pacific, the avoidance of naval rivalry, and the future of China. The chief powers participating were the British Empire, the U.S.A., France, Japan, and China; representatives of Italy, Holland, Belgium, and Portugal also attended. The British Empire, U.S.A., Japan, France, and Italy adopted

a five-power naval treaty, which was signed on Feb. 1, 1922. In addition, the same five powers signed a treaty against the use of submarines as commerce destroyers and against the employment of asphyxiating gases.

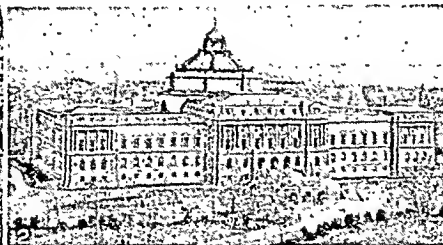
The problem of Japan was dealt with in a four-power treaty, signed by the British Empire, the U.S.A., France, and Japan on Dec. 13, 1921, to supersede the Anglo-



George Washington, American soldier and statesman
After Gilbert Stuart,
Met. Mus., N.Y.



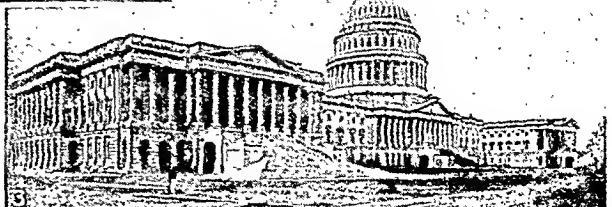
B. T. Washington,
American negro
educator



It is continuous with the district of Columbia, and stands on the left bank of the river Potomac. Through the influence of George Washington a site was selected in 1790 on the borders of Maryland and Virginia. It was named after the first president, and laid out by Major L'Enfant, a French engineer officer. The city has the usual rectangular American streets, but intersecting them is a system of diagonal avenues, generally lined with trees and 160 feet wide. Where streets and

Hampton Institute, and was principal of Tuskegee Institute, Alabama. He died Nov. 15, 1915. His books include his autobiography, *Up from Slavery*, 1901.

WASHINGTON, GEORGE (1732-1799). American soldier and statesman. He was born.



Washington. 1. The White House, official residence of the President, completed in 1800. 2. The Library of Congress, completed in 1897. 3. The Capitol, from the N.W.

Japanese treaty A series of negotiations resulted in the restoration to China of much of the independence she had lost See London Naval Treaty Navy

WASHINGTON POST. Dance. It was invented and adapted to ballroom dancing during the Victorian era The music composed for it by J. P. Sousa (q.v.) and having the same name, was later found suitable for the two-step (q.v.)

WASP. Popular name for several families of hymenopterous insects, covering social wasps (Vespidae), solitary wasps (Eumenidae), wood wasps (Pompilidae), and sand wasps (Ammophila, etc.) In ordinary usage it refers to the social wasps of the genus *Vespa*, of which there are seven British species. Unlike the other groups of the Hymenoptera, the

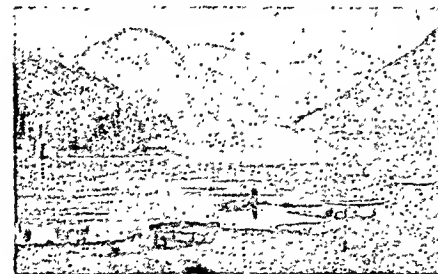


wasps when at rest fold the wings longitudinally. The females are provided with a sting, and are much larger than the males, which in turn are larger than the workers. The species is continued through the winter by autumn-emerged females called queens. The queen in spring constructs a few connected six-sided cells of paper, prepared by pulping wood fibres shaved from the nearest post or fence. In each cell an egg is laid, and, while waiting for these to hatch, other cells are built and eggs deposited See Hornet; Insect.



Wasp. Solitary wasp, *Eumenes coarctata*, on its nest. Above, left, queen of *Vespa vulgaris*

WASTWATER. Lake of Cumberland, in the S.W. of the Lake District. It is about 3 m. long and less than ½ m. broad. On one side the scree forms an almost perpendicular wall of rock. Wasdale Head is a climbing centre.



Wastwater, Cumberland, situated among the wildest scenery of the Lake District

WATCH. One set to keep watch, usually over a building or the streets of a town during the night. Watch committee is the name given to the committee of a town council which looks after the police. See Police.

Watch as a naval term is applied both to men and to time. In a commissioned ship the seamen are divided into two watches, starboard and port, and each watch is divided into two parts (1st and 2nd), and each part into two subdivisions. As regards time, the naval day is divided into seven watches, viz. 1st watch, 8 p.m. to midnight; middle watch, midnight to 4 a.m.; morning watch, 4 a.m. to 8 a.m.; forenoon watch, 8 a.m. to noon; afternoon watch, noon to 4 p.m.; first dog watch, 4 p.m. to 6 p.m.; second dog watch, 6 p.m. to 8 p.m.

WATCH. Small portable machine for measuring time. Its invention is due to Peter Hele, of Nuremberg, about 1500, who devised the mainspring. The latter was improved by Jacob Zech of Prague in 1525, by the invention of the fusee. In 1658 Hooke discovered the balance spring, for rendering the vibrations of the balance isochronous. Later Hooke introduced the anchor escapement, and about 1695 Tompion patented a cylinder escapement, and Graham brought out his dead-beat escapement. In the 18th century compensation balances appeared. In 1820 Thomas Prest patented a keyless watch.

The working of an ordinary watch is as follows. The centre pinion rotates once in an hour. On this pinion is fixed the centre wheel, which drives the third wheel pinion. This in turn has fixed on it the third wheel, which drives the fourth wheel pinion. On the latter is mounted the fourth wheel, which drives the escape pinion, and on the latter is mounted the escape wheel. As the centre wheel makes one rotation, the fourth pinion makes sixty, and the escape wheel six hundred. The pivots of the various wheels and pinions are mounted between two plates kept apart by pillars. The centre wheel has connected with it wheels driving the hour and minute hands. The seconds hand is mounted on the fourth pinion See Chronometer; Clock

WATCHET. Urban dist. and port of Somerset. It stands on the Bristol Channel, 17 m. from Taunton, on the G.W. Rly. It has a harbour. Pop. 1884.

WATER. Chemical compound (H_2O) of hydrogen and oxygen. It consists, by volume, of one part of oxygen to two of hydrogen. At normal temperatures it is a tasteless, chemically neutral liquid. In small quantities it is colourless; in large quantities it has a bluish tinge. The varying colours of water in the mass, as in lakes, seas, etc., are due to impurities, sky reflection, etc. Pure water freezes at standard pressure at 0° C. (32° F.), increasing in density as the temperature is lowered from boiling point, 100° C., to 4° C. From the latter temperature to freezing the density of water decreases. Under pressure the temperature of freezing may be raised considerably, and with decrease of pressure, as on mountain tops, the boiling point of water is lowered.

Water is highly incompressible, and expands when solidified. It has a greater specific heat than any known substance except hydrogen. It is used as a standard for the measurements of specific gravity, specific heat, etc. It is a bad conductor of heat and electricity, a powerful solvent, and plays an important part in chemical action. See Hydraulics; Ice.

WATER BATH. Apparatus used for heating at constant temperature to digest, evaporate, or dry preparations or solutions. It consists of an inner vessel separated from an outer one by a chamber containing water constantly heated, so that the temperature does not exceed that of boiling water.

WATER BED. Large bag, shaped like a mattress, filled with water. It is used to distribute pressure over as large a surface as possible, in the treatment of invalids who are liable to develop bed sores.

WATER BUCK (*Cobus ellipsiprymnus*). Species of antelope, occurring in E. and S. Africa. It stands about 4 ft. high at shoulder, and has a greyish-brown coat with white muzzle and a white ring on the buttocks. It is found in swampy places. See illus. p. 96.

WATER BUG. Aquatic insect of the order Hemiptera, comprising several families, of which many species inhabit ponds in Britain.

Among these are the pond-skaters (Hymetrididae), with slender bodies and long, thin legs. The Nepidae are represented by the water scorpion and the water stick-insect, while the chief British member of the

Notonectidae is the well-known boatman, which rows its boat-shaped body under water. See Water Scorpion.

WATERBURY. City of Connecticut, U.S.A. It stands on the Naugatuck river, 34 m. S.W. of Hartford. It is an important centre of the brassware industry, and is noted for the manufacture of watches and clocks. Pop. 109,821

WATER COLOUR. Art and process of painting with colours compounded with an adhesive substance, such as gum or size and mixed

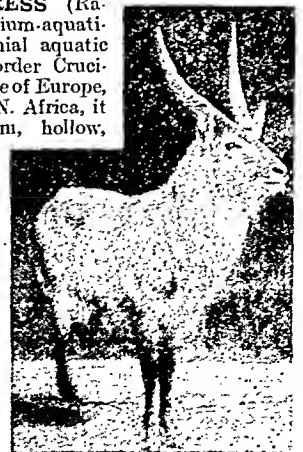
with water. Water colour pigments are supplied either in dry cakes or in moist form, in metal tubes, the moisture being preserved by glycerin or a similar compound. Paintings in this medium are executed either in transparent washes, or in opaque colours, or in a combination of the two; and owing to the quick drying of the pigments, the medium is the favourite one for rapid sketching.

Originally used to tint engravings and fill in outline drawings, mainly in monochrome, water colour painting in full colour was developed in England by Paul Sandby, and fully established by Thomas Girtin and J. M. W. Turner at the beginning of the 19th century. In 1805 the first exhibition of the Water Colour Society was held, and within the next half-century David Cox, Peter de Wint, Cotley Fielding, J. S. C. Aman, R. P. Bonington, W. H. Hunt, and others had made their great reputations in water colour landscape. There is a Royal Society of Painters in Water Colours whose headquarters are at 5a, Pall Mall East, S.W.1. See Art; Painting.



Watercress. Edible leaves and roots. See below

WATERCRESS (*Ranunculus nasturtium-aquaticum*). Perennial aquatic herb of the order Cruciferae. A native of Europe, W. Asia, and N. Africa, it has stout, firm, hollow, creeping stems, which root in the mud. The alternate leaves are divided into three to six pairs of somewhat heart-shaped leaflets, often of an olive tint. The small, white flowers are clustered in short sprays. The fruit is a small pod.



Water Buck. Long-horned antelope that herds in swampy places in S. Africa. W. S. Berridge, F.Z.S.

It has a hot biting flavour, and has been esteemed from ancient times as a salad herb and antiscorbutic.

WATER DROPWORT OR **HEMLOCK DROPWORT** (*Oenanthe crocata*). Perennial marsh herb of the order Umbelliferae, native of Europe. It has parsnip-like root-fibres an inch

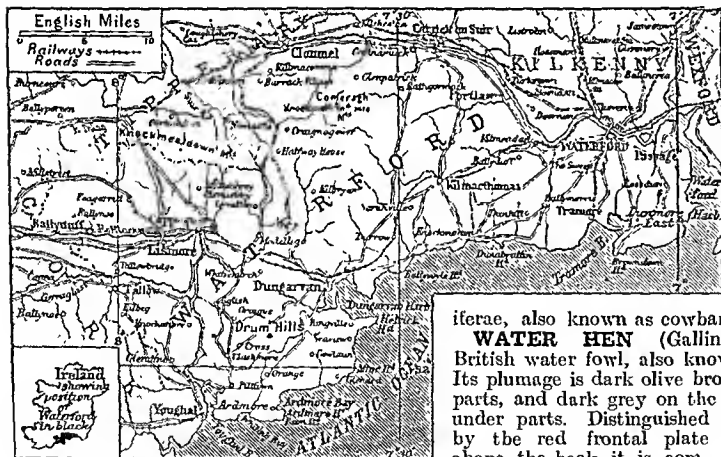


Water Dropwort. Flowers of the marsh herb

thick; a grooved, stout, hollow stem 2-5 ft. high; and large, wedge-shaped leaves, several times divided into small wedge-shaped segments. The minute white flowers are clustered in numerous little umbels which are associated in compound

umbels. They give off a winc-like odour and the juice turns yellow on exposure. It is a very poisonous plant, and accidents have been caused by its being mistaken for celery.

WATERFALL. Fall or perpendicular descent of the water of a river or a stream. Waterfalls are usually found in the upper or mountain courses of rivers, but they may be found at any point where the river flows from hard to soft layers of rock, or where hard layers cover soft. Waterfalls are of economic value. They provide power, especially electrical, by means of which work can be accomplished at factories situated at a considerable distance from the falls themselves. See Niagara: Victoria Falls; Water Power.



Waterford. Map of the county of the Irish Free State

WATERFORD. County of Munster, Irish Free State. In the S. of the country, it has an area of 708 sq. m. and a coastline of 50 m., thereon being the harbours of Waterford, Dungarvan, and Youghal, and Tramore Bay. The surface is mainly hilly. Along the N. border are the Comeragh and Knockmealdown Mts.; in the S.W. are the Drum Hills. The chief rivers are the Suir, along the N. boundary, and the Blackwater. Agriculture is prosperous, especially dairy farming, and the fisheries are important. There are copper mines, and marble is quarried. The G.S. Rlys. serve the county. Waterford is the county town; others include Dungarvan, Lismore, and Cappoquin. There are remains of several castles and of barrows. Pop. 51,915.

WATERFORD. County bor. and capital city of co. Waterford, Irish Free State. Near the confluence of the Suir and Barrow, 94 m. S.W. of Dublin, it is an important junction on the G.S. Rlys., a shipping port, and has steamer connexion with Fishguard, Bristol, and other ports. A bridge across the Suir

connects with Ferrybank. Tramore, close by, is a popular seaside resort. Butter, bacon, and cattle are exported. The industries include bacon curing, brewing, flour milling, shipbuilding, and ironworking. There are Protestant and R.C. cathedrals. Pop. 26,647.

WATERFORD, MARQUESS OF Irish title held by the family of Beresford since 1789. The family was founded by Sir Tristram Beresford (d. 1673), who was M.P. for Londonderry, and whose great-grandson, Sir Marcus, was created Baron Beresford, and, in 1746, earl of Tyrone. His son George, who succeeded as 2nd earl in 1763, was created marquess of Waterford in 1789. From him the descent has been in direct male line to John Charles (b. 1901), the 7th marquess. The family seat is Curraghmore, Waterford.

WATER GAS. Gas produced when steam is passed through red-hot coke or anthracite. The steam is decomposed and hydrogen and carbon monoxide formed, and the mixture is known as water gas or blue gas. When mixed with hydrocarbon vapour it is called carburetted water gas, and in this form is employed for mixing with coal gas. Water gas is more poisonous than coal gas on account of the carbon monoxide it contains. See Gas.

WATER GLASS. Sodium silicate. It is known as water glass or soluble glass, because it resembles glass in appearance, but by the prolonged action of water it can be dissolved. As found in commerce sodium silicate is a thick liquid, which can be thinned by means of water. Among its many industrial uses are in preserving stone; in soap making to confer hardness; in the salt glazing of earthenware; in dyeing and calico printing, and for the preparation of unflammable wood and paper. A common household use is as a preservative of eggs. See Silicon; Sodium.

Water Hemlock (*Cicuta virosa*). Perennial marsh herb of the order Umbelliferae, also known as cowbane (q.v.).

WATER HEN (*Gallinula chloropus*). British water fowl, also known as moor hen. Its plumage is dark olive brown on the upper parts, and dark grey on the head, neck, and under parts. Distinguished by the red frontal plate above the beak, it is common about water in most parts of the British Islands, and is an expert swimmer and diver. It nests among the reeds, and its food consists mainly of slugs, worms, and insects.

WATERHOUSE, ALFRED (1830-1905). British architect. Born in Liverpool, July 19, 1830, he began to practise in Manchester, but in 1865 removed to London. In 1878 he was made A.R.A., becoming R.A. in 1885, and he died Aug. 22, 1905. Waterhouse made his reputation by designing the assize courts and town hall in Manchester. He was also responsible for Eaton Hall and other residences, and in London the Natural History Museum, New University Club, National Liberal Club, etc. He designed Girtton College, Cambridge, S. Paul's School, London, and University College, Liverpool. See Girtton.

WATERHOUSE, JOHN WILLIAM (1849-1917). British painter. The son of an artist,

he first exhibited at the Royal Academy in 1874. He became A.R.A. in 1885, R.A. in 1895, and died Feb. 10, 1917. Among his paintings, executed after the style of Burne-Jones, are *The Martyrdom of St. Eulalia*, 1885 (Tate Gallery); *The Magic Circle*, 1886, purchased by the Chantrey Bequest; and *Hylas and the Nymphs*, 1897.

WATER HYACINTH (*Eichhornia crassipes*). Perennial aquatic herb of the order Pontederiaceae. A native of S. America, it has a thick root-stock



Water Hyacinth. Leaves and cluster of flowers

and large, round, fleshy leaves whose stalks are swollen. The large violet flowers are clustered. The plants often float on the surface and propagate to such an extent that they block the rivers.

WATER LILY (*Nymphaeaceae*). Natural order of about 60 perennial aquatic herbs, natives of temperate and tropical regions. The flowers are white, pink, red, and yellow. The commonest water lily is the British

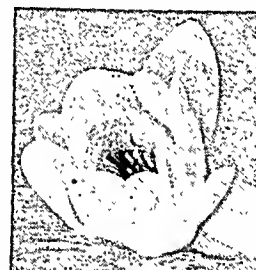
Nymphaea lutea, and the finest the S. American *Victoria regia* (q.v.). The cultivation of the tropical species requires specially prepared tanks, in which the temperature of the water is never allowed to fall below 65° F.

WATERLOO. Manufacturing centre of New South Wales, Australia, practically an industrial suburb of Sydney. There are glass and soap works, breweries, and paper mills. See Sydney.

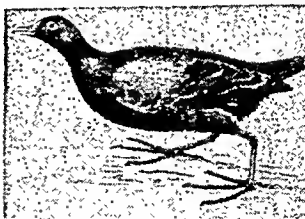
WATERLOO, CAMPAIGN OF. Military operations between the British and their German and Dutch allies and the French that culminated in the battle of June 18, 1815. Waterloo is a village 11 m. S. of Brussels. Near it is Mont St. Jean, after which the French name the battle. Memorials mark its site.

On June 12 Napoleon had over 120,000 men on the Belgian frontier. Around Namur was a Prussian army under Blücher, about equal in strength. Wellington, at Brussels, in command of 90,000 men, of whom about 30,000 were British, expected Napoleon to march upon that city. The first fighting took place on the 16th. The French attacked the Prussians at Ligny and St. Armand. The allies, too, were engaged at Quatre Bras, 6 m. away. There some Dutch and Belgian troops withstood furious French attacks until a British detachment arrived. Both of these battles were indecisive.

On the 17th, while Napoleon hesitated, the British concentrated at Waterloo, save 17,000 men at Hal and elsewhere. Napoleon, who had detached 33,000 men under Grouchy to follow the road he thought the Prussians would take, hurried with the remainder of both armies after the British. At Gemappe there was a skirmish,



Water Lily. Opening flower of *Nymphaea alba* S. Leonard Bastin



Water Hen. British diving bird that nests among the reeds

after which the two armies spent the night, a wet one, on the morrow's battlefield. Wellington had now 67,000 men under him; Napoleon had 74,000 and was stronger in both cavalry and artillery. Before the British were the farmhouses of La Haye Sainte and Hougoumont. The divisions of infantry composed the line, with reserves and cavalry behind.

The French, at 11.30, opened the battle. On the British right a fierce struggle took place for Hougoumont; on the left, after a long cannonade, the Dutch and Belgians gave way, but the position was saved by a charge of British infantry. The French strove hard around La Haye Sainte in the centre, but here, too, their efforts to pierce the British front were unavailing until about 6 p.m., when they seized the farmhouse, which, however, they were soon forced to abandon. Meanwhile, the French cavalry were making their memorable series of charges upon the British squares. These failed, although the defenders paid a heavy price for their steadiness and valour.

The emperor then made his final attempt at victory. The Imperial guard were ordered forward, and under Ney the veterans advanced, as did the remnants of the other troops. They were close when Wellington gave the word and the British guards, having fired, dashed forward with the bayonet. An advance of the whole line followed. The British cavalry dashed forward to complete the victory, and soon the French were in flight, pursued by the Prussians. The losses of the British and their auxiliaries were 30,000. See *Belle Alliance*.

WATERLOO BRIDGE. London bridge across the Thames between Wellington Street, Strand, and Lambeth. Designed by George Dodd, it was built by a company, the engineer being John Rennie. The first stone was laid, Oct. 11, 1811, and the bridge was opened on June 18, 1817, the anniversary of the battle of Waterloo. Of granite, it consists of nine elliptical arches, the roadway on which is level with that of the Strand, and is carried by a gentle declivity, on brick arches, to the level of the roads near the Surrey Theatre. The reconstruction of the bridge was begun in 1925, as in 1924 structural defects in the arches had appeared. A temporary bridge was erected alongside. See *Somerset House*.

WATERLOO CUP. Coursing competition, the chief of its kind. It is held every year early in Feb., at Altcar, near Liverpool. It originated in 1836, and owes its name to the fact that its leading promoter was landlord of the Waterloo Hotel, Liverpool. See *Coursing*. Since 1922 the winners of this cup have been:

- 1922 Guards Brigade (Lord Tweedmouth).
- 1923 Latto (Earl of Lonsdale).
- 1924 Cusby Job (Thomas Cook).
- 1925 Pentonville (A. Pilkington).
- 1926 Jovial Judge (J. Jarvis).
- 1927 Golden Seal (A. Gordon Smith).
- 1928 White Collar (Mrs. Sofer Whitburn).
- 1929 Golden Surprise (A. Gordon Smith).
- 1930 Church Street (G. Smith).

WATERLOO STATION. Chief London terminus of the Southern Rly., formerly the terminus of the L. & S.W. line. Since the amalgamation of 1921 it has been the head-

quarters of the Southern Rly. system. It forms a sort of triangle between the Waterloo, York, and Westminster Bridge Roads, and is connected with the Waterloo and City (Tube) Rly., opened 1898, and the Bakerloo (q.v.) Rly. The new station, opened in 1922, has two main entrances, that nearest York Road forming a memorial to the company's employees who fell in the War. The station covers a total area of 24½ acres.

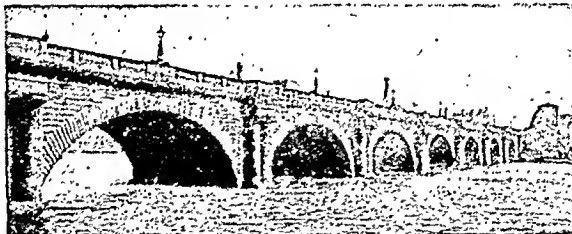
WATERLOO-WITH-SEAFORTH. Urban dist. and watering place of Lancashire.

A popular bathing resort for Liverpool, from which it is 4 m. distant, it is near the mouth of the Mersey, on the L.M.S. Rly. Pop. 29,626.

WATERLOW, SIR ERNEST ALBERT (1850-1919). British painter. Born in London, May 24, 1850, in 1872 he entered the R.A. schools, gaining the Turner gold medal in 1873. Member of the Royal Society of Painters in Water Colours, 1880, and later president, he was elected A.R.A. in 1890, and R.A. in 1903. He was knighted in 1902.

His *Galway Gossips* was bought by the Chantrey trustees. Popular among his pictures were *A Sussex Homestead*, *Green Pastures*, *A Moorland Road*, *Warkworth Castle*, and *Hemingford Mill*. He died on Oct. 25, 1919.

WATERLOW, SIR SYDNEY HEDLEY (1822-1906). British merchant. Born in London, Nov. 1, 1822, in 1864 he started a printing department in connexion with his father's stationery business. In 1857 Waterlow became a member of the city corporation. He



Waterloo Bridge, London. The up-stream side of the Thames bridge before its reconstruction

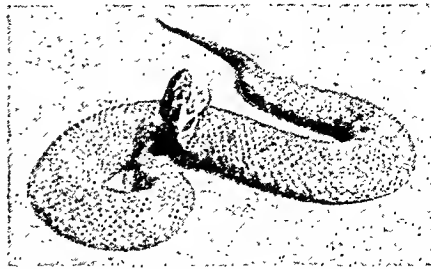
was sheriff in 1866-67 and lord mayor in 1872-73. Knighted in 1867, he was made a baronet in 1873. He sat in Parliament as a Liberal 1868-69, 1874-80, 1880-85, and died Aug. 3, 1906, having presented to the public his house at Highgate and the grounds which now form Waterlow Park.

Another member of this family, Sir William Alfred Waterlow (b. 1871), was lord mayor of London 1929-30.

WATER MARK. Device produced in the manufacture of paper. It is made by pressure of a projecting design on the dandy roll, in the mould, so making the paper thinner where it comes in contact with the design.

Water Melon. Trailing perennial plant of the order Cucurbitaceae. See *Gourd*; *Melon*.

WATER MITE. (Hydrachna). Minute aquatic creature. Belonging to the order Acari of the class Arachnida, it is somewhat similar in appearance to the allied spider. The larvae possess six legs and a large sucking apparatus,



Water Moccasin. Venomous snake that haunts shallow waters of the southern U.S.A.

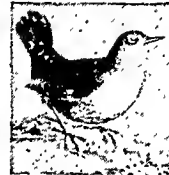
W. S. Berridge, F.Z.S.

by means of which they live parasitically upon larger aquatic animals.

WATER MOCCASIN (Aneistronodon piscivorus). Venomous aquatic snake of the southern U.S.A., also called cotton-mouth. It is a yard or more in length, with a thick body and tapering tail, the colour being dark ruddy brown above with darker bands, and black below with whitish markings. It feeds on fishes and frogs, but often attacks humans.

WATER MOSS (Fontinalis antipyretica). Aquatic plant of the order Bryaceae. It is attached to stones, chiefly in running water. It has very long, branching stems, with their leaves arranged in three series.

WATER OUZEL OR **DIPPER** (Cinclus aquaticus). A bird common in Devonshire, where it is often seen about the streams, feeding on aquatic insects. It is brown in colour, with white under parts, and is able to walk about under water by gripping the stones with its feet. Its nest is made of grass, skilfully concealed by a covering of moss.



Water Ouzel or dipper

WATER POLO. Aquatic ball game. It is played with a football not less than 27 inches and not more than 28 inches in circumference. A team is composed of 7 players, generally divided into three forwards, one half-back, two backs, and a goalkeeper. The distance between goals varies from 19 to 30 yards. The width is not more than 20 yards. Only one hand may be used, and it is a foul to touch the ball with both hands at the same time. The duration of play is 14 minutes. See *Polo*; *Swimming*.

WATER POWER. The use of some form of water wheel is very ancient. Owing to the invention of the steam engine, the development of water power lagged during the 19th century, and the types of water wheel in use were clumsy, heavy devices, poor in efficiency, and unsuitable for high falls. In recent years the Pelton wheel and the larger water turbine have been evolved, and the development of the dynamo and of high-voltage electric transmission has restored water power to its former relative importance.

In all civilized regions where a natural fall is available or an artificial head of water can be procured, hydro-electric plants generate the tremendous supplies of current needed for electro-chemical and electro-physical processes of manufacture, to say nothing of the distribution of energy for power and lighting.

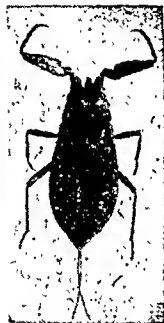
It has been estimated that the available water power of the world is 200,000,000 horse power, of which only about one-eighth has been harnessed. In Europe water power is being extensively used by France, Italy, Norway, Spain, Sweden, and Switzerland; in

America by Canada and the U.S.A.—especially the latter country, where about one-third of the available power is utilised; and in Asia by Japan, where great strides have been made in the last decade. See Hydraulics; Hydro-electric Machinery; Shannon (p. 756); Tide: Turbine: Water Wheel.

WATERPROOFING. Coating of various substances to render them impervious to water. Fabrics are generally coated with rubber for this purpose. The rubber is worked up with naphtha into a sticky dough consistency, and an even layer is spread on the fabric by means of rollers. Fabrics are also waterproofed by impregnating with soap and afterwards dipping with a solution of alum. Wood, leather, etc., may be waterproofed with paraffin while varnishes and waterglass are both excellent waterproofing substances.

Water Rat. Popular but erroneous name for the water vole. See Vole.

WATER SCORPION. Family of water bugs, some of which are common in the ponds of Great Britain. The curved forelegs and the tail-like appendage to the abdomen give this insect something of the appearance of a scorpion. The tail is really a breathing tube, and is raised above the surface when the insect comes up for air. See Water Bug.



Water Scorpion.
Nepa cinerea,
about nat. size

WATER SPIDER (*Argyroneta aquatica*). Aquatic arachnid, a native of the British Isles. It lives almost entirely in fresh-water streams. The long hairs which cover the abdomen retain a bubble of air when the spider swims below the surface, thus enabling it to breathe. It constructs a dome-shaped, watertight cocoon on the submerged stems of water-weeds, and into it discharges the air that it brings down. It spends the winter in a torpid state in the nest so constructed, and there lays its eggs. See Spider.

WATERSPOUT. Phenomenon equivalent to a tornado at sea. It is a violent whirlwind which produces a dark, funnel-shaped cloud tapering downwards towards the sea, so that it resembles a spout or trunk joining the sea to the cloud. See Tornado.

WATER THYME (*Elodea canadensis*). Perennial aquatic herb of the order Hydrocharitaceae. It is a native of N. America, but is naturalised in Europe. It has slender, brittle, jointed stems, as much as four feet long, which root at the joints. The plant made its appearance in Ireland in 1836, and in England seven years later. It spread rapidly all over the country, and choked many canals and streams.



Water Thyme.
Leaves and long-stalked
flowers

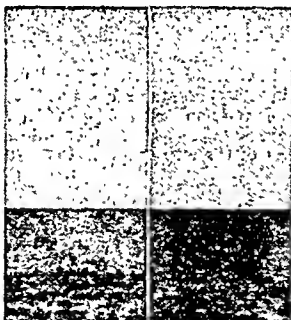
WATER VIOLET (*Hottonia palustris*). Perennial aquatic herb of the order Primulaceae; a native of Europe and W. Siberia. It is a floating plant, the thick succulent branches rooting on the surface. The erect flower stem stands out of the water to the height of a foot or more. On it are borne the flowers, which are lilac in colour and salver-shaped.

WATER WHEEL. Wheel turned by water caught in vanes parallel to the axis. Water wheels are the oldest means of utilising water power. The overshot wheel receives the water at the top, the water acting by gravity. Water enters a breast wheel below the top, and turns it by weight entirely if caught in buckets, or partly by its velocity if vanes are used. The undershot wheel receives water at the bottom, and makes use of its momentum.

In hydro-electric plants handling water at high heads the Pelton wheel is usually employed. This has a series of cup-shaped buckets placed around its periphery, and the water is delivered through a nozzle at high velocity. Speed is controlled by a needle valve, which regulates the volume of water. The Francis turbine, used in plants where there is a medium or low fall, consists of a wheel, usually set horizontally on a vertical axis, having a number of curved vanes or buckets set around it. The water is delivered through a series of guide vanes surrounding the runner. See Hydraulics; Turbine: Water Power.

WATFORD. Borough and market town of Hertfordshire. It stands in the valley of the Colne, near Bushey, and has stations on the L.M.S., and is also served by the Bakerloo and Met. Rlys. The Perpendicular church of S. Mary, restored 1870-71, has interesting monuments. Other buildings include the London Orphan Asylum and Salters' almshouses. Park of Cassiobury Park is now the property of the town. Industries established during the 20th century include printing works and factories for foodstuffs. Brewing and milling are older industries. Market days, Tues. and Sat. Pop. 52,000.

WATH-UPON-DEARNE. Urban dist. and market town of Yorkshire (W.R.). It is 6 m. N. of Rotherham on the L.N.E. Rly., and near the Dearne and Dove canal. There are iron and coal mines in the vicinity. Market day, Sat. Pop. 13,830.



Waterspout in the Black Sea. Left, in full stream; right, breaking up

way director. Born in Manchester, Sept. 26, 1819, he became secretary of the Trent Valley Rly. in 1845, and was next employed by the Manchester and Sheffield Co., of which he became chairman. He was also chairman of the South Eastern and Metropolitan rlys. for many years. Watkin converted the Manchester, Sheffield, and Lincoln into a great trunk line, the Great Central. He began a tower at Wembley on the lines of the Eiffel tower, which was later pulled down. Liberal M.P. for Stockport, 1864-68, and for Hythe, 1874-95. Watkin was knighted, 1868, and created a baronet, 1880. He died April 13, 1901.

WATLING OR WATLING'S ISLAND. British island in the Bahamas. It is 47 m. E.S.E. of Cat Island, and is usually regarded as the first landing place of Columbus in 1492. Pop. 686. The name San Salvador is variously applied to Watling and Cat islands.

WATLING STREET. Early English name for a Roman road from Dover to Wroster. It utilised an older British track along the watersheds. Its reconstruction on Roman lines is shown by its 11 straight sections with angular junctions. It ran through Canterbury, London, St. Albans, Dunstable, and Towcester to Wroster. See Britain.

WATSON, SIR WILLIAM (b. 1858) British poet. Born at Burley-in-Wharfedale, Yorkshire, Aug. 2, 1858, he published his first



Sir William Watson.
British poet
Russell

poems, *The Prince's Quest*, 1880, and his *Epigrams of Art, Life, and Nature*, 1884. His dignified Wordsworth's *Grave*, 1890, and *Lacrymae Musarum*, 1892, together with *Lyrical Love*, 1892, and *The Father of the Forest*, 1895, are characteristic of his eloquent and sonorous verse. Other volumes include *Collected Poems*, 1906, *The Muse in Exile*, 1913, *Retrospection*, 1917, and *The Superhuman Antagonists*, 1919, and also *Excursions in Criticism*, 1893, and *Pencraft*, 1917. In 1925 he published *Poems, Brief and New*. He was knighted in 1917, and in 1930 a fund was raised for him.

WATT. Unit of electrical power, named after James Watt. It is the equivalent of a current of one ampère at a pressure of one volt. A larger unit is the kilowatt, equal to 1,000 watts. See Electricity.

A wattmeter is an instrument for measuring the power and rate of doing work electrically. It consists usually of a form of galvanometer.



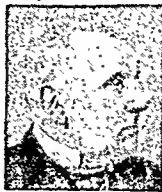
James Watt,
British engineer
After Sir W. Beechey

WATT, JAMES (1736-1819). British engineer. Born at Greenock, Jan. 19, 1736, he was extremely delicate in youth. At eighteen he went to London as assistant to an instrument maker. Ill health compelled a return to Glasgow. In 1764 he repaired the model of the Newcomen steam engine, and turned his attention to the efficiency of such engines. In 1769 he patented the separate condenser. In 1774, in partnership with Matthew Boulton, an experimental engine was completed embodying the essential features of the modern steam engine.

Watt had a prolific mind. To him we owe the contrivance of the centrifugal governor as applied to the steam engine, and the water gauge; his parallel motion is one of the most useful of all. He died Aug. 25, 1819. A memorial fund was started in 1919. See Steam Engine.

WATT, SIR THOMAS (b. 1857). South African statesman. Born at Glasgow, he went to Natal in 1883, where from 1885 he practised as an attorney and advocate. He entered the Natal parliament, and after serving in the S. African War, 1899-1902, was minister of justice and education, 1903-6. He was a delegate from Natal to the South African convention for drafting the act of union, and represented Dundee in the Union parliament. Minister of public works, 1912, he was minister of the interior, 1916-21, and again of public works, 1922. He left office in 1924. He was created K.C.M.G. in 1912.

WATTEAU, JEAN ANTOINE (1684-1721). French painter. Born at Valenciennes, he studied in Paris under Claude Gillot, a decorative painter, and then became assistant keeper of the Luxembourg. He set up for himself under the patronage of Joseph Antoine Crozat (Marquis du Tugny), the collector. In 1717



Sir Edward Watkin,
British rly. director

he was received at the Academy under the style of Painter of Fêtes Galantes, his reception picture being the famous Embarkation for Cythera, now in the Louvre. Always a sufferer from chest weakness, he visited England in 1719 to obtain medical advice, but his malady developed rapidly after his return, and he died at Nogent-sur-Marne, July 18, 1721. The greatest of all painters of Fêtes Galantes, Watteau also immortalised the strolling Italian comedians of his time.

WATTLE (A.S. watel, twig). Term used in architecture to denote one of the earliest materials employed in erecting human dwellings. In its most primitive form it occurs as a leafy wind-screen, as in aboriginal Australia and Tierra del Fuego. In neolithic Europe huts of interlaced osiers were clay-daubed or turfed. Similar structural methods occurred in oldest Crete, Mesopotamia, and Vedic India; they survive in Africa, especially among the Nilotic peoples. Wattle-and-daub survived throughout Roman Britain, as at Silchester, into Anglo-Saxon England.

The name wattle is also applied to various Australian species of acacia (q.v.). Wattle day is the name given to the day (Jan. 26) on which Sydney was founded in 1788. It is kept as an anniversary.

WATTLE BIRD (Anthochaera carunculata). Species of honey eater, found only in Australasia. These birds are notable for their long tongue, which resembles a brush at the tip, and is used for extracting nectar.

WATTS, GEORGE FREDERIC (1817-1904). British painter. Born in London, Feb. 23, 1817, in 1835 he entered the R.A. schools. His portrait of Mrs. Ionides, exhibited in 1840, first drew public notice to his work. From 1844-47 he was in Italy. Becoming one of the best-known portrait painters in England, he enriched the National Portrait Gallery with a series, including Cardinal Manning, John Stuart Mill, Tennyson, Browning, Carlyle, Gladstone, and Rossetti. Notable among his famous symbolic pictures are Time, Death and Judgment, Love and Life, Mammon, Faith, Hope, etc. He also attained considerable eminence as a sculptor.

He died at Compton, July 1, 1904, having received the O.M. in 1902. He was married, first to Ellen Terry, from whom he afterwards separated, and then to Miss Fraser-Tyler, whom he married in 1886, and who survived him. See illus. p. 131; 312; 1157.

WATTS, ISAAC (1674-1748). British hymn writer. Born at Southampton, July 17, 1674, he became a minister. In 1697 he was chosen assistant pastor of an Independent church in Mark Lane, London, becoming sole pastor in 1702. He died Nov. 25, 1748. He lives by his hymns, which figured largely in the older

hymnals. A few remain popular, among them being O God our help in ages past. An edition of his works appeared in 1822.

WATTS-DUNTON, WALTER THEODORE (1832-1914). British critic and poet. Born Oct. 12, 1832, at St. Ives. Hunts, he became a solicitor, but soon abandoned that profession for literary work and made the acquaintance of Rossetti, Morris, Swinburne, and other celebrities. Another intimate friend was Borrow, whose Lavengro and Romany Rye he edited. For nearly thirty years Swinburne shared his home. His contributions to The Athenaeum between 1875 and 1898 established his leading literary critic of the time. His first published book was a volume of poems, The Coming of Love, 1897. In 1898 appeared Aylwin, a long prose romance of Romany life. He died June 6, 1914.

WAUGH, ALEC. Pen-name of Alexander Raban Waugh (b. 1898). British novelist. A son of Arthur Waugh (b. 1866), managing director of Chapman & Hall, Ltd., and the author of several volumes of criticism and biography, he was born July 8, 1898. Educated at Sherborne School, he passed from Sandhurst into the Dorset Regiment. Serving on the Western front, he was taken prisoner by the Germans in 1917. Waugh made his reputation by The Loom of Youth, 1917, a novel revealing school life in a somewhat realistic fashion. His later books include Love in These Days, 1929, Three Score and Ten, and The Coloured Countries, 1930. His brother Evelyn also made a reputation as a writer.

WAUGH, EDWIN (1817-90). Lancashire poet. Born at Rochdale, Jan. 29, 1817, son of a shoemaker, he received little education except what he picked up while employed by a bookseller and printer. His first sketches of Lancashire life attracted the notice of Carlyle. Even greater success awaited his first lyric, Come whom to the childer an' me. This was followed by a long succession of poems and sketches that earned for him the title of the Lancashire Burns. He died April 30, 1890.

WAUTERS, EMILE (b. 1846). Belgian painter. Born in Brussels, he studied art there and in Paris. He made his reputation by his historical paintings. His Cairo and the Banks of the Nile, and Mary of Burgundy before the Magistrates of Ghent, may be mentioned. Wauters has also painted over 200 portraits.

WAVE. Type of vibrational disturbance in an elastic medium. Wave motion may in general be divided into two broad types, one the motion through the medium and the other the motion on the surface of the medium. The latter is familiarised by the waves on water, the former by the propagation of sound.

The conception of a wave, as a means of conveying energy, is at the foundation of the theory of wave motion through the ether. Light, heat, electricity, etc., travel between the sun, the planets, and the distant stars by waves in the ether. Electro-magnetic waves, of whatever wave length, travel at the same rate, e.g. 300,000,000

metres per second. A wireless wave which may have a wave length of half a mile or more will travel at the same velocity as an electric wave which is less than a millionth of an inch in length.

In a wave motion each particle of the medium makes the same movement in a regular sequence. The distance between two particles which are making exactly similar movements at the same moment is called a wave length. The distance between the adjacent crests of two waves is such a wave length. The wave velocity is the velocity of the particles in the direction of the wave motion. The number of times any particle moves up and down in a given time is called the wave frequency, and the extreme distance it moves from its mean position is called the amplitude of the motion. The connexion between wave velocity, wave length and wave frequency is expressed by the equation Wave velocity = wave length \times wave frequency. The period of a wave is the time a particle takes to complete a movement. See Light; Matter: Sound; Wireless.

WAVENEY. River of England. It flows past Diss, Bungay, and Beccles until, 4 m. from Yarmouth, it joins the Yare. In almost all its course of 50 m. it forms the boundary between Norfolk and Suffolk.

WAVERLEY ABBEY. Ruined Cistercian monastery near Farnham, Surrey. Founded by the banks of the Wey by William Giffard, bishop of Winchester, in 1128, it was the first Cistercian house in England.

WAX. Solid fatty substance of animal or vegetable origin, allied to fixed oils and fats. Waxes are distinguished from oils and fats in that they contain no glycerin. In general, waxes are lighter than water, melt at a comparatively low heat, are insoluble in water, and are readily combustible. The chief animal waxes are spermaceti, beeswax, serum wax, and wool wax; and the chief vegetable waxes carnauba, or Brazilian wax, Chinese wax, myrtle wax, and cotton seed wax. Paraffin wax is a product of crude mineral oils.

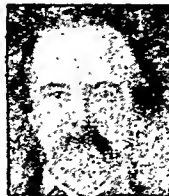
Waxes are used in the manufacture of candles, as insulators in electricity, in the making of furniture polishes, ointments, etc.

WAXBILL. Group of small finch-like birds (Istridinae) occurring in Africa, S. Asia, and Australia. They are related to the weaver birds, and have rather long tails and glossy curved beaks.

WAX FLOWER OR **HONEY PLANT** (Hoya carnosa). Climbing shrub of the order Asclepiadaceae, a native of Australia. The fleshy opposite leaves are oblong-oval. The pinkish, waxy-looking flowers are in umbels, whose common stalk starts from a lateral shoot.

WAX PALM (Ceroxylon andicola). Tree of the order Palmae. A native of Colombia, it grows to a height of about 50 ft., and has a spreading crown of leaves which may be 12 ft. in length. These are cut from the edges to the midrib into segments that are a couple of feet in length and about an inch and a half wide. The trunk is coated with a mixture of resin and wax, and the natives scrape this off after cutting down the tree, each trunk yielding about 25 lb. of the highly inflammable wax.

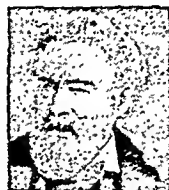
WAX PLANT (Cerinthe major). Annual herb of the natural order Boraginaceae. A native of Central Europe, it has smooth, stem-clasping, heart-shaped, glaucous leaves, with white dots. The tubular flowers are yellow at the base and purple above.



T. Watts-Dunton,
British critic
After H. B. Norris



Wattle Bird, the Australasian
honey eater



Edwin Waugh,
Lancashire poet



G. F. Watts,
British painter
Self-portrait in the
Official Gallery, Florence



Isaac Watts,
British hymn writer



Wax Palm. Crown of leaves
and flower clusters

WAX TREE, AMERICAN GAMBOGE, OR GUTTA-UM TREE (*Vismia guianensis*). Shrub of the order Hypericaceae. A native of tropical America, it has four-sided stems and opposite, oval lance-shaped leaves. The yellow flowers are clustered at the ends of the branches. Its yellow resinous juice yields a substance similar to true gamboge (*Garcinia*) and possessing similar purgative properties.



Wax Tree, a shrub yielding a resia resembling gamboge

WAXWING, SILETAH, OR BOHEMIAN CHAT-TERER (*Ampeelis garrulus*). Fruit-eating bird of the family Ampelidae. It is a native of N. Europe, and at rare intervals a winter visitor in Hocks to Britain. It is vinous brown, relieved by black and white markings. Its distinctive characters are furnished by a handsome crest on the head and by curious red, wax-like appendages to the tips of the secondary wing-feathers and those of the tail. In Britain it affects hedgerows.



Waxwing. Crested bird, occasionally found in Britain
W. S. Berridge, P.Z.S.

WAXWORK. Use of wax for the modelling of figures, medallions, and other objects. The wax used is generally beeswax. The ancient Egyptians fashioned figures of their deities in wax for funeral purposes, while the Greeks and Romans modelled wax figures for a variety of purposes. During the Middle Ages effigies of saints in wax, some beautifully coloured, became common. From the 17th century onwards wax models for anatomical and other scientific work were much used. Wax figures are much used by drapers and costumiers to display dresses, mantles, lingerie, etc.

The first waxworks show, depicting famous and notorious personages, appeared early in the 18th century. The most famous modern waxwork show is Madame Tussaud's, in London. See Effigy; Tussaud.

WAYFARING TREE (*Viburnum lantana*). Small tree or shrub of the order Caprifoliaceae, a native of Europe, N. and W. Asia, and N. Africa. The unripe wood and also the leaves are rough with stellate hairs. The large, opposite leaves are oblong-heart-shaped, with toothed edges. The white funnel-shaped flowers are in large clusters at the ends of the branches. The bark has acrid, blistering properties.



Wayfaring Tree. Leaves and flower clusters

WAYLAND THE SMITH (Old Low Ger *weland*, craftsman). In Teutonic mythology, a wonder-working smith, lord of the elves. The Old Norse *Völundarkvitha* relates the story of his capture of a swan-maiden and his fight with the smith Amilias. Wayland Smith's forge is a cave in the Vale of the White Horse, near Ashbury, Berkshire. His deeds are represented on the Franks casket in the British Museum.

WAXLEAVE. Term used in law for permission granted by an owner of property to enter for some specified purpose, such as to mine coal, at reasonable hours. See Easement.

WAYZGOOSE. Name given to the annual outing and dinner once general in connexion with English printing offices. The word means stubble-goose, or young goose suitable for a feast.

WAZIRISTAN. District of India, in the N.W. Frontier Province. It lies in the mountainous S.W., adjacent to the frontier of Afghanistan, has an area of some 5,000 sq. m., and is peopled mainly by Waziris, a Pathan tribe. The chief valley of the N., drained by the Tochi, is inhabited by industrious Dhaurs. The fighting and troublesome Mahsuds, who can muster a force 10,000 strong, and have given trouble to the British, inhabit the arid district of the S.

WEALD (A.S. a forest tract). District in Kent, Surrey, and Sussex between the N. and S. Downs, extending from the borders of Hampshire to the English Channel. It is about 120 m. long and 30 wide. Formerly covered with forests, of which there are remains in Ashdown and St. Leonards Forests, and known as Andredsweald, it was the chief centre of the iron industry, wood being used for smelting the ore.

The Wealden Deposits are a series of deposits of the Lower Cretaceous, so named from their typical appearance in the Weald. The series consists of the Hastings Sand and the Weald Clay, and is over 2,000 ft. thick.

WEALDSTONE. District of Middlesex, forming with Edgware the urban district of Wealdstone and Edgware. It is 1 m. from Harrow, and has a station on the L.M.S. Rly. The urban dist. of Wealdstone (pop. 13,439) was formed out of the parishes of Harrow and Pinner, and in 1928 was enlarged to include the parishes of Edgware, Harrow Weald, and Great and Little Stanmore.

WEALTH (O.H.G. *welitha*). Term employed to denote riches or material possessions, which may be the property of individuals, groups, associations, corporations, of small and large communities, of states, and ultimately of nations.

Various estimates of the national wealth of Great Britain have been made from time to time. In 1914 the country's capital was estimated at about £14,500,000,000. In 1930 Sir Josiah Stamp put forward a revised estimate, which is as follows:

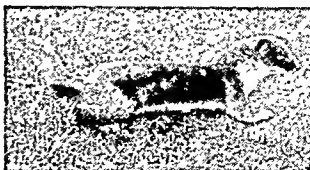
Real property—Buildings ..	£ 4,500,000,000
Real property—Land ..	950,000,000
Farmers' capital ..	450,000,000
Business profits and interest ..	16,645,000,000
Furniture and movable property ..	1,500,000,000
Government and local property ..	900,000,000
	<hr/>
	24,945,000,000
Less belonging to people abroad ..	500,000,000
	<hr/>
Gross wealth ..	24,445,000,000
Deduct debt ..	6,400,000,000
	<hr/>
	£18,045,000,000

This gives an average of about £450 for each person, or £600 if the debt is included as capital.

In 1914 the national income was estimated at £2,250,000,000, or about £55 a head. Today it is probably in the neighbourhood of £4,000 millions, or £100 a head. In 1927 the incomes of those liable to the payment of income tax totalled £2,337,000,000. See Income Tax; National Debt.

WEAR. River of England, in the co. of Durham. It rises near the Cumberland border, and flows about 65 m. by a S. curve to the North Sea at Sunderland. Its basin of 456 sq. m. contains the S. portion of the Durham coalfield. Important places on its banks include Durham, Bishop Auckland, and Chester-le-Street. See Durham; Sunderland.

WEASEL (*Mustela nivalis*). Small carnivorous mammal. It is found throughout Europe, N. and Central Asia, and in parts of N. America, being common in England and Wales and S. Scotland, but is absent from Ireland. About 9 ins. long, it has bright reddish-brown fur on the upper parts, with white beneath. In cold regions it turns white in winter, but this seldom occurs in Great Britain. It makes its home in holes in banks. Predacious in habit, it kills large numbers of rats, mice, voles, rabbits, game birds, poultry, etc. The weasel hunts its prey by scent. See *Illus.* p. 661; 1092.



Weasel. Small predacious mammal, common to most countries of the Northern hemisphere

WEATHER. Current condition of temperature, wind, clouds, rain, etc. The average result of weather changes is termed climate.

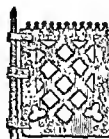
A weather forecast is a considered prediction about the nature of the weather in the near future. The meteorologist receives at headquarters daily reports from carefully selected stations, whose weather conditions are likely to aid him in his task. These give him the local temperature; pressure, winds, rainfall, state of the atmosphere, etc., and having entered these on a map, he is able to draw the isotherms, isobars, and show by signs the direction and strength of the wind, etc.

Weather forecasts, besides being of great value to the general public, are used for many technical purposes. See Climate; Meteorology.

WEATHERBOARD. Board used to form the outsides of wooden buildings. The boards are overlapped to avoid the open joints which would sooner or later result from shrinkage of the wood if the boards were merely "buted," i.e. set edge to edge. To give the boards a better slope and set, they are planed to a feather-edge, the top inner edge being reduced to about half the thickness of the bottom edge. In laying the boards the thick lower edge of the upper board is lapped about an inch or an inch and a half over the thin edge of the board below it, the boards being nailed together where they overlap.

WEATHERCOCK. Vane for showing which way the wind blows. It is a thin vertical plate of metal or wood, pivoted on a vertical rod, and is generally gilded and made in some decorative or fanciful form, especially that of a cock, the emblem of vigilance. Weathercocks are placed on a staff, or above a spire, steeple, or roof.

WEATHERLY, **FREDERICK EDWARD** (1848-1929). British song writer. Born at Portishead, Somerset, Oct. 4, 1848, he was called to the bar in 1887. He became known as a writer of numerous popular songs and ballads, among them *Nancy Lee*, *The Deathless Army*, *Up from Somerset*, *Roses of Picardy*, etc. He also wrote *Muriel and Other Poems*, 1870; *The Rudiments of Logic*, 1879; many children's books; English versions of *Cavalleria Rusticana*, 1892, and *Pagliacci*, 1893; and some reminiscences as *Piano and Gown* (1926). Weatherly died Sept. 7, 1929.



Weathercock. Above, vane at Eitchingham, the oldest in England. Below, ship vane on Rochester Town Hall

WEAVER. River of Cheshire. It rises in the S.W. of the county, and flows mainly N. past Nantwich and Northwich into the Mersey near Frodsham. Below Northwich, for the lowest 20 m. of its course,

the embanked river becomes the Weaver Navigation, used by steamers and barges connected with the trade in chemicals and salt. It is connected with the Trent and Mersey canal, vessels being raised by a lift. Its length is about 50 m. See Lift.

WEAVER BIRD.

Popular name applied to several genera of small birds whose nests are covered by grass-woven bags. Of bottle or flask shape, the nest is entered at the bottom or low down at the side. The Baya sparrow or weaver bird (*Ploceus baya*), of India and Ceylon, attaches its hour-glass or retort-shaped nest to the fronds of palms, weighting them with clay to prevent inordinate swaying. The social weaver birds (*Philetaerus socius*) of S. Africa combine to load an acacia tree with bushman grass, weaving some of it into a roof. In hollows of the interior dozens of pairs of the birds construct their nests.



Weaver Bird. Left, Jackson's Whydah Bird, one of the weavers. Right, typical bag, woven of long grasses, to protect the nest



Weaver Bird. Left, Jackson's Whydah Bird, one of the weavers. Right, typical bag, woven of long grasses, to protect the nest

WEAVING. Conversion of threads into fabrics. The device or machine used is the loom (q.v.). The power loom is substantially the hand loom adapted to rotary driving. The weaver, freed from supplying power, has only to supply weft to the shuttle and watch for breakages of thread and for defects, and may be able to supervise several looms, according to their kind and to the class of work in progress.

Looms for fancy weaving have parts additional to those of the plain loom. Stripes of colour are arranged for in warping, but the crossing stripes to form cheeks have to be formed in weaving. Small geometrical figures can be woven with the dobby, a modification of the Jacquard. This machine provides a means of lifting individual warp threads without reference to their neighbours, and is an addendum to the ordinary loom. Perforated cards and the needles of a cylinder select the required thread or group of threads, which are then lifted by the agency of hooks.

For purposes of weaving, designs are made upon point or squared paper, each square representing the position of one thread, and dots are made in the appropriate squares indicating that at this place the warp must come uppermost. A complete unit of the design (the "repeat") is then plotted upon paper to show the position of the threads. Its diagonal or other character can be seen, and the loom can be set to follow the round of movements indicated. See Lace; Loom.

WEBB, SIR ASTON (1849-1930). British architect. Born May 22, 1849, the son of Edward Webb, a painter, he became an architect. He designed the Victoria and Albert Museum, the College of Science and Technology, S. Kensington, the Admiralty Arch, and the new front of Buckingham Palace. In ecclesiastical design his best achievement was the restoration of S. Bartholomew the Great. Elected A.R.A. in 1899, he was chosen R.A. in 1903. From 1919 to 1924 he was president of the R.A., and he was also president of the architectural association. In 1904 Webb was knighted, and he died Aug. 1, 1930. See Admiralty; Victoria.

WEBB, MARY (d. 1927). British novelist. The daughter of G. E. Meredith, a schoolmaster, she was born in a village in Shropshire. Her first writings were poems, but soon she had published several novels. In

1924 her *Precious Bane* won praise, but a wider fame only came after her death in Oct., 1927. Mr. Baldwin, the premier, then drew attention to the excellence of her work, and a collected edition appeared in 1928. In 1912 she married H. B. L. Webb, a schoolmaster.

WEBB, MATTHEW (1848-83). English swimmer popularly known as Captain Webb.

He was born at Dawley, Shropshire, Jan. 18, 1848, and when a boy saved his brother from drowning in the Severn. He served in the mercantile marine and was awarded the first Stanhope gold medal by the Royal Humane Society in 1874. On Aug. 24-25, 1875, he swam across the English Channel from Dover to Calais in 21½ hours. He lost his life in an attempt to swim the whirlpool and rapids below the Niagara Falls, July 24, 1883.

WEBB, SIDNEY JAMES. Name of the British sociologist created Baron Passfield (q.v.). His wife, Beatrice Potter (b. 1858), continued to be known as Mrs. Sidney Webb.

WEBER, CARL MARIA FRIEDRICH ERNST VON (1786-1826). German composer. He was born at Eutin, Oldenburg, Dec. 18, 1786, his father, Franz Anton, being an able musician; his mother had been a Viennese singer. On her death in 1798 the family moved to Vienna, where his *Six Fughettas* were published. In 1803 he studied under G. J. Vogler (q.v.) and became director of the Breslau Opera. He left there in 1806 for a court appointment in Stuttgart, but became involved in trouble which necessitated his removal to Darmstadt, where he wrote his opera, *Abu Hassan*. From 1813-16 Weber was director of the Opera at Prague, and wrote much excellent piano music. His masterpiece, *Der Freischütz*, was produced in Berlin, June 18, 1821. He died in London, June 5, 1826.

WEBSTER, DANIEL (1782-1852). American statesman. Born in New Hampshire, Jan. 18, 1782, he was called to the bar in 1803. He was member of Congress, 1813-17 and 1823-27, and senator 1827-41 and 1845-50. In 1816 he set up practice as a lawyer in Boston. Refusing the vice-presidency, he accepted the secretaryship of state, which he held 1841-43 and 1850-52. Although opposed to the war with Mexico and the extension of slavery, he regarded the latter as preferable to endangering the Union. He died Oct. 24, 1852. It is on his oratory that Webster's reputation chiefly rests.

WEBSTER, JOHN (c. 1580-1625) English dramatist. The son of a London tailor, he became a freeman of the Merchant Taylors' Company. He wrote for Philip Henslowe, and collaborated with Drayton, Munday, Middleton, Dekker, Heywood, and others. His independent work includes a romantic comedy, *The Devil's Law Case*, and three tragedies, *Appius and Virginia*, *The White Devil*, and *The Duchess of Malfi*.

WEBSTER, NOAH (1758-1843). American lexicographer. Born at Hartford, Conn., Oct. 16, 1758, he was educated at Harvard. He became a teacher, but also found time to study law and write books. The success of a spelling book written by him led him to project a dictionary, the first edition of which appeared in 1828. He died May 2, 1843.

WEBSTER, TOM (b. 1888). British cartoonist. He was born and educated at Wolverhampton. His first work appeared in *The Birmingham Weekly Post*, which offered a weekly prize for a humorous drawing. After four years as sporting cartoonist on a provincial paper, Webster moved to London and joined *The Daily Citizen* as political cartoonist. During the Great War he served in the Royal Fusiliers, was wounded on the Somme, and in 1917 was invalided. In Nov., 1918, *The Evening News* accepted one of his drawings, and in 1919 Webster signed a contract with *The Daily Mail*, in which most of his later drawings appeared. See Caricature.

WEDDELL SEA. Bay of Antarctica, between W. Antarctica and Coats Land. Bruce, Morrell, Filchner, Weddell, and Shackleton have contributed to the knowledge of its coasts and waters. In 1915 the *Endurance* was crushed and sunk in it.

WEDDING. Ceremony of marriage. It is usually an occasion of feasting and rejoicing, and in most countries includes a religious rite. Each country has its own wedding customs. In Britain these include, apart from the actual religious or civil ceremony, the cutting of the wedding cake and the distribution of pieces among friends. The 25th anniversary of a wedding is a silver wedding; the 50th a golden wedding; and the 60th a diamond one.

WEDDING RITES. These often embody survivals of primitive custom. There may be meal communion, mutual feeding with rice, mutual drinking of clam broth or saki, breast-sprinkling with bullock blood, head-sprinkling with coconut milk, hand-sprinkling with water, and forehead-marking with blood, or symbolically with vermilion. The bridegroom may wear a hat woven from ancestral hair, as in Korea. The rite may be preceded by an exhibition of prowess.

The bride may wash the bridegroom's feet, or be carried across the bridegroom's threshold, or carry fire to her husband's hut, or have her ears boxed by the bridegroom. The bridal pair may walk round the family altar, the custom in ancient Rome, or round the house pillar; the bride may pass thrice round the hearth. See Marriage.

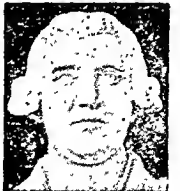
WEDGWOOD, JOSIAH (1730-95). British potter. Born at Burslem, July 12, 1730, he was apprenticed to his brother Thomas, and as partner of Thomas Whieldon of Fenton produced the melon and cabbage patterns of earthenware. He became a master potter at Burslem, 1759, and opened the Etruria works in 1769. He raised ornamental pottery to the status of a fine art and introduced many technical improvements. He died Jan. 3, 1795. See Burslem.

WEDGWOOD WARE. At Burslem, Wedgwood made green glaze and cream-coloured ware with fine and light body and brilliant glaze, known as Queen's ware, and still produced. At Etruria, he imitated Greek and Etruscan vases, employing Flaxman and other artists to design the figures. He made black basalt as well as cream ware, and invented the beautiful jasper ware, by which he is best known. Other kinds were pierced cream-coloured basket ware, fine red pottery, and silvery lustre ware. Lavender ware was made in 1850, and later decorated with white slip. Golden and red copper lustres have been employed. See Etruria; Majolica; Pottery; Toby Jug.

WEDGWOOD, JOSIAH CLEMENT (b. 1872). British politician. Born March 16, 1872, he was a member of the Staffordshire family.



Daniel Webster, American orator



Josiah Wedgwood, British potter. From a bust by J. Flaxman

He was assistant-constructor in Portsmouth dockyard 1895-96, and architect in Elswick shipyard, 1896-1900. He served in the S. African War, and was a resident magistrate in the Transvaal, 1902-4. He entered Parliament as Liberal M.P. for Newcastle-under-Lyme in 1906. On the outbreak of the Great War he was appointed a sub-lieut. in the R.N.D. In 1919 he joined the Labour Party, and was chancellor of the duely in 1924. In 1927 he wrote *The Seventh Dominion*.

WEDMORE. Village of Somerset. It is 8 m. from Wells, and gives its name to a treaty made between Alfred the Great and the Danes in 878. Pop. 2,385.

WEDNESBURY. Borough and market town of Staffordshire. It is 8 m. N.E. of Birmingham, on the G.W. and L.M.S. Rlys. According to tradition the Perpendicular church of S. Bartholomew occupies the site of a temple of Woden (Odin), from whom the town is supposed to take its name. Manufactures include rails, boiler plates, steel, iron, and steelwork for rlys., tools, and wrought iron. There are potteries and coal mines. Market days, Fri and Sat. Pop. 30,390.

WEDNESFIELD. Urban dist. of Staffordshire. It is the site of a battle fought in 910, when Edward the Elder drove back the Danish invaders. It is a centre of the lock and key industry and has a station on the L.M.S. Rly. Pop. 7,446.

WEED. Name given by the farmer or gardener to a plant which interferes with cultivated crops. They are plants out of place. The losses caused to agriculture by weeds are very heavy. Yellow mustard, charlock, and runc may eat wheat crops by 30 to 50 p.e. Garlic-mustard and chamomile affect stock giving milk and butter an unpleasant taste. Meadow saffron is poisonous, and kills outright animals that browse upon it.

WEEDON. Village of Northamptonshire. It is 8 m. W. of Northampton on the L.M.S. Rly. Here are the Army Equitation School and the Royal Army Ordnance Corps small arms establishment. Pop. 2,020.

WEEK. Period of seven days, a subdivision of the month. Probably based on the four phases of the moon, each of which approximates seven days, the week has not always been universal; five, six and eight day weeks exist in Africa. See Sunday.

WEENEN. Village of Natal, 29 m. by rail from Estcourt. In the vicinity many Boers and their families were massacred by the Zulus under Dingaan, hence the name, which means weeping. The village was settled in 1839.

Weetslade. Urban dist. of Northumberland. It is in a mining area, 5 m. from Newcastle. Pop. 7,500.

WEEVER (Trachinus). Genus of marine fish, of which two species occur around the British coasts. The greater weever (*T. traco*) is about a foot long, while the lesser weever (*T. vipera*) is just half as large. They are popularly known as Sting Bulls, from the numerous spines on the back, which are capable of inflicting a poisoned wound.

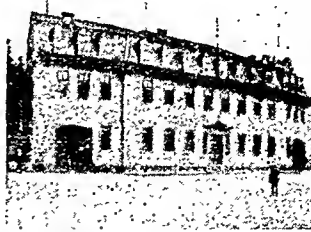
WEEVIL. Large family of small beetles (Rhynchophora), of which many species occur in Great Britain. The head is prolonged to form a snout or beak with the mouth at the extremity. They are vegetable feeders, and many of them in their larval stage are serious pests to the farmer and gardener. Examples are the corn weevil (*Calandra granaria*), the rice weevil (*C. oryzae*), the apple-blossom weevil (*Anthonomus pomorum*), and the cabbage-gall weevil (*Ceuthorrhynchus rapae*), and their popular names indicate the plants they attack. The Mexican boll weevil is highly destructive in the cotton belt of the U.S.A. See Beetle.

WEIGHTS AND MEASURES. Standards of magnitude, weight, and value. Early weights and measures were based upon natural measures of length, e.g. the cubit, the length from the elbow to the tip of the longest finger, and varied within very wide limits. In the 12th century in England a grain of wheat or barley was taken as a standard of weight.

All the weights and measures which have become slowly standardised through centuries suffer from having subdivisions or multiples which do not lend themselves to easy calculation, e.g. 12 ins. to a foot, 112 lb. in a hundredweight, etc. The introduction of the metric system (q.v.) has simplified calculations and connected linear, square, and cubic measures in a logical way.

In Great Britain the legal unit of length is the yard; of weight, the pound; and of volume, the gallon. From these all other divisions and multiples in use, e.g. the inch, ounce, pint, etc., are derived. Avoirdupois (q.v.) weight is used for ordinary commodities; troy weight for precious metals, and apothecaries' weight and liquid measure for drugs. The oz. and lb. of apothecaries' weight are

Saxe-Weimar-Eisenach. On the Ilm, 13 m. from Erfurt, it is a rly. junction and a centre of the publishing trade. It owes its fame to its connexion with Goethe, Schiller, Herder, and other great Germans. The church of SS. Peter and Paul contains the tombs of the ducal family and a fine altarpiece by Lucas Cranach. Goethe's house is now a museum dedicated to the poet. The Goethe-Schiller Archives building was opened in 1896. The town has a park laid out by Goethe and some picturesque old houses. Pop. 46,028.



Weimar. Goethe's house, now a Museum dedicated to the poet

WEISSMANN, AUGUST (1834-1914). German scientist. Born at Frankfurt-on-Main, Jan. 17, 1834, he became a doctor at Frankfurt, but abandoned practice for the study of zoology, and in 1871 was made professor of zoology at Freiburg. He remained there until 1912, and died in Berlin, Nov. 6, 1914. Weissmann accepted Darwin's teachings at once, and on them built up the theory that heredity is a question of the continuity of the germ-plasm, that external changes in the life of an individual cannot be transmitted to descendants. See Darwin, C.; Heredity.

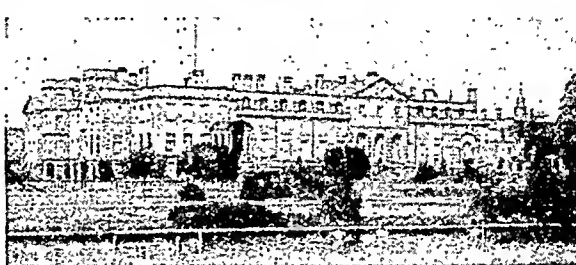
WEISSBURG or **WISSEMBOURG.** Town of Lower Alsace (Bas-Rhin), France. It stands on the Lauter, 42 m. from Strasbourg. There is a beautiful 13th century church, once belonging to a Benedictine abbey founded in the 7th century. Weissenburg, which became a free city in 1305, is chiefly famous for its battles. Here, in Oct., 1793, the Prussians stormed the Weissenburg lines, defended by the French. On Aug. 4, 1870, the Germans, under the crown prince, gained their first victory in the war against France. Pop. 5,000.

WEISSHORN. Peak of the Pennine Alps, Switzerland. It rises to 14,804 ft., 5 m. N.W. of Zermatt. Other Alpine peaks of the same name are the Arosar W. (8,710 ft.), the W. (10,130) N. of the Flüela Pass, both in Grisons, and the W. (9,875 ft.) in the Bernese Alps S. of Lenk. See Alps, map.

WELBECK ABBEY. Seat of the duke of Portland, in Nottinghamshire. It is 4 m. S.W. of Worksop, and includes 25 acres of fruit and flower gardens and a park, once part of Sherwood Forest, about 10 m. in circumference. Built on the site of an abbey, founded in 1154, the house dates for the most part from the 17th century, but the Oxford wing was rebuilt after a fire in 1900. The underground rooms and tunnels, in all about 1½ m. long, were constructed in the time of the 5th duke of Portland, into whose family the estate passed in 1734. See Dukeries; Portland, Duke of.

WELCH, JAMES (1865-1917). British actor. Born at Liverpool, Nov. 6, 1865, he made his first appearance on the London stage in 1887. His success was established in a few years, and he was in the original cast of several of G. B. Shaw's plays. Welch developed as a comedian and made his greatest hit as Sir Guy de Vere in *When Knights Were Bold*, which he brought to London from Nottingham in 1906. With this play he toured the country, acting in it continuously until 1911 and frequently reviving it. He died April 11, 1917.

WELCH FUSILIERS, ROYAL. Regiment of the British army. It was raised in Wales in 1689, its number on the roll being the 23rd. The Fusiliers began their career of foreign



Welbeck Abbey, Nottinghamshire. Country seat of the Duke of Portland, built on the site of an ancient abbey
—By courtesy of Country Life, Ltd.

now obsolete, however, and are replaced by the avoirdupois oz. and lb. For jewels the carat is used, with varying local values. Length is measured by long measure, area by square measure, and capacity by cubic measure. Grain, etc., are measured by dry measure, and there are special measures for beer and wine. British weights and measures are governed under various Acts. The Weights and Measures Act, 1878, bases all legal measures on the standard yard and pound, the gallon being based in turn on the latter. Under the Act the divisions of the inch by the Birmingham gauge became standard after Nov. 1, 1914.

WEIHAIWEI. Port and territory in Shantung province, China. Leased to Great Britain by China in 1898, it comprised, besides the port and bay, the island of Liukung, all the islands in the bay, together with a belt of land 10 m. wide along the coastline of the bay. The total area was about 285 sq. m. In addition to the leased territory there was a sphere of influence of 1,500 sq. m. The bay was used as a naval base, depot, exercising ground and sanatorium for the China squadron. At the Washington Conference (q.v.) Great Britain offered to restore the territory, and Weihaiwei was eventually handed back to China in 1930. Pop. about 170,000.

WEIMAR. Town of Germany, since 1919 capital of the republic of Thuringia. Before then it was the capital of the grand duchy of



Weever. The larger species of the British fish, *Trachinus draco*

service in Flanders under William of Orange and Marlborough. They fought at Dettingen, Fontenoy, and Minden. After serving all through the war in America, they were compelled to surrender at Yorktown in 1782. After serving in the Crimea the Fusiliers went to India and fought at Lucknow, and later in the Ashanti, Burmese, and S. African wars. Apart from its regular battalions, the regiment had six territorial and twelve service battalions in the Great War. The name Welsh in its title was amended to read Welch in March, 1920. The regimental depot



Welch Fusiliers badge is at Wrexham. See Flash.

WELCH REGIMENT. Regiment of the British army. The first battalion of this, known as the "regiment of invalids" since 1719, became the 41st Foot in 1787. The second battalion became the 69th Foot in 1760, and in 1881 the two were united as the Welsh Regiment, a title borne by the 41st since 1831. One battalion was present at Waterloo, and took part in the Maratha war in 1817; the other saw active service in Burma, Afghanistan, and elsewhere, 1820-50. The Welsh were in the Crimea. The regiment had over twelve service and five territorial battalions, in addition to its regular battalions, in the Great War. In March, 1920, the spelling Welsh was amended to read Welch. The regimental depot is at Cardiff.



Welch Regiment badge

WELD, DYER'S WEED, OR DYER'S ROCKET (*Reseda luteola*). Annual or biennial herb of the order Resedaceae, a native of Europe, W. Asia, and N. Africa. It has an erect, smooth, branched stem, two or three feet in height, with slender lance-shaped leaves, and ends in a long, spike-like spray of yellow-green flowers. The fruit is a capsule, open before the black seeds are ripe. It was formerly used by dyers to obtain a yellow dye, which is the source of the artists' colour known as Dutch Pink.

WELDING. Property of uniting possessed by certain metals, when pressure is applied during the transition from the solid to the molten state. In ordinary practice the surfaces to be welded are cleaned and, by means of a smith's forge, an electric arc or oxy-acetylene flame, the metal is brought to a white heat, and then hammered to make a homogeneous joint. Fluxes are sprinkled on the joint.

WELL. Artificial boring made in order to obtain water from the earth. This method of getting water is a very ancient one, and there are many references to wells in the Bible and in other early literature. The waters of many wells were believed to possess miraculous properties; hence the many holy wells in various countries. Other wells were wishing wells, while others were believed to possess powers of other kinds. See Artesian Well; Irrigation; also illus. p. 134.

WELLAND. River of England. It rises in Northamptonshire and flows mainly N.E., forming the boundary between that county and Leicestershire and then Rutland. Near Crowland it enters Lincolnshire, and flows to the Wash. It is about 70 m. long.

WELLAND. Town of Ontario, Canada. It is on the Welland river and Welland Canal, 22 m. from Buffalo, and has stations on the C.P.R. and C.N. Rlys. Its industries are chiefly connected with the canal. Pop. 8,654.

WELLAND CANAL. Canadian waterway connecting lakes Erie and Ontario. It is named from the Welland river, and runs from

Port Dalhousie on Lake Ontario to Port Colborne on Lake Erie. It is 26½ m long, and before the alterations had 26 locks. After extensive alterations and improvements, to enable it to carry larger vessels, it was reopened in 1930.

WELLDON, JAMES EDWARD COWELL (b. 1851). British schoolmaster and divine. Born at Tonbridge, Kent, the son of a schoolmaster, he was educated at Eton and King's College, Cambridge. Having graduated as senior classic, he was fellow and tutor of King's before being appointed, in 1883, headmaster of Dulwich College. From 1885-98 he was headmaster of Harrow, and from 1898-1902 bishop of Calcutta. In 1902 Welldon was chosen canon of Westminster, in 1906 dean of Manchester, and in 1918 dean of Durham.

WELLESLEY, RICHARD COLLEY WELLESLEY or **WESLEY, MARQUESS** (1760-1842). British administrator. Born at Dangan Castle, co. Meath, June 20, 1760, he was a son of the earl of Mornington and elder brother of the duke of Wellington. He succeeded to his father's Irish title in 1781, and in 1784 was elected an English M.P. In 1797, having held minor offices under Pitt, he went out to India as governor-general, and there he remained until 1805. As a Tory politician and a marquess, created in 1799, Wellesley was foreign secretary 1809-12, and lord-lieutenant of Ireland 1821-28. He died without sons, Sept. 26, 1842.

Wellesley Province. Mainland portion of the British possession of Penang (q.v.).

WELLINGBOROUGH. Market town and urban dist. of Northamptonshire. It stands near the Nene, 10 m. from Northampton, on the L.M.S. Rly. The principal churches are All Hallows, Perpendicular, and S. Mary's, modern. The town is an important rly. centre in an agricultural area. The chief industries are the manufacture of boots and shoes and clothing. The school, dating from 1595, has accommodation for 350 boys. Market day, Wed. Pop. 20,365.

WELLINGTON. Market town and urban dist. of Shropshire. It is 10 m. from Shrewsbury, on the L.M.S. and G.W. Rlys. It is also on a canal leading to the Severn. The industries include the making of agricultural implements and malting. Market day, Thursday. Pop. 8,148.

WELLINGTON. Market town and urban dist. of Somerset. It stands near the river Tone, 7 m. S.W. of Taunton, on the G.W. Rly. S. John's church is a fine Perpendicular building. Woollens and bricks are made. On the Blackdowns there is a monument to the duke of Wellington. Market days, Tues. and Thurs. Pop. 7,221.

WELLINGTON. Town of New South Wales, Australia. A gold mining centre at the junction of the Bell and Macquarie rivers, it is 255 m. by rly. from Sydney. The surrounding area is a progressive farming and pastoral dist. Near are fine limestone caves. Pop. 4,400.

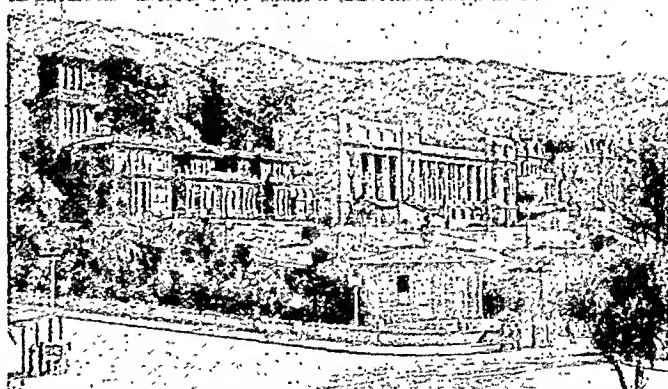


Marquess Wellesley, British administrator After Sir T. Lawrence

WELLINGTON. Capital of New Zealand, in N. Island. It stands on Cook Strait on the W. shore of Port Nicholson, being built on hills, on the slopes of which the houses rise in terraces. Government House, the Houses of Parliament, and other public buildings are notable. Victoria College is a constituent college of the university of New Zealand. The parks include Robertson and Keith Izard, and the municipality owns Williams Bay, a seaside resort near In 1931 a war memorial in the form of a carillon was erected here; it had been temporarily set up in Hyde Park, London. Freezing works, soap and candle factories, rope works, and woolen mills are some of the industrial establishments. Pop. 133,770.

WELLINGTON, DUKE OF Title borne by the Wellesley family since 1814. Arthur Wellesley was created duke of Wellington in 1814. On his death, in 1852, he was followed by his son Arthur, who, in 1863, succeeded to the earldom of Mornington. He died without issue, in 1884, and was succeeded in turn by his nephew Henry (d. 1900), and Arthur Charles (b. 1849), 4th duke. The eldest son bears the courtesy title of marquess of Douro. His seat is Strathfieldsaye, in Hampshire.

WELLINGTON, ARTHUR WELLESLEY, 1st DUKE OF (1769-1852). British soldier and politician. A younger son of the 1st earl of Mornington, an Irish peer, he was born, probably in Dublin, April 29 or May 1, 1769. Educated at Eton, Arthur went afterwards to a military school at Angers. In 1794 he saw active service in the Netherlands and in 1796 went to India, where his elder brother soon became governor-general. He was made commander-in-chief in Mysore, and in 1803 conducted with marked success a campaign against the Marathas, his greatest exploit being the victory at Assaye. From 1805, when he left India, to 1808 he was fighting in Hanover and Denmark, while he was also M.P. for Rye and secretary for Ireland. In 1808 he went to Portugal in command of a division. He won

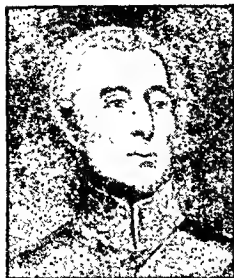


Wellington, New Zealand. Colonnaded facade of the new Houses of Parliament on the hill slopes above the capital. The old building is seen on the left Courtesy of the New Zealand Government

the battle of Vimero, but was ordered back to England. In 1809 he returned to Portugal, this time in chief command, and until 1814 he conducted, with conspicuous success, the campaign against France. In 1814 Wellington was sent to Paris as ambassador, and he was at the congress of Vienna when the news of Napoleon's escape from Elba arrived. At once he took command of the British army and its allies, and won the battle of Waterloo. From 1815 to 1818 he was in France in command of the international army of occupation. During this time Wellington's popularity in France waned, and attempts were even made to assassinate him.

In 1818 the duke started his career as a Tory politician, as master-general of the ordnance under Lord Liverpool. In Jan., 1828.

he became prime minister. He was responsible for the emancipation of the Roman Catholics, but he would not assent to the proposed extension of the franchise, and in Nov., 1830, he resigned. In 1834-35 he was foreign secretary under Peel, and from 1841-46 he was in the Cabinet, minister without portfolio. He died at Walmer Castle, Sept. 14, 1852. He was buried in St. Paul's Cathedral.



1st Duke of Wellington, British soldier and politician
After J. Jackson, National Portrait Gallery

WELLINGTON COLLEGE. English public school. It was founded as a memorial to the duke of Wellington, public subscriptions being obtained to establish a school for the education of the sons of officers. A site was secured near Wokingham, and the buildings were opened in 1853. It consists of a college proper and four houses, altogether holding about 600 boys, ninety sons of officers being received on the foundation at reduced fees.

WELLS. City of Somerset. It lies encircled by the Mendips, 20 m. from Bristol, on the G.W. Rly. The magnificent cathedral dates mainly from the 12th and 13th centuries. The west front is adorned with some 350 sculptured figures, and there is some beautiful stained glass. Close by is the bishop's palace, surrounded by a moat. St. Cuthbert's church has a fine Perpendicular tower. Wells has a theological college for the Anglican ministry. The city owes its origin and name to some springs dedicated to St. Andrew. It was made the seat of a bishop about 900, and in 1139 the see was given the name of Bath and Wells. Pop. 4,372.

WELLS, HERBERT GEORGE (b. 1866). British novelist. He was born Sept. 21, 1866, at Bromley, Kent, son of Joseph Wells, a Kentish bricklayer. As a boy he was employed in the drapery trade at Windsor and Southsea and at the age of sixteen secured a mastership at Midhurst Grammar School. In 1888 he graduated in zoology at London University.

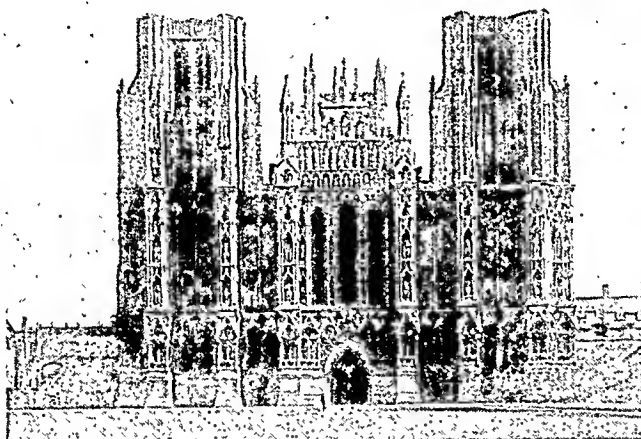
Wells revealed first a prophetic insight into the possible developments of scientific progress, as in *The Time Machine*, 1895, *The Invisible Man*, 1897, and *The War of the Worlds*, 1898. In *Love and Mr. Lewisbam*, 1900, *Kipps*, 1905, and *Mr. Polly*, 1910, he displayed equal genius in realistic analysis of the soul of the lower middle class. Later, he turned prophet and philosopher in *Tono-Bungay*, 1909, *Ann Veronica*, 1909,

Marriage, 1912, and *Secret Places of the Heart*, 1922, and likewise theologian in *The New Machiavelli*, 1911, *God the Invisible King*, 1917, and *The Undying Fire*, 1919. Socialism was one of his interests, and this was reflected in *Anticipations*, 1901, *Mankind in the Making*, 1903, *A Modern Utopia*, 1905, and *New Worlds for Old*, 1908. He produced a subtle record of war impressions at home in *Mr. Britling Sees it Through*, 1916, followed by *The Soul of a Bishop*, 1917, and *Joan and Peter*, 1918. In 1919-20 he published, in parts, his *Outline of History*. His later works include *Men Like Gods*, 1923, *Christina Alberta's Father*, 1925, *The World of William Clissold*, 1927, *Mr. Bletts' worthy on Rampole Island*, 1928, and *The Autocracy of Mr. Parham*, 1930.

WELLS, WILLIAM (b. 1889). British boxer, known as Bombardier Wells. Born in London Aug. 31, 1889, he enlisted in the army and went to India, where he won the All India championship. He won the heavyweight championship of England by defeating Iron Hague in six rounds at the National Sporting Club, London, April 24, 1911, but was twice knocked out by the French boxer, Georges Carpentier (q.v.), at Ghent and at the National Sporting Club in the same year. On



Bombardier Wells, British boxer



Wells, Somerset. West front of the cathedral, one of the best examples of Early English ecclesiastical architecture. It is ornamented with over 300 statues
Frith

Feb. 27, 1919, he lost the English heavyweight championship to Joseph Beckett.

WELSH, FREDERICK (1886-1927). British boxer. Born at Pontypridd, Wales, March 5, 1886, he won the English lightweight championship in 1909 by defeating Johnny Summers. Beaten by Matt Wells in 1911, he regained the title from him the following year. He beat Hughie Mehegan for the championship of the British Empire at the National Sporting Club, London, Dec. 16, 1912; and won the lightweight championship of the world by defeating Willie Ritebie at Olympia, London, July 7, 1914. He lost it to Benny Leonard, U.S.A., in 1917. He died July 28, 1927.

WELSH GUARDS. Regiment of the British army. It was raised during the Great War, in Feb., 1915. With a nucleus from the Grenadier Guards, a battalion was quickly formed, and in the following Sept. it fought at Loos, entered



Welsh Guards badge

the ruins of that town, and later held the Hohenzollern redoubt. In the winter of 1915-16 it was stationed in the Ypres sector, and fought in the battle of the Somme, 1916. In 1918 it took part in the critical battles of March-April, and in the final Allied victories in the autumn.

WELSH HARP. Harp having three rows of strings. The two exterior rows were tuned in unison diatonically, and there was an inner row to supply the extra sounds necessary to complete the chromatic scale. It was unique in that the strings were on the right hand of the comb, for which reason it was held on the left shoulder, the left hand playing the treble and the right hand playing the bass strings.

WELSH HARP. Name of two inns, The Old Welsh Harp and The New (or Upper) Welsh Harp. Places of popular resort, they are in the Edgware Road, in a fork of the Brent Reservoir, now known as the Welsh Harp, W. of Golder's Green and Hendon.

WELSHPOOL. Borough and market town of Montgomeryshire, Wales. It is 15 m. S. of Oswestry, on the Severn and Montgomery canal, and has a station on the G.W. Rly. The Gothic church of St. Mary was restored in 1871. Other buildings include the town hall and the Powysland Museum of antiquities. There is trade in agricultural produce, also some tanning. Market day, Mon. Pop. 5,682. See Powis.

WELSH POPPY (*Meconopsis cambrica*). Perennial herb of the order Papaveraceae. A native of W. Europe, it has a stout root-stock, branching to form a tuft. The long, pale-green leaves are cut in from the sides into lance-shaped segments. The large, four-petaled, long-stalked flowers are pale yellow, and the fruit is a capsule.



Welsh Poppy. Pale yellow flower and leaves

WELSH RABBIT. Savoury made of cheese. The cheese is grated, melted with butter and a little milk, seasoned, and spread on buttered toast. It should then be toasted. The word was originally rarebit, but it has become popularised as rabbit.

WELWYN. Market town of Hertfordshire. It is in the valley of the Maran or Mimram, a tributary of the Lea, on the L.N.E. Rly., 22 m. from London. Edward Young, author of *Night Thoughts*, was rector 1730-65, and is buried in the parish church. Market day, Thurs. Pop. 1,762.

Between Welwyn and Hatfield is Welwyn Garden City, planned in 1920. It has become a centre of the film industry, and large studios have been built. Urban powers were obtained in 1927. Pop. 6,000. Pron. Wellin.

WEM. Market town and urban dist. of Shropshire. It is 11 m. from Shrewsbury, on the L.M.S. Rly. It has cattle markets and other trade in the produce of the surrounding dist., while flour milling and tanning are carried on. The church of SS. Peter and Paul has a Norman tower. Near is Hawkstone Hall. Market day, Thurs. Pop. 2,172.

WEMBLEY. Urban dist. of Middlesex. Situated 3 m. E. of Harrow and 8 m. N.W. of London, it is served by the L.M.S. and Bakerloo Rlys. Wembley Hill has a station on the L.N.E. Rly. The parish church of St. John was designed by Sir Gilbert Scott. In the neighbourhood is Wembley Park, on the Met. Rly., purchased for development as a pleasure ground. The neighbourhood has been developed as a residential suburb of London. The British Empire Exhibition was held in grounds at Wembley, 1924 and 1925. Since



H. G. Wells, British novelist
Russell

1923 the final of the Association Cup has been played in the stadium. In 1926 the site and buildings were sold. Pop. 28,600.

WEMYSS. Name of two localities in Fifeshire, Scotland. West Wemyss stands on the Firth of Forth, 2 m. from Dysart. It has a station on the L.N.E. Rly and a good harbour from which coal is exported. In the neighbourhood is Wemyss Castle. Pop. 2,660. East Wemyss is 1 m. from Buckhaven, also on the L.N.E. Rly. Wemyss Bay is a watering place of Renfrewshire. It is 31 m. from Glasgow, on the L.M.S. Rly. Near is Castle Wemyss, the seat of Lord Inverclyde (q.v.).

The earl of Wemyss is a Scottish title held by the Charteris family since 1633, except during a period of attainder. The heir bears the courtesy title of Lord Elcho. Pron. Weems.



Wemyss, Fifeshire. The ancient castle associated with many events of Scottish history

WEN. Popular name for a sebaceous cyst or tumour containing a greasy material, which tends to grow most frequently on the scalp in adults and old persons. A wen is not dangerous and no harm results if it is left alone, but it can be excised by a simple operation.

WENCESLAUS, VENCESLAS, OR VÁCLAV (d. 935). Bohemian saint and prince. Converted to Christianity, he received the tonsure in the church at Levy Hradec, founded 871. Renowned for his piety, Wenceslaus founded many churches in Prague and elsewhere in the principality. He was assassinated by his ambitious brother, Boleslav, on Sept. 28, 935, at Stará Boreslav. In 939 his body was removed to the church of S. Vitus in Prague. He was later canonised, and, being regarded as the patron saint of Bohemia, the anniversary of his death is still a festival.

WENCESLAUS (1361-1419). German king. Son of the emperor Charles IV, he was born Feb. 26, 1361. His father was also king of Bohemia, and made him king of that country before he was three years old. Wenceslaus was chosen German king in 1376, and two years later, when Charles died, he became the ruler of Germany and Bohemia. His indifference to serious public business caused an outcry from his neglected subjects, and in 1400 four of the German electors declared him deposed. He recovered his throne in 1404, and remained king until his death at Prague, Aug. 16, 1419.

WENDOVER. Town of Buckinghamshire. Picturesquely situated among the Chiltern Hills, it is 5 m. S.E. of Aylesbury, on the L.N.E. Rly. The 14th century parish church of S. Mary contains interesting monuments. Among former M.P.s was John Hampden. Near is Chequers (q.v.). Pop. 2,366.

WENLOCK. Borough of Shropshire. It stands on the Severn, 14 m. from Shrewsbury, on the G.W. Rly. The borough includes the market towns of Much Wenlock and Madeley and the parish of Broseley. The guildhall is a fine half-timbered structure. There is an agricultural trade. The barony of Wenlock has been held by the family of Lawley since 1839. Pop. 13,712.

In geology the Wenlock Series is the middle division of the Silurian rocks of Great Britain. The rocks, typically developed in the W. of

England, consist of limestones and shales, and are important sources of lime and flagstones. See Silurian.

WENSUM. River of Norfolk. It rises not far from Tattersett, in the N. of the co., and joins the Yare below Norwich, through which city it flows. Its course is mainly S.E., and its length is 30 m.

WENTLETRAP (Ger. wendeltreppe, winding stairs). Popular name for marine snails of the large genus *Scalaria*, of which five species are found on the British coasts. The molluscs are cylindrical with a short squarish foot, the head with a retractile proboscis and slender tentacles, at the bases of which are the small eyes. When molested they pour out a purple fluid from the mouth. They feed upon seaweeds, and are found chiefly in the warmer seas. See Mollusc; Snail.

WENTWORTH. Name of a famous English family, whose most distinguished member was the earl of Strafford (q.v.). Its founder was William Wentworth (d. 1308), of Wentworth Woodhouse, Yorkshire. One of his descendants, Thomas (d. 1551), was made a baron in 1529. Thomas, the 4th baron, was made earl of Cleveland in 1626, but on his death in 1667 the earldom became extinct.

After Cleveland's death the barony of Wentworth passed from one female to another. One of these was Anne, the wife of Lord Byron Byron's daughter, who became countess of Lovelace, inherited the title, and from her death until 1906 it was held by the earls of Lovelace. In 1906, on the death of the 2nd earl, the barony, separated from the earldom, passed to his daughter. She died in 1917, when Anne, daughter of the 1st earl and wife of Wilfred S. Blunt, became baroness; dying later in the year, she left the title to her daughter Judith, the wife of N. S. Lytton.

WENTWORTH WOODHOUSE. Country mansion of Earl Fitzwilliam, in the W. Riding of Yorkshire. Situated in the parish of Wentworth, 3½ m. N.W. of Parkgate station on the L.M.S. Rly., the mansion is in the Classic style, and stands in an extensive deer park. The building was designed by Flitcroft for the 1st marquess of Rockingham, and was erected on the site of an older house which once belonged to the Straffords. See Strafford, Earl of.

WEOBLEY. Parish of Herefordshire. It is 8 m. S.W. of Leominster and 3 m. from the Moorhampton station of the L.M.S. There are many half-timbered houses. The parish church of SS. Peter and Paul is partly Norman. Pop. 625.

WEPENER. Town of the Orange Free State. Close to the border of Basutoland, it is 80 m. by rail from Bloemfontein. In 1900 it was defended against the Boers. Pop. 1,366.

WEREWOLF (A.-S. werewolf, manwolf). Person supposed to have the power of transforming himself into a wolf, and as such of preying on human beings. Virgil describes a werewolf in Eclogue 8. The belief is very widespread. See Lycanthropy.

WERGILD (A.-S. wer, man; gild, payment). In Anglo-Saxon law a fine inflicted as a penalty for murder or maiming. The amount, which had to be paid to the next-of-kin or gild brethren, in case of death, varied according to status, ranging from 7,200 shillings in the case of a king to 200 shillings in the case of a ceorl. The wergild of a thane (q.v.) was six times that of a ceorl.

WERNHER, SIR JULIUS CHARLES (1850-1912). Anglo-Jewish financier. Born at Darmstadt, he spent some time as a clerk in London, served in the Franco-Prussian War, and later went to South Africa, where he became associated with Alfred Beit in the diamond business. In 1884 Wernher settled in London as resident partner of the firm afterwards known as Wernher, Beit & Co. He was associated with Rhodes in the management of the De Beers mines. Having been naturalised as a British subject, he was made a baronet in 1905. He died May 21, 1912.

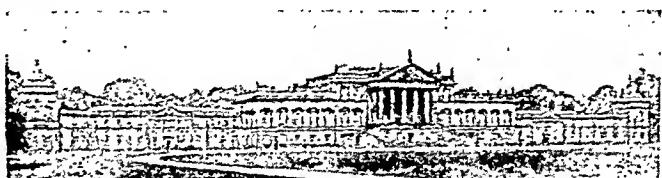
WESER. River of Germany. The Fulda and Werra unite at Münden, Hanover, and the joint stream, the Weser, flows tortuously for about 300 m. N., to enter the North Sea by a large estuary. The lower course is canalised. The tributaries include the Aller and Hunte.



Charles Wesley
English poet

WESLEY, CHARLES (1707-88). English poet. A younger brother of John Wesley, he was educated at Westminster School and Christ Church, Oxford. At Oxford he gathered round him a few undergraduates who were the first Methodists. Ordained in 1735, in 1735-36 he was in Georgia, serving Oglethorpe as secretary. Soon after his return to England, Wesley began to preach in various parts of the country, but, like his brother, he remained in the Church of England. He is better known, however, for his hymns, of which he wrote over a thousand, including *Jesu, Lover of my Soul*. He died in London, March 29, 1788.

WESLEY, JOHN (1703-1791). Founder of Methodism. He was born at Epworth Rectory, June 17 (O.S.), 1703, fifteenth of the Rev. Samuel Wesley's nineteen children. In 1714 John entered Charterhouse School, in 1720 he was elected scholar at Christ Church,



Wentworth Woodhouse.

East front of the Yorkshire mansion, built for the 1st Marquess of Rockingham

Oxford, and in 1726 fellow of Lincoln College. In 1725 he decided to take orders, and was ordained deacon in 1725 and priest in 1728. For some time he was his father's curate in Lincolnshire, but he was called back to Oxford to serve as tutor, and Lincoln College was his home till 1735. His brother Charles had gathered round him at Christ Church a little society of earnest students, and when John came into residence he was recognized as the father of the Holy Club, or the Methodists, as they were called. In 1735 John and Charles went to Georgia, returning in 1737.

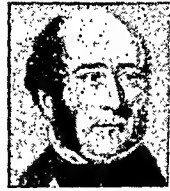
In 1739 John began to preach in the open air at Bristol. His converts were gathered into societies, and the work grew rapidly in London and Bristol. In 1742 Wesley found his way to Yorkshire and Newcastle-upon-Tyne, and his teaching took root everywhere. He generally travelled about 5,000 miles a year, and his itinerancy only ceased with his death. He is said to have delivered more than 40,000 sermons. He had a genius for organization and was quick to avail



John Wesley,
Founder of Methodism
After W. Hamilton
Nat. Port. Gall.

himself on every suggestion which might strengthen Methodism. Wesley preached his last sermon at Leatherhead on February 23, 1791, and died in his own house in City Road, London, March 2 of that year. See Epworth: Methodism; Whitefield, G.: consult also Life J. Tellord. 1906.

WESLEY SAMUEL SEBASTIAN (1810-76). British organist and composer. Son of Samuel Wesley (1766-1837), he was born in London, August 14, 1810.



Samuel S. Wesley
British organist

He acted as organist in several London churches, 1825-32, and became organist at Hereford cathedral in 1832. Later he was organist at Exeter cathedral, Leeds parish church, Winchester cathedral and Gloucester cathedral. His compositions include five church services, various anthems, glees, and organ pieces. He died at Gloucester, April 19, 1876.

WESLEYAN METHODIST CHURCH. Official title of the church founded by John Wesley in 1739. The original name was "the people called Methodists," and when other branches of Methodism arose it came to be distinguished as Wesleyan Methodism. In 1891 the conference expressed approval of the use of the term Wesleyan Methodist Church.

The church really came into existence on Wesley's death. In 1783 he had drawn up a deed of declaration, in which 100 ministers were named as a governing body, and this deed, which was enrolled in the court of chancery, was then put into operation, and is still the foundation of the church.

The conference which directs the affairs of the church—the first met in 1744—long consisted of ministers only. They made decisions, which were confirmed by the legal hundred, and so became binding. In 1878, however, laymen were introduced, and the conference now consists of two sessions, a pastoral, in which the ministers discuss affairs pertaining to that branch of the work, and a representative, in which both ministers and laymen discuss more general matters—financial and the like. Each year a minister is elected president. Following out Wesley's ideas, the chapels are grouped into circuits, each with a superintendent and stewards, and the circuits into districts. Ministers are appointed by conference to the various circuits, remaining, save in exceptional cases, only three years.

Wesleyan Methodism made rapid progress after its founder's death. Its General Missionary Society was formed in 1817. An institution for training ministers was established at Hoxton in 1834. This was afterwards closed, but provision for the training of ministers was made by opening colleges at Didsbury (1842), Richmond (1843), Handsworth (1868), and Headingley (1881). In 1921 one was founded at Cambridge.

About 1885 the church began a forward movement. Halls were obtained in populous centres and services of a bright type held. Many of these missions, e.g. in Manchester and Birmingham, became centres for social work of every kind. In 1898 a 20th century fund was opened, and by it a million guineas, the sum aimed at, was raised. The Royal Aquarium was bought, and on the site new buildings, known as the Central Hall, were erected.

In 1928 the Wesleyan conference of Great Britain voted in favour of union with the other Methodist churches and in favour of opening the ministry to women. The suggested union was soon also approved by the other bodies concerned, and in 1931 the work of amalgamation was in progress. In 1930 the Wesleyan Methodists in Great Britain and

Ireland numbered 499,014 members, with 8,648 chapels, 2,562 ministers, and 15,870 lay preachers. Wesley's Chapel, City Road, London, E.C., is the chief church.

The Wesleyan Reform Union is a smaller Wesleyan church. It dates from 1849 and its adherents are chiefly in the Midlands. The headquarters are in Sheffield. It has 11,104 members and 227 chapels. See Methodism.

WESSEX. Kingdom of the West Saxons. It covered the country between the Thames valley and the S coast, except the kingdoms of Kent and Sussex. About A.D. 560 Ceawlin carried his arms as far as the Bristol Channel, and by the victory of Deorham in 577 severed the Britons on the S.W. from the Britons in Wales. Egbert became king of Wessex in 802, and was recognized as Bretwalda, high king or overlord of the other English kings, in 829.

By 870 the Danes, or Northmen, had practically mastered the northern kingdoms and East Anglia, and then began the struggle for Wessex, in which Alfred the Great proved victorious. At his death the king of Wessex was de facto lord of England on the W. and S. of a line drawn roughly from Chester to London, with a vague sovereignty over the rest of the country, called the Danelagh. Alfred's son, Edward the Elder, made the king of Wessex de facto king of England. The use of the word was revived by Thomas Hardy. See England: Hardy, Thomas.



Wesley's Chapel, London, and the statue of John Wesley, by J. A. Acton, erected in 1891

WEST, BENJAMIN (1738-1820). Anglo-American painter. Born at Springfield, Pennsylvania, of Quaker parentage, Oct. 10, 1738, he practised portrait painting in America, and after three years in Italy, settled in England in 1763. In 1772 he was appointed historical painter to George III. One of the four artists selected to draw up the scheme of the Royal Academy in 1768, he succeeded Reynolds as president in 1792. His Death of Wolfe did much to establish the realistic treatment of historical episodes. He died in London, March 11, 1820. See illus. p. 1062.

WEST AFRICA, BRITISH. Term applied to the British possessions in West Africa, viz. Gambia, Sierra Leone, Gold Coast, and Nigeria, as well as to the parts of Togoland and Cameroons under British mandate. French West Africa consists of Senegal, French Guinea, the Ivory Coast, Dahomé, French Sudan, Upper Volta, Mauritania, and the Niger Colony, the whole under a governor-general. Portuguese West Africa is more usually called Angola. See Africa. Angola.

WESTBOURNE PARK. Dist. of W. London. Part of the bor. of Paddington, it gives its name to a station on the G.W.R., and, with Westbourne Grove, is named after the stream which, rising N. of Paddington, flowed by Bayswater, the E. end of the Serpentine, through Belgravia to the Thames at Chelsea.

WEST BRIDGFORD. Urban dist. of Nottinghamshire. It stands on the S. side of

the Trent and is a residential suburb of Nottingham, with which it is connected by Trent Bridge, from which tramways lead to the centre of the city. Pop. 17,000. East Bridgeford is a village 7 m. farther down the Trent.

WEST BROMWICH. Co. bor. and market town of Staffordshire. Situated 6 m. N.W. of Birmingham, with a station on the G.W. Rly., it is the centre of a busy mining and manufacturing district, and is well served by rlys. and canals. The parish church of All Saints was rebuilt in 1872. Other buildings are the town hall, 1874-75, with a clock tower 130 ft. high; the Institute; and the 16th century half-timbered Oak House. The principal trade is in hardware, in connexion with which there are smelting furnaces and foundries. Market day, Sat. Pop. 73,761.

West Bromwich Albion is a famous professional football club. Founded in 1879 under the name of West Bromwich Strollers, they originally played in Dartmouth Park, their present ground being the Hawthorns in Birmingham Road, West Bromwich. In 1920 they won the first division championship, and in 1888 and 1892 they won the Association Cup.

WESTBURY. Urban dist. of Wiltshire. It stands on the Biss, about 12 m. S.E. of Bath, and is a junction on the G.W. Rly. The chief building is the fine Perpendicular church of All Saints. Westbury is supposed to have been a residence of the kings of Wessex, the site of their palace being still shown. There are manufactures of cloth and gloves. Pop. 3,712.

WESTBURY, RICHARD BETHELL, 1st BARON (1800-73). British lawyer. Born at Bradford-on-Avon, June 30, 1800, and educated at Bristol and Wadham College, Oxford, he was called to the bar in 1823. In 1851 Bethell entered the House of Commons as M.P. for Aylesbury, and in 1852 he was made solicitor-general in the Liberal ministry. Having been attorney-general, 1856-58 and 1859-61; he became lord chancellor in 1861, and was made a baron. He died July 20, 1873. The title is still held by a descendant.

WESTCLIFF. Watering place of Essex, between Southend-on-Sea and Leigh. It has a station on the L.M.S. Rly., and is part of the borough of Southend (q.v.).

WESTCOTT, BROOKE FOSS (1825-1901). British divine. Born near Birmingham, Jan. 12, 1825, he was educated at King Edward's School there and at Trinity College, Cambridge, of which he became a fellow. Ordained in 1849, he was a master at Harrow from 1852 to 1869, when he was appointed canon of Peterborough. In 1870 Westcott became professor of divinity at Cambridge, in 1883 canon of Westminster, and in 1890 bishop of Durham. He died July 27, 1901. Westcott was one of the greatest Biblical scholars of his time, and, in addition, was also very successful as a bishop.



B. F. Westcott,
British prelate
Elliot & Fry

WEST DRAYTON. Parish of Middlesex. It is 2½ m. S. of Uxbridge, and is the junction for Uxbridge and Staines on the main line of the G.W.R., 13½ m. from London. Pop. 2,060.

WESTERHAM. Village of Kent. It is 5 m. W. of Sevenoaks, on the Southern Rly. The Perpendicular church of S. Mary contains interesting monuments. Below the church is Quebec House, where James Wolfe (q.v.), who was born at the vicarage, spent his early years. On Westerham Green is a statue to the famous soldier. Near is Westerham Hill, the highest ground in Kent. Pop. 3,162.

WESTERN AUSTRALIA. State of the Australian Commonwealth, comprising the W. portion of the island. Except for a narrow

coastal margin, the state is a plateau, with desert in the middle. Perth is the capital and the seat of the state university. The area is estimated at 975,920 sq. m. Pop. 412,092.

Gold mining, which dates from 1886, has declined. The chief fields include Pilbara, Ashburton, and Kalgoorlie. The forests produce excellent hardwoods, notably karri and jarrah, as well as sandalwood. Sheep and cattle rearing are important, and dairy and fruit farming are growing industries. Wheat is the chief crop. The pearl shell fishery has its headquarters at Shark Bay. Rly. mileage exceeds 4,500. The governor is assisted by a cabinet of responsible ministers. The legislative council consists of 30 members and the legislative assembly of 50. In 1930 there was a movement in favour of seceding from the Commonwealth. See Australia.

WESTER-WEMYSS, ROSSLYN ERSKINE WEMYSS, 1st BARON (b. 1864). British sailor. He was born April 12, 1864, and entered the navy in 1877. He was commander of the Ophir, in which King George and Queen Mary visited the Dominions in 1901; commodore R.N. barracks, 1911-12; and commander of the second battle squadron, 1912-13. In the Great War he commanded the squadron at the landing in Gallipoli, April, 1915, and at the evacuation, and in 1916-17 was commander-in-chief East Indies and Egypt. He was first sea lord, 1917-19, and in 1919 was raised to the peerage. Pron. Wester-Weems.



1st Baron Wester-Wemyss, British sailor Russell

in-chief East Indies and Egypt. He was first sea lord, 1917-19, and in 1919 was raised to the peerage. Pron. Wester-Weems.

WESTGATE-ON-SEA. Watering place of Kent. It is 2 m. W. of Margate, on the Southern Rly. It is built on the two sides of a promontory and is noted for its braising air. Promenades have been built on each side of the town. Pop. 5,096.

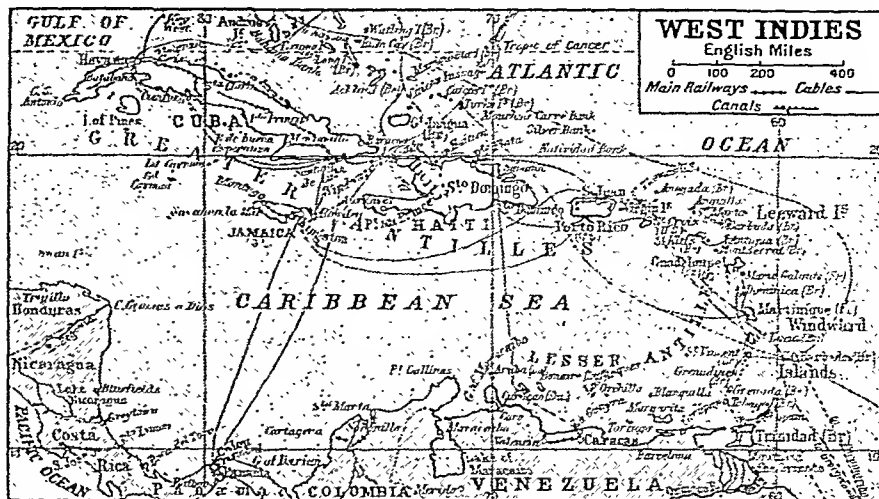
WEST HAM. Co. borough of Essex, part of Greater London. Extending to the Thames with the Lea for its E. boundary, it includes Stratford, Forest Gate, Plaistow, and Canning Town. It is inhabited largely by employees in the shops of the L.N.E. Rly. at Stratford, at the docks, and in soap, sugar, and other manufacturing establishments. West Ham Park covers 80 acres. Pop. 306,900.

West Ham United is a famous Association football club. It was founded in 1895, and in 1923 reached the final of the Association Cup. The ground is situated at Upton Park, East Ham.

WESTHOUGHTON. Urban dist. of Lancashire. Lying 5 m. E. of Wigan, it has a station on the L.M.S. Rly. There are silk and cotton factories, a trade in agricultural produce, and collieries. Pop. 17,240.

WEST INDIES. Archipelago between N. and S. America. It separates the Atlantic Ocean from the Caribbean Sea and the Gulf of Mexico, and is divided into the Greater and the Lesser Antilles (q.v.).

The British West Indies comprise the



West Indies. Map of the American archipelago which separates the Atlantic Ocean from the Caribbean Sea

Bahamas, Barbados, Jamaica, Leeward Islands, Trinidad, Tobago, and the Windward Islands. Martinique, Guadeloupe, S. Pierre and Miquelon are French, Curaçao is Dutch. Margarita belongs to Venezuela. Cuba is an independent state. Porto Rico was annexed by the U.S.A. in 1898; Santo Domingo and Haiti are under American military or financial supervision, and the Virgin Islands were purchased by the U.S.A. in 1917. Details concerning the several islands will be found in articles under their names.

WESTINGHOUSE, GEORGE (1846-1914). American engineer and inventor. Born Oct. 6, 1846, at Central Bridge, New York, he entered his father's machine manufacturing business. In 1864 he became assistant engineer in the U.S. navy, and after graduating at Union College, Schenectady, turned his attention to inventing railway appliances. He also invented a number of improvements in the system of signalling. In 1868 he brought out the air brake known by his name. He inaugurated the use on a large scale of the alternating current for lighting and power, and the transmission of electric power current over long distances. Westinghouse died March 12, 1914.

WEST KENT REGIMENT. Regiment of the British army. It was officially known as The Royal West Kent Regiment (Queen's Own) until April, 1921, when the title was changed to The Queen's Own Royal West Kent Regiment. First raised in 1756, the regiment

participated in the siege of Copenhagen in 1807, and was in Portugal the following year. They distinguished themselves fighting against the Sikhs, especially at Sobraon. The West Kents in the Crimea fought at the Alma and at Inkerman, and led the assault on the Redan. Later they assisted in putting down the Mutiny in India. They went to the relief of Gordon, were on the Indian frontier in 1897-98, and then in South Africa. The first battalion is the old 50th Foot and the 2nd battalion the 97th. In the Great War about 40,000 officers and men served. The 2nd battalion was in Mesopotamia in 1915, gaining distinction at Nasiriyeh. The regimental depot is at Maidstone.



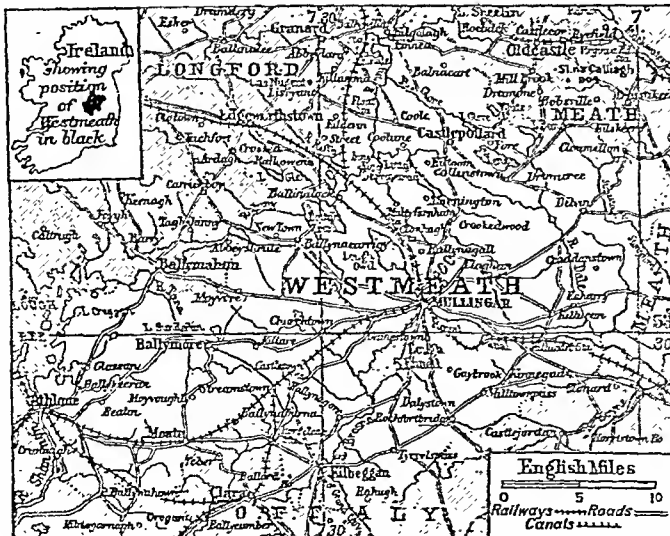
West Kent Regiment badge

WEST KIRBY. Watering place of Cheshire. It stands on the estuary of the Dee, in the Wirral peninsula, 8 m. from Birkenhead, on the L.M.S. Rly. There is a large marine lake. With Hoylake it forms an urban dist. Pop. dist., 19,000.

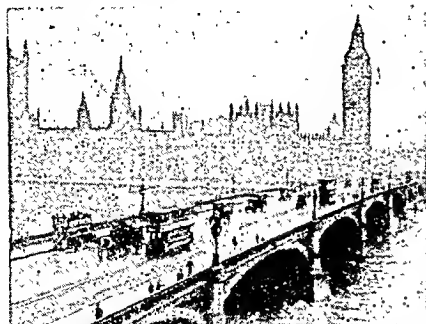
WESTMACOTT, SIR RICHARD (1775-1856). British sculptor. Born in London, he studied in Rome, under Canova, returning to London in 1797. He became A.R.A. in 1805, R.A. in 1811, and was knighted in 1837. The reliefs on the Marble Arch, London, are his work, and he executed the colossal Achilles in Hyde Park. He died in London, Sept. 1, 1856.

WESTMEATH. County of Leinster, Irish Free State. With an area of 709 sq. m., it is wholly inland. It lies chiefly in the basin of the Shannon, which river, with Lough Ree, forms its W. boundary. Other rivers are the Brosna and Dale. Among the many lakes are Derravaragh, Owel, Lene, Ennell, and Gloire. The surface is varied between hill and valley, and is in parts boggy. The pasturing of sheep, cows, horses, and other animals forms the chief industry. The county is served by the G.S. Rlys., and by the Royal and Grand Canals. Mullingar is the county town; others are Athlone, Castlepollard, and Moate. Pop. 56,818. The title of earl of Westmeath has been held by the Nugent family since 1621.

WESTMINSTER. City and met. bor. of the county of London. The name, West Minster, first occurs in a charter of 875, endowing the already established monastery, which was on Thornéa, an island formed by two outlets of the Tyburn and a cross-ditch, the E. boundary being the Thames. The establishment of a royal palace at Westminster in the reign of Canute, or possibly earlier, contributed, with Edward the Confessor's new church and monastery, to the early growth of



Westmeath, Irish Free State. Map of the pastoral inland county of Leinster



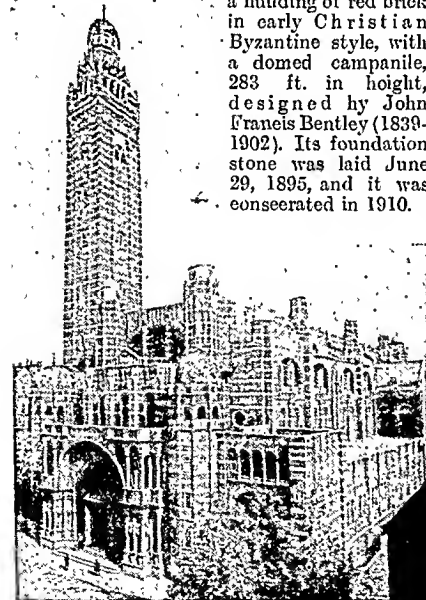
Westminster Bridge and Houses of Parliament, with Big Ben on the right from the London County Hall

the town. The first church of S. Margaret was built about 1100, to be followed by larger buildings. A court of justice was established at Westminster, and this continued after the king had moved his residence elsewhere.

Before the dissolution of the monastery Westminster was governed by the abbot as lord of the manor. In 1547 the city and liberty of Westminster was created a borough to return two members to Parliament. The city has adopted Gavrelle. Pop 141,578

Westminster Bridge crosses the Thames from the Houses of Parliament to S. Thomas's hospital. Replacing a stone structure of 1739-50, it was designed by T. Page and built 1856-62. Its total length is 1,160 ft.; width, 85 ft. It consists of seven iron arches on granite piers.

Westminster Cathedral is the seat of the R.C. archbishop of Westminster. It stands near Victoria Street, a building of red brick in early Christian Byzantine style, with a domed campanile, 283 ft. in height, designed by John Francis Bentley (1839-1902). Its foundation stone was laid June 29, 1895, and it was consecrated in 1910.



Westminster Cathedral. West front and campanile of the principal Roman Catholic church in England

Westminster Hall is the most notable remaining part of the old palace of Westminster. The original structure was completed in 1097 for William Rufus. In 1394-99 Richard II raised the walls, provided the oaken hammer-beam roof, and added the N. porch and towers. Notable discoveries of Norman stonework were made during the repairs to the roof begun in 1914. From a date slightly later than 1225 until 1882 the chief English courts were held, first in the hall, and then in buildings erected for the purpose on the W. side. Here Richard II was deposed, Charles I condemned, Oliver Cromwell in-

stalled lord protector, and here, among others, Sir William Wallace, Sir Thomas More, Anno Boleyn, Strafford, the Seven Bishops, and Warren Hastings stood their trial. The hall is 290 ft. long, 68 ft. wide, and 92 ft. high. South of the members' entrance on the E. side entry is gained to the cloisters and to S. Stephen's Crypt.

Westminster hospital was established in 1719, was moved to its present site, adjoining the Middlesex Guildhall, in 1834, and was enlarged in 1900-1. There is a medical school.

WESTMINSTER, DUKE of British title held by the family of Grosvenor (q.v.)

Sir Richard Grosvenor (1731-1802) was made Earl Grosvenor in 1784, and his son, the 2nd earl, who held political office under Pitt, was made marquess of Westminster in 1831. The 2nd marquess was also a minor politician, and the 3rd, Hugh Lupus Grosvenor (1825-99), was made a duke in 1874. When he died his grandson, Hugh (b. 1879), became the 2nd duke. The duke owes his great wealth to the London property acquired in 1676 by Sir Thomas Grosvenor, Bart., by his marriage with the daughter of a certain Alexander Davies. His chief residence is Eaton Hall (q.v.), near Chester, and Earl Grosvenor is the courtesy title of his eldest son.

WESTMINSTER ABBEY. Officially, the Collegiate Church of S. Peter in Westmin-

ster. The first church of which record exists stood in the 8th century to the W. of the present structure, and was dedicated to S. Peter. It was rebuilt in Norman style, 1050-65, by Edward the Confessor; of this structure a few fragments exist in the Chapel of the Pyx and the Undercroft beneath the Islip Chapel. Henry III added a Lady Chapel, rebuilt by Henry VII, and began a reconstruction that continued until the time of Wren and Hawksmoor, who repaired and raised the W. towers, 1713-40. The design of the N. transept was remodelled in 1890. In 1921 an extensive restoration of the decaying stonework was inaugurated, and several interesting discoveries were made during the evacuations. In 1927 an anonymous donor offered to build a sacristy for the Abbey, but the offer was eventually withdrawn.

The work of five centuries, Westminster Abbey displays several styles; apart from the Perpendicular glories of

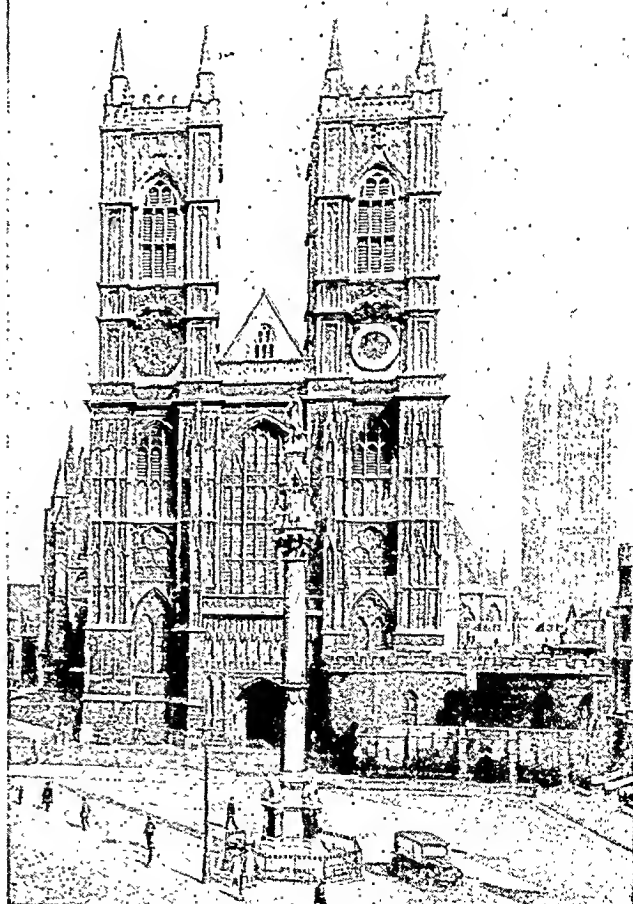
Henry VII's chapel, it is claimed as one of the best examples of Early English architecture in existence. It has been the burial place of many sovereigns and other illustrious dead and the scene of the coronations of kings and queens since Harold. In the chapter house the House of Commons met from about 1299-1547. There are, in addition to Henry VII's, 11 chapels. The E. angle of the S. transept has been known as Poets' Corner since about 1766. The abbey was lighted by electricity in 1913. See Belfry; Fan Tracery; Font; London; also illus. pp. 1352, 1425.



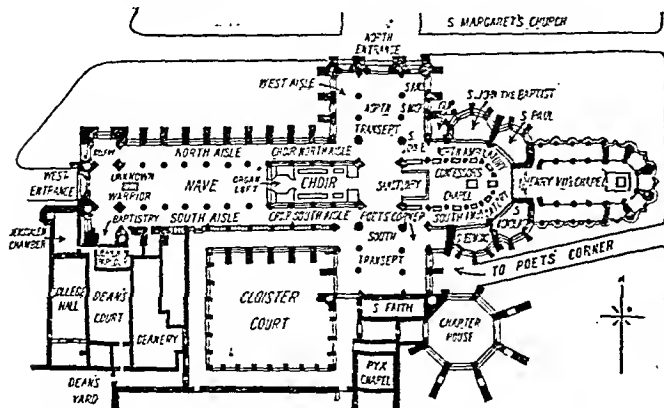
Westminster Hall, showing the magnificent hammer-beam roof

WESTMINSTER ASSEMBLY. Body of lay and clerical members appointed by the English Long Parliament in 1643 to decide upon the form of Church government and the doctrine to be adopted in England and Scotland. The assembly held its first session on July 1, 1643, and sat until Feb. 22, 1649. The result of the deliberations of the assembly was to supersede the Prayer Book by the Directory of Public Worship, to formulate a Presbyterian system of Church government, and to draw up the Westminster Confession.

WESTMINSTER SCHOOL. English public school. Originating in a school attached to Westminster Abbey, whence its name of S. Peter's College, Westminster, it was refounded in 1560 by Elizabeth, and is built



Westminster Abbey. West front of England's noblest shrine. At the foot of the S. tower, right, is the 14th century Jerusalem Chamber, now the chapter room



Westminster Abbey. Ground plan showing position of the chapels and other ecclesiastical buildings. See page 1424

around Little Dean's Yard. The scholars were accommodated in the old granary of the abbey, and their dining hall, or College Hall, was the refectory of the abbot. The great school room was once the monks' dormitory. Boys who gain scholarships are known as King's Scholars. Most of these live in college. There is a memorial window in the Great School to the 220 Old Westminsters who fell in the Great War.

The schoolboys enjoy privileges in connexion with the Abbey and the Houses of Parliament. Notable customs are the tossing of the pancake on Shrove Tuesday and the performance of a Latin play at Christmas, the epilogue and prologue of which are topical.

WESTMORLAND. Northern county of England. With an area of 789 sq. m., it is inland save for a strip of coast at the mouth of the Kent on Morecambe Bay, and is almost wholly mountainous, with several heights over 2,000 ft., among them one, Helvellyn, over 3,000 ft. The W. portion forms part of the Lake District. The chief rivers are the Eden, Lowther, Kent, and Lune, and the lakes include Grasmere, Hawes Water, Rydal Water, and parts of Ullswater and Windermere. In the valleys the soil is fertile, but much of the land is only suitable for sheep. Marble, graphite, lead, and slate are worked. The L.M.S. and L.N.E. Rlys. serve the county. Appleby is the county town. Pop. 65,746. See Lake District.

The title of earl of Westmorland has been held by the families of Neville and Fane. The first grant of the title, 1397, was to Ralph (1364-1425), 4th Baron Neville of Raby. In 1624 it was granted to Sir Francis Fane. The eldest son bears the courtesy title of Lord Burghersh.

WESTON. Village of Somerset. Situated on the Avon, 2 m. N.W. of Bath, it has a station on the L.M.S. Rly. It was the scene of a battle which took place in the Civil War, 1643. Pop. 1,549.

Another Weston is a village in Shropshire, situated 5 m. from Shifnal. The hall here is the seat of the earl of Bradford.

WESTON, DAME AGNES E. (1840-1918). British philanthropist, known as the Sailors' Friend. She was born in London, but removed to Bath, and in 1868 began her philanthropic work, visiting hospitals, etc. Later she started a series of monthly letters to seamen, the Bluebacks. Active superintendent of the Royal Naval Temperance Society, in 1876, with Miss Wintz she opened a Sailors' Rest at Devon-

Pier runs out to the island of Birnbeck. Pop. 31,643. Pron. Weston-super-mary.

WESTPHALIA. Prov. of Prussia. It lies N. of the Rhine Province, S.E. of Holland and S.W. of Hanover. Its area is 7,803 sq. m. The N.E. is hilly, rising on the border to the Teutoburger Wald; the W. includes the lowland of the Rhine valley. Here is one of the richest coalfields in Europe. Zinc, copper, iron, and pyrites are mined. The iron industry based on Essen is one of the largest in the world. Münster, Essen, Düsseldorf, and Dortmund are important towns. Pop. 4,811,219.

The kingdom of Westphalia was a Napoleonic creation, and included much that is outside the present province. It lasted from 1807-13, its ruler being Jerome Buonaparte.

The Treaty of Westphalia was the general peace that closed the Thirty Years' War (q.v.), Oct. 24, 1648. The principle of religious toleration was formally established except in the Hapsburg territories. Sweden received W. Pomerania, parts of Mecklenburg, the archbishopric of Bremen, the bishopric of Verden, and representation in the diet. France was confirmed in her possession of Metz, Toul, and Verdun, and obtained the sovereignty of most of Alsace. Saxony received Lusatia. But the chief gainers were Brandenburg and Bavaria,

port, and later a branch at Portsmouth. Created G.B.E., June, 1918, she died Oct. 23, 1918. Her publications include *My Life Among the Bluejackets*, 1909.

WESTON-SUPER-MARE. Urban dist. and watering place of Somerset. Facing the Bristol Channel, 20 m. N. of Bridgwater, on the G.W. Rly., the town has grown from a small fishing village into a popular resort. There are fine marine parades and winter gardens. Birnbeck

the elector of which was confirmed in his dignity and in the possession of the Upper Palatinate. The independence of Switzerland and the United Provinces, or Dutch Netherlands, was recognized.

WEST POINT. U.S. military academy. It stands on the right bank of the Hudson river, in Orange co., New York state, about 50 m. from the city of New York. It was established in 1802.

WESTPORT. Urban dist. and seaport of co. Mayo, Irish Free State. In Clew Bay, it is 10 m. S.W. of Castlebar, and has a station on the G.S. Rlys. Pop. 3,488.



West Riding Regiment badge

WESTPORT. Port of South Island, New Zealand. It stands at the mouth of Buller river, and is the terminus of a rly. line serving the adjacent coalfield. Pop. 4,100.

WEST RIDING REGIMENT. Regiment of the British army. Known as the Duke of Wellington's, this was formerly the 33rd and 76th Foot. It dates from 1702, and saw active service in the same year. Its meritorious deeds in the Maratha War, 1803-5; earned for it a special set of colours, the badge of the elephant with the word Hindoostan. It fought in the Peninsular War, at Quatre Bras and Waterloo, and in the Crimea; also in the South African War. The regular and auxiliary battalions all distinguished themselves in the Great War. Until Dec., 1920, its official title was The Duke of Wellington's (West Riding Regiment), but it was then altered to The Duke of Wellington's Regiment (West Riding). The regimental depot is at Halifax, Yorks.

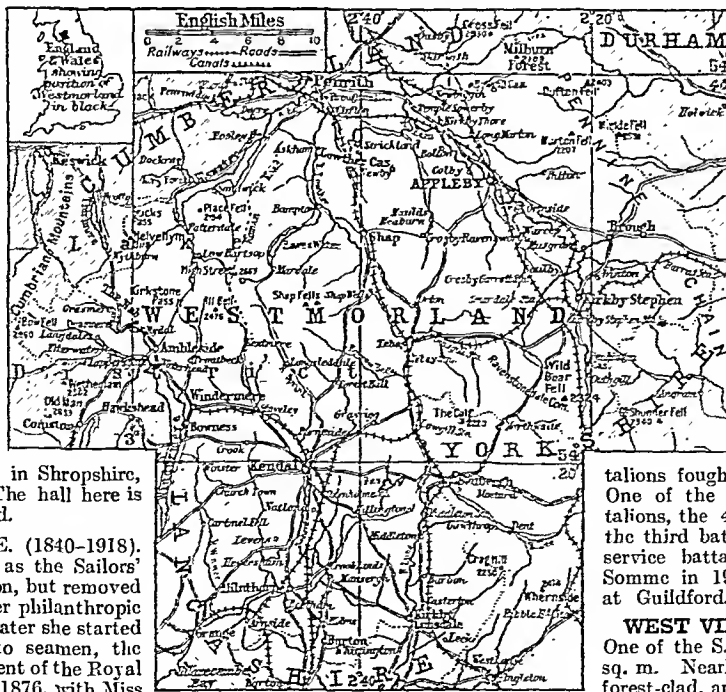


West Surrey Regiment badge

WEST SURREY REGIMENT, ROYAL. Regiment of the British army. Its official title of The Queen's (Royal West Surrey Regiment) was altered to The Queen's Royal Regiment (West Surrey) in Dec., 1920. This regiment, whose prefix Queen's dates from 1684, was formerly the 2nd Foot, and is one of the oldest regiments in the army. It was raised in 1661 to defend Tangier. Under William III its heroism at Tongres in 1695 gained it the distinction of "royal." As Marines the Queen's shared in Lord Howe's victory of June 1, 1794, and fought under Abercromby in Egypt, and in the Peninsular War. Later it saw service in Afghanistan, 1838-39, in the Kafir War, 1851-53, the China War, 1860; Burma, 1855-56; and South Africa. This regiment had about twelve battalions in the Great War, greatly distinguishing itself.

Both the 1st and 2nd battalions fought in the early battles of 1914. One of the regiment's two territorial battalions, the 4th, rendered splendid service in the third battle of Ypres, 1917. The 7th, a service battalion, was conspicuous on the Somme in 1916. The regimental depot is at Guildford.

WEST VIRGINIA. State of the U.S.A. One of the S. Atlantic group, it covers 24,170 sq. m. Nearly three-fourths of the surface is forest-clad, and lumbering ranks high among the state's industries. The fertile soil yields



Westmorland. Map of the mountainous county



Wexford, Ireland. Map of the south-eastern agricultural county of Leinster

excellent crops, and dairy farming is a thriving pursuit. Fruit is increasingly grown. There is an enormous coal area, and the output of petroleum and natural gas is also large. West Virginia University and other institutions provide higher education, and communication is afforded by over 7,000 m. of rlys. Charleston is the capital. Formerly part of Virginia, West Virginia became a separate state in 1863. Pop. 1,724,000.

WESTWARD HO. Watering place of Devonshire. On Bideford Bay, in the urban dist. of Northam, 3 m. from Bideford, it takes its name from Charles Kingsley's novel. It has golf links, while here was the United Services College, at which Kipling was educated, and which he pictures in *Stalky & Co.*

WEST YORKSHIRE REGIMENT. Regiment of the British army. Known as the Prince of Wales's Own, this was raised in 1685, and was numbered the 14th of the line. Under William III it saw active service in Flanders, 1692-95, and assisted in the defence of Gibraltar. 1727, and the campaign against the Jacobites, 1745-46. It fought in America during the War of Independence, and then in Europe in the struggle against France. In the Crimean War, the New Zealand War, 1861-63, and the Afghan War, 1879-80, the regiment gained further honours, and in the S. African War it helped to relieve Ladysmith. In the Great War there were, besides its regular battalions, four territorial and twelve service battalions. It was officially known as The Prince of Wales's Own (West Yorkshire Regiment) until Dec., 1920, when its title was changed to The West Yorkshire Regiment (The Prince of Wales's Own). The depot is at York.



West Yorkshire Regiment badge

WETHERBY. Market town of Yorkshire (W.R.). It stands on the Wharfe, 3 m. S.E. of Spofforth, on the L.N.E. Rly. Brewing

fishing is a thriving industry. The G.S. Rlys. serve the county. Wexford is the county town; others include New Ross and Enniscorthy. The area is 900 sq. m. Pop. 95,848.

WEXFORD. Bor., port, and co. town of co. Wexford, Irish Free State. It lies on a hill above the estuary of the Slaney. The shallowness and bar of the harbour led to the construction of a new harbour at Rosslare (q.v.), with which the town is connected by rly. The industries include herring, oyster, and salmon fisheries, distilling, brewing, lime and cement works, and iron foundries. Features are the ruins of the 12th century Selskar Abbey, or priory of SS. Peter and Paul, and ruins of S. Mary's, a priory of the Knights Hospitallers. Pop. 11,879.

WEY. River of Surrey and Hampshire. It rises near Alton and, entering Surrey, cuts through the hills near Guildford, and flows mainly N. until it joins the Thames near Weybridge. On its banks are Guildford and Woking. Its length is 35 m., and the Tillingbourne is the main tributary. There is a Wey in Dorset. It rises near Upway and falls into the English Channel at Weymouth.

WEYBRIDGE. Urban dist. of Surrey. It stands on the Wey, near its union with the Thames, and is 19 m. from London by the Southern Rly. Oatlands (q.v.) is in the neighbourhood. St. George's Hill, on which is a large prehistoric camp, is a tract of pine forest and heather open to the public. On it is a golf course. Pop. 6,688. See Brooklands.

and a trade in agricultural produce are the principal occupations. Market day, Thurs. Pop. 2,126.

WETTERHORN. Mountain in the Bernese Oberland. It rises to 12,166 ft., near Grindelwald, as the Mittelhorn. The other two summits are the Rosenhorn, 12,110 ft., and Hash Jungfrau, 12,150 ft. It was first ascended in 1844 and 1845.

WEXFORD. County of Leinster, Irish Free State. It has 90 m. of irregular and dangerous coastline indented by Wexford Harbour, Ballyteige Bay, Bannow Bay, and Waterford Harbour. The surface is mainly a succession of low hills, but becomes mountainous in the N. and N.E. (Mt. Leinster, 2,610 ft.). The Slaney and Barrow are the chief rivers. Agriculture is pursued, and

industry. The G.S. Rlys. serve the county. Wexford is the county town; others include New Ross and Enniscorthy. The area is 900 sq. m. Pop. 95,848.

WEYGAND, MAXIME (b. 1867) French soldier. He joined the army as an artillery lieutenant in 1887, and was appointed chief of staff to General Foch in Oct., 1914. He participated in the Ypres and Yser operations in Oct.-Dec., 1914, in Artois, 1915, and on the Somme, 1916. His work in the critical battles of March-Oct., 1918, was brilliant. In 1920 he went to Poland to advise on military matters, and later was high commissioner for Syria. He left Syria in 1926, and in 1930 he was made chief of the general staff.

WEYMAN, STANLEY JOHN (1855-1928). British novelist. Born at Ludlow, Aug. 7, 1855, he became a barrister but made his fame as a writer, achieving his first great success with *A Gentleman of France*, 1893. This was followed by a number of other romances. Among them were *Under the Red Robe*, 1894; *Memoirs of a Minister of France*, 1895; *The Red Cockade*, 1895; *Count Hannibal*, 1901; *Star-crow Farm*, 1905; and *The Wild Geese*, 1908. In 1919 appeared his novel *The Great House*. Weyman died April 12, 1928.



Stanley Weyman, British novelist
Elliott & Fry

WEYMOUTH. Borough, watering place, and market town of Dorsetshire. On the Wey, 8 m. S. of Dorchester, with stations on the G.W. and Southern Rlys., the bor. includes the town of Melcombe Regis on the N. side of the river. Weymouth proper lies round the bay and to the S. of the river. Its popularity as a holiday resort dates from the time of George III, who frequently resided at Gloucester House (later a hotel). The port has a regular service in connexion with the G.W. Rly. to the Channel Islands. There is trade in Portland stone and tiles. Market days, Tues. and Fri. Pop. 24,570.

WHALE (Cetacea). Order of large mammals of fish-like form adapted to life in the oceans. To maintain the high temperature of the blood, there is a thick layer of fat (blubber) under the smooth skin. There is no neck, no external ears, and the nostrils (blow-holes) open on the upper surface. The fore-limbs are converted into paddles, and the hind-limbs are absent, or represented by a few vestigial bones in the skeleton. The body ends behind in a large horizontal expansion that constitutes a tail fin.

The order is divided into two groups, the toothed whales (Odontoceti) and the whalebone



Whale. Above, sperm whale, which yields the most valuable of the whale oils. Below, Greenland right whale, which furnishes whalebone

whales (Mystacoceti); the former including the sperm whale, the dolphins, porpoises, and narwhal, the latter comprising the right whales and the rorquals. All whales breathe atmospheric air, for which they have to come to the surface at intervals.

The largest and most important of the toothed whales is the cachalot or sperm whale (*Physeter macrocephalus*). It yields the most valuable of the whale oils, in addition to spermaceti and ambergris. Another toothed whale, the bottle-nosed whale, occasionally visits British waters. The white whale is found chiefly off Labrador and Canada.

Of the whalebone or right whales the most important formerly were the Greenland whale (*Balaena mysticetus*) and the Biscayan whale or Nordkaper (*B. glacialis*). The latter is almost extinct, a few still being caught in the N. Atlantic. The Greenland or right whale is also nearly extinct. In the 18th and 19th centuries it was very plentiful, but the demand for its baleen, or whalebone, for garments, and its oil for lighting led to a great reduction in its numbers.

WHALING. The chief object of the whale fishery to-day is the rorqual or finback. Its blubber furnishes a large quantity of oil, and its flesh and residues are used partly to mix with cattle foods and the remainder as guano. The industry is carried on, mainly by Norwegians, around Iceland, Newfoundland, the Faroe Islands and S. Africa; also off S. Georgia. See Ambergris; Ca'ing; Dolphin; Grampus; Narwhal; Porpoise; Spermaceti.

Whale Island. Island on the E. side of Portsmouth Harbour. Thereon is the school of naval gunnery. See Portsmouth.

WHALLEY. Village of Lancashire. It stands on the river Calder, on the road from Blackburn to Clitheroe. Here, in 1296, an abbey was founded for the Cistercians. In 1928 it was bought by the diocese of Blackburn to be used as a retreat. Pop. 1,378.

WHANGEE CANE (*Phyllostachys nigra*). Bamboo-like perennial of the natural order Gramineae. It is a native of China and Japan. Its slender, almost solid culms are 4-25 ft. long, and are exported for making into walking-canes, chairs, etc.

WHARFE. River of Yorkshire (W.R.). Rising 7 m. S. of Hawes, it flows through Langstrothdale and Wharfedale, past Grassington and Bolton Abbey, to Ilkley. It here bends E. to Wetherby and then flows S. to Cawood, where it flows into the Ouse. The total length of the river is 60 m.

WHARNCLIFFE, EARL OF. British title borne by the family of Stuart-Wortley. James Stuart, a younger son of the 3rd earl of Bute, inherited from his mother the barony of Mountstuart and the estates of the Wortley family in Yorkshire. His son, James Archibald Stuart-Wortley (1776-1845), the name taken by the family, was an M.P., 1798-1826. In 1826 he was made Baron Wharncliffe of Wortley. His grandson Edward, the third baron (1827-99), was made an earl in 1876. He gave his name to the Wharncliffe Rooms, Marylebone.

WHARTON, THOMAS WHARTON, 1ST MARQUESS OF (1648-1715). English statesman. Son of the 4th Baron Wharton, he was born at Woburn. A staunch Whig, he entered the House of Commons in 1673, and opposed the policy of James II. He boasted that the song Lilliburlero, which he wrote in 1687, had "sung a king out of three kingdoms." Created an earl in 1706, he was made lord-lieutenant of Ireland in 1708. For his advocacy of the Protestant succession he became lord privy seal and marquess of Wharton in 1714. He died April 12, 1715.

His son Philip was made duke of Wharton, but, having attached himself to the Old Pretender, he was declared a traitor. He died May 31, 1731, when his titles became extinct.

WHATELY, RICHARD (1787-1863). British divine. Born in London, Feb. 1, 1787, in 1814 he was ordained. In 1825, after two years passed as a vicar in Suffolk, he was made principal of S Alban Hall, Oxford, and in



Richard Whately,
British divine
After C. Green

1829 professor of political economy. In 1831 he was chosen archbishop of Dublin, and was there until his death, which took place Oct. 8, 1863.

Whately's fame rests upon his *Manual of Logic*. He exerted himself to reconcile Ireland to English government, and to heal the breach between Protestant and Catholic.

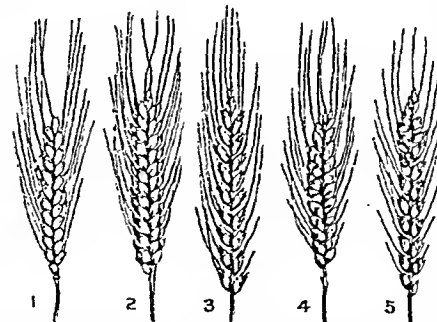
WHEAT. Cereal crop, forming the principal food of mankind. It is a grass of the order Gramineae and the genus *Triticum*.

The wheat plant consists of stems supporting spikes, in which flowers and kernels are formed. The kernels are enclosed in scale-like coverings called glumes or chaff. The principal parts of the kernel are the coatings, the embryo, and the starchy interior or endosperm. The last, from which flour is milled, is about 76 p.c. of the whole weight of the grain. The coatings which, when ground, form the bran and pollard of commerce, are about 10 p.c. of the weight, while 15 p.c. is moisture.

Wheat grows to a height of three to five feet, according to variety, climatic conditions, etc., and its roots penetrate the soil to a depth of from four to seven feet. From one seed four to eight stems usually spring, but this number may be increased to fifty or more. More than one thousand different varieties are known. Common wheat (*Triticum vulgare*) comprises the vast majority of wheats grown for bread making. Geographically speaking, the range of wheat is very wide. It thrives in southern Brazil, in Cuba, in many parts of India, and in Rhodesia.

Up to the end of the 18th century the wheat grown in the United Kingdom did not differ perceptibly from that raised in ancient Egypt. The first great improvement was due to a Scottish farmer, P. Shirreff, who in 1819 observed in one of his fields a wheat plant which produced an unusually large yield. Saving the seed, he sowed it the following season in garden ground, and by selective cultivation of the progeny he ultimately produced wheats with a greatly improved yield of grain. Other experimenters since that day have carried on the work.

The principal diseases from which wheat suffers are smut, bunt, and rust. The attacks of the smut fungus can be reduced by steeping the grain before sowing in a solution of sulphate of copper or formalin. Rust is uncontrollable, and takes yearly 5 to 10 p.c. of the entire wheat crop of temperate countries. In 1929 the world's wheat crop was



Wheat. Ears of the principal varieties of the cereal. 1. Small spelt. *Triticum monococcum*. 2. Emmer, *T. dicoccum*. 3. Common spelt, *T. spelta*. 4. Club wheat, *T. compactum*. 5. Common wheat, *T. vulgare*

estimated at 518,000,000 quarters. The Soviet Union produced the greatest amount, followed by the U.S.A., Canada, and Argentina. See Agriculture; Bread; Bunt; Crops; Rust.

WHEATEAR (*Saxicola oenanthe*). British migratory bird. It arrives about the beginning

of March. It is 6 ins. long, and has grey plumage on the upper parts, black on the wings, black and white on the tail, and white on the breast and under parts. In the autumn the plumage assumes a reddish-brown hue. The wheatear feeds chiefly on insects.



Wheatear an early migrant to Great Britain
W. S. Berridge, F.Z.S.

WHEATLEY. Urban dist. of Oxfordshire. Adjoining Cuddesdon and 7½ m. E. of Oxford, it has a station on the G.W. Rly. Pop. 918.

WHEATLEY, FRANCIS (1747-1801). British artist. Born in London, son of a master tailor, he first exhibited at the Royal Academy, 1778, was elected associate, 1790, and R.A., 1791. He died June 28, 1801. Wheatley is best known for his popular series *The Cries of London*. See illus. p. 675.

WHEATSTONE, SIR CHARLES (1802-75). British electrician and inventor. Born at Gloucester, he early took an interest in science, contributing important papers on light and optics to the *Transactions of the Royal Society*, etc. Professor of experimental physics at King's College, London, 1834, he carried out experiments on the transmission of electric signals over wires, developing, with Cooke, the type printing telegraph, magneto-electric dial telegraph, and automatic transmitting and receiving instruments. Wheat-



Sir C. Wheatstone,
British inventor

stone invented the rheostat, the stereoscope, electrical clocks, etc. He was knighted in 1868, and died Oct. 19, 1875. See Telegraph.

WHEATSTONE'S BRIDGE. This is a device for measuring an unknown electrical resistance by means of a known resistance, from which the resistance required can be calculated. See Potentiometer; Rheostat.

WHEEL. Disk, circular framework, or body capable of turning on a central axis and used for facilitating motion. Early wheels were solid disks of wood, or made from pieces of wood fastened together and cut into a circular shape afterwards. Later they were made of a central hub connected by radial spokes to the felloes, or segmented rim, on which is shrunk the iron tire. The modern disk wheel of modern motor vehicles has spokes with removable disks of thin metal.

Wheels whose rims are provided with teeth, as in machinery, etc., are known as gear, spur, and cog wheels. A fly wheel is a metal wheel used for regulating a steam engine. (See Gear.)

In military and naval terminology, a movement of troops or vessels in line by changing direction while keeping alignment is known as a wheeling movement.

Breaking on the wheel was an ancient form of capital punishment. The victim was tied spread-eagled either to a wheel or to a cross, and his limbs successively broken by blows from an iron bar.

WHEEL LOCK. Mechanical device for firing early forms of guns without the use of light. It was invented at Nuremberg in 1515. The cock is pivoted forward of the lock, and the jaws, which point towards the butt, hold a piece of pyrites, a spring tending to force the latter on to the hase of the flash pan, through the bottom of which projects the serrated

edge of a steel disk. The latter is connected by a short link of chain to a drum containing a spring, which can be wound up with a key. In early models the lid of the flash pan had to be opened by hand and the cock lowered before the trigger was pulled, but in later guns these operations were effected mechanically when the trigger was pulled. The wheel lock made it possible to take a steady aim. See Matchlock.

WHELK (*Buccinum undatum*). Large marine snail. It has a thick, stony shell of a few swollen whorls with curved, broad ribs crossed by spiral lines of growth. The animal has a broad, muscular foot, with a horny operculum behind for closing the shell. The head bears a pair of pointed tentacles with eyes at their base, and the extensible muzzle is furnished with a lingual ribbon capable of boring holes through the hard shells of other molluscs. The whelk is carnivorous. There is a regular



Whelk. Edible sea snail, showing whorled shell

"fishery" for them for bait and for food. They are taken by the dredge, or by sinking baskets containing carrion and weighted by stones. See Mollusc.

WHERNSIDE. Mountain of Yorkshire. One of the highest peaks of the Pennine range, 2,414 ft., it rises above the moors where Yorkshire, Lancashire, and Westmorland meet.

WHETSTONE. District of Middlesex. It has a station, Totteridge and Whetstone, on the L.N.E. Rly 9½ m. from King's Cross. There is a place of the same name in Leicestershire, 93½ m. from Marylebone, on the L.N.E. Rly. Whetstone Park is a thoroughfare in London, between Holborn and Lincoln's Inn Fields. Here stood Spenser House, the early home of the author of *The Faerie Queene*.

WHEWELL, WILLIAM (1794-1866). British scholar. Born at Lancaster, May 24, 1794, the son of a carpenter, he was educated at Trinity College, Cambridge, being second wrangler in 1816, and fellow and tutor of Trinity. From 1828-32 he was professor of mineralogy, and from 1838-55 professor of moral philosophy, while from 1841-66 he was master of Trinity. He died March 6, 1866.

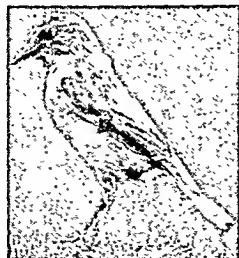
Whevell was one of the greatest intellects of all time. He did much to revive the standard of education in Cambridge, and it was owing to his efforts that the moral and natural sciences triposes were instituted. In philosophy he was influenced by Kant; his ethical standpoint was intuitionist. Pron. 'Hewel.

WHICKHAM. Urban dist. of Durham, 3 m. W. of Gateshead. The church of S. Mary contains some Norman work. There are steel and chemical works. Pop. 19,141.

WHIG. Name used for a political party in England. It is an abbreviation of Whigmore, an opprobrious name of doubtful etymology. The term was originally applied to extreme Scottish Covenanters. During the struggle over the passing of the Exclusion Bill the term came to be applied to the advocates of the bill.

The Revolution of 1688 established the Whigs as the party which stood for opposition to encroachments by the crown, and for the Protestant Succession. It was much strengthened by the accession of the Hanoverian dynasty in 1714, and thenceforward

the Whig party enjoyed undisputed supremacy for some 60 years. Eventually it broke up into factions. During the French Revolution the more progressive elements headed by Fox assumed the title of New Whigs. See Liberal; Tory.



Winchat. Hen of the small bird that nests on the ground
W. S. Berridge, F.Z.S.

WHIP. In British politics, an official whose duty it is to see that the members of his party vote as they should. He acts as the intermediary between the leaders and the rank and file, and helps in the organization of the party. The government whips are members of the ministry, the patronage secretary to the treasury being the chief whip, and the junior lords of the treasury and the officers of the household his assistants. Two of the whips act as tellers when divisions take place on party lines. The chief whip is the guardian of the party funds.

The term whip is also applied to messages circulated to members warning them to be in their places at a certain time.

WHIPPET. Breed of dog produced by crossing the fox terrier with the greyhound and the Italian greyhound. It resembles a small greyhound with fox terrier markings, and the best type of animal weighs between 16 lb. and 24 lb. Developing great speed, it is bred for rabbit coursing and for racing.

WHIPPINGHAM. Parish of the Isle of Wight. On the Medina, 1 m. S. of Osborne House, it has a station on the Southern Rly. The church of S. Mildred contains memorials of the royal family. Pop. 2,645. See Osborne House.

WHIP-POOR-WILL (*Antrostomus vociferus*). Species of nightjar, occurring in N. America. The name is derived from the peculiar cry that the bird utters in the night. The whip-poor-will is about 10 ins. long, and has mottled brown plumage with a white band on the throat. There are conspicuous stiff bristles at the base of the beak.

WHIP SCORPION. Member of the order Pedipalpi, of the class Arachnida. It derives its name from the modification of its first pair of legs into whip-like organs of touch. The tailed whip-scorpions found in N.E. India, W. Indies, and Central and S. America, have a jointed, thread-like tail attached to the last segment of the abdomen. See Scorpion.

WHIPNADE. District of Hertfordshire. It is 3 m. from Dunstable and formed part of the Ashridge estate. In 1927 Hall Farm here was bought by the Zoological Society and laid out as open air zoological gardens. The first animals

were taken there in 1930. It is reached by the L.M.S. Rly.

WHIP SNAKE. Popular name for snakes of the genus *Dryophis*. They occur in India and Malaya, and are remarkable for the length and slenderness of the body and tail. They are arboreal in habit, and feed upon lizards and small birds.

WHIRLWIND. Air eddies whose heights are much greater than their diameters, and which rotate rapidly round a more or less vertical axis. Whirlwinds seldom last more than a minute, but during that time there may be violent changes in wind direction. They often originate in the tropics during a hot season, and give rise to the so-called dust whirlwinds. In the Sahara, such whirlwinds will lift and deposit enough sand in a minute to cover a caravan. See Tornado.

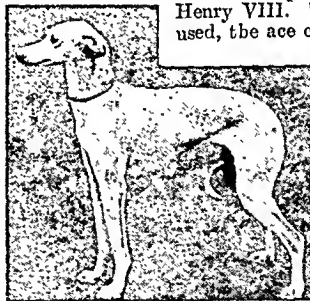
WHISKY. Intoxicating spirit. Its former name was usquebaugh, meaning in Gaelic water of life. A spirit like whisky has probably been distilled from grain in northern latitudes from very early times, just as brandy has been distilled from wine in the south. Most distilleries in Scotland use malted barley mixed with a proportion of unmalted barley, but in Ireland the whisky is made from a mixed mash of malted and unmalted grain, generally consisting of about 75 p.c. or 80 p.c. barley, and the remainder oats, rye, or wheat. The latter is added to the malt to give it a distinctive flavour.

Newly distilled whisky has a harsh acid flavour; consequently, it is matured in wooden casks for three years or longer, during which time certain changes take place in the constituents, with the result that the others develop, which gives whisky its distinctive flavour. See Distillation.

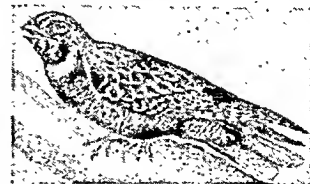
WHIST. Card game. It originated from that of trump or triumph played in the time of Henry VIII. The whole pack of 52 cards is used, the ace counting highest, and the other twelve of each suit bearing their usual face value. The last card dealt, which falls to the dealer, is laid faced on the table and shows the trump suit, but sometimes, instead of turning up the last card, a second pack is cut for trumps. The cards of the trump suit are superior in value to any others.

The object of the game is to make tricks, the highest card of any suit played during a round taking the trick; or in the event of a player being without a card of the suit played, he can play one of the trump suit and so take the trick, or he can discard. The winner of any trick has the next lead. The side taking the most tricks wins, scoring one for every trick over six; the six tricks are known as the hook. The rubber is the best of three games.

WHISTLER, JAMES ABBOTT MCNEILL (1834-1903). Anglo-American painter. He was born at Lowell, Mass., July 10, 1834, and in 1855 went to Paris and entered Gleyre's atelier. Etchings—The French Set—first occupied him. His first painting, *At the Piano*, was refused by the Salon in 1859, and the rejection of *The White Girl* in 1863 determined the artist to migrate to London. Meanwhile he had begun *The Thames Set* of Etchings, and had exhibited *The Thames in Ice*, 1862, at the R.A. About the same time he became



Whippet. Watford Maisie, a champion dog of the coursing breed



Whip-poor-will. North American species of nightjar

strongly influenced by Japanese art, a phase represented by the large *Princesse du Pays de la Porcelaine*, 1865. In 1872 came his famous *Portrait of the Painter's Mother*. This was exhibited at the R.A. and was bought for the Luxembourg.



James Whistler,
Anglo-American
painter
Self-portrait

o'clock Lecture 1885, and *The Gentle Art of Making Enemies*, 1890. Other works are portraits of Miss Alexander, Thomas Carlyle, and Sarasate; *The Blue Wave*, Biarritz, and *Old Battersea Bridge* (Tate Gallery). He died at Chelsea, July 17, 1903. Consult the *Life*, J. and E. R. Pennell, 1908; and *The Whistler Journal*, J. and E. R. Pennell, 1921.

WHITBREAD, SAMUEL (1758-1815). British politician. Born at Cardington, Bedfordshire, he was Whig M.P. for Bedford from 1790. A vigorous opponent of Pitt and friend of Fox, he was an advocate of peace, poor law reform, popular education, and national economy; opposed the slave trade, conducted the impeachment of Henry Dundas, 1st Viscount Melville, for alleged malversation while treasurer of the navy, and took a fearless part in the inquiry into the conduct of the duke of York. He killed himself, July 6, 1815.

WHITBY. Urban dist., seaport, watering place and market town of Yorkshire (N.R.). On the Esk, 20 m. N.W. of Scarborough. It is served by the L.N.E. Rly. In S. Mary's churchyard is a cross commemorating Caedmon (q.v.), who was a monk at the abbey. Shipbuilding is an ancient industry, but the making of jet ornaments is the principal trade. On the W. cliff a residential quarter has sprung up, with a spa and promenade, on which is a statue to Captain Cook. The most famous object in the town is the ruined abbey, founded in 657. The original building was destroyed by the Danes in 867, but it was restored as a Benedictine abbey in the 11th century. Standing exposed to the weather, it has fallen to pieces until only portions of the shell exist. Its ruins were transferred to the nation in 1920. The town was shelled by a German squadron on Dec. 16, 1914. Market day, Sat. Pop. 12,513

WHITCHURCH. Village of Middlesex. Known also as Stanmore Parva and Little Stanmore, it lies $\frac{1}{2}$ m. W. of Edgware (q.v.). It passed eventually to the duke of Chandos, who here built the grandiose mansion known as Canons (q.v.) and rebuilt, in 1715-20, the body of the church of S. Lawrence, of which Handel was organist, 1718-21. In the churchyard is the grave of William Powell (d. 1780), the "harmonious blacksmith," who was parish clerk in Handel's time.

WHITCHURCH. Tinplate and ironworking centre of Glamorganshire, Wales. It is $\frac{1}{2}$ m. N. of Llandaff, and stands on the site of an ancient Roman camp. Pop. 9,100.

WHITCHURCH. Urban dist. and market town of Shropshire. It is 19 m. N. of Shrewsbury on the border of Cheshire, on the L.M.S.

and G.W. Rlys. The church of S. Alkmund, rebuilt in 1713, contains the tomb of John Talbot, 1st earl of Shrewsbury (1388-1453). The principal industries are brewing and cheese making. Market day, Friday. Pop. 5,656.

WHITE, SIR GEORGE STUART (1835-1912). British soldier. Born in co. Antrim and educated at Sandhurst, he first saw active service during the Indian Mutiny in 1857. Afterwards he took part in the second Afghan War, 1878-80, in which he won the Victoria Cross, in the Nile Expedition, 1884-85, and in the Burmese War, 1885-87. In 1893 he became commander-in-chief in India. In the S. African War he made a memorable defence of Ladysmith until relieved by Buller on March 1, 1900. He was governor of Gibraltar, 1900-4. In 1903 he was made a field-marshal, and he died June 24, 1912.



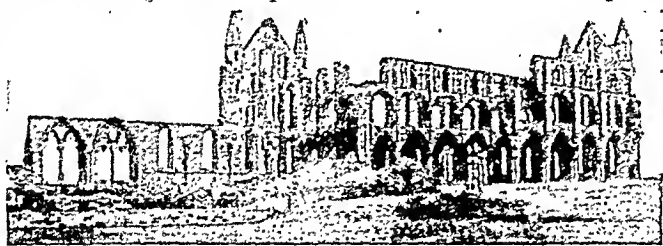
Sir G. S. White,
British soldier

WHITE, GILBERT (1720-93). British naturalist. Born at Selborne, Hampshire, July 18, 1720, he held curacies at Selborne and elsewhere, and devoted himself to the study of the natural history and antiquities of his native parish. He was little known until, in 1789, he published his letters to Pennant and Barrington in the form of a volume, *The Natural History and Antiquities of Selborne*. White died June 26, 1793.



H. Kirke White
British poet
After Hoppner

WHITE, HENRY KIRKE (1785-1806). British poet. Born in Nottingham, March 21, 1785, he published in 1803 a volume of poems



Whitby, Yorkshire. Ruins of the ancient Benedictine abbey, from the south
Valentine

entitled *Clifton Grove*, which won the praise of Southey. Deceiving to take orders, White proceeded to S. John's College, Cambridge, where the promise of a brilliant career was cut short by his death from consumption, Oct. 19, 1806. His hymn *Off in Danger, Off in Woe*, is well known.

WHITE, JOSEPH BLANCO (1775-1841). British author. Born at Seville of an Irish family, July 11, 1775, he was ordained a priest in 1800. Gravitating towards free thought, he came to England in 1810, and finally, under the influence of Dr. Martineau, embraced Unitarianism. He is best remembered by his fine sonnet on *Night and Death*. His works include *Second Travels of an Irish Gentleman in Search of Religion*, 1833. He died May 20, 1841.

White Ant. Popular name for the termite (q.v.).

WHITE ARUM, ARUM LILY, OR TRUMPET LILY (*Richardia africana*). Perennial marsh herb of the order Araceae, native of South Africa. It has a thick rootstock from which all the large arrow-shaped leaves arise on long stalks. The small yellow flowers are crowded round a spadix as in wake rolin, surrounded by the lower part of the large pure white spathe. See *Wake Robin*.

WHITEBAIT. Young of herrings and sprats, a table delicacy. The fishery is carried on about river estuaries—notably that of the Thames—and usually lasts from March till August. The early catches consist almost entirely of young sprats, herring fry appearing later in the season.

WHITE BEAM OR CHESSE APPLE (*Pyrus aria*). Small tree of the order Rosaceae, a native of Europe, N. and W. Asia, and N. Africa. The trunk has smooth bark, which remains without longitudinal fissures until maturity. The thick leaves are very variable, broad oval or lobed with toothed edges. The white flowers are in flat clusters, and the fruits are as big as holly berries. The wood is hard and fine-grained.

WHITEBOY. Term applied to Irish desperadoes who came into prominence during the agricultural depression which set in during the latter half of the 18th century in Ireland.

They were particularly numerous in Tipperary and Limerick about 1765, in Munster in 1786, and then were scarcely heard of until 1821-23, when there was a reemergence of crime. Their name is perpetuated in enactments made between 1775 and 1831, giving powers for the suppression of dangerous associations in Ireland.

WHITECHAPEL. Dist. of London. Part of the met. bor. of Stepney (q.v.), it lies E. of Aldgate. The old parish church of S. Mary has been rebuilt. Adjoining S. Jude's, associated with the work of Canon Barnett (q.v.), and containing a mosaic by G. F. Watts, is Toynbee Hall (q.v.). In the High Street is Whitechapel Art Gallery, 1901, adjoining which are a free library and museum. In the Whitechapel Road is the great London Hospital, founded in 1759, with accommodation for nearly 1,000 in-patients. The district is largely a Jewish quarter. See London.

WHITE CITY. THE London exhibition. Founded in 1908 by Imre Kiralfy at Shepherd's Bush, it was utilised for a number of important exhibitions, as the Franco-British, 1908; Empire, etc. The White City was taken over by the government in the Great War and used to billet troops, for munitions, etc. The stadium, erected for the Olympic Games of 1908, is now used for dog racing.

WHITEFIELD. Urban dist. of Lancashire. Also known as Stand, it is $\frac{5}{2}$ m. N. of Manchester and adjacent to Prestwich, with a station on the L.M.S. Rly. It is in an industrial area. Pop. 7,030.

WHITEFIELD, GEORGE (1714-70). English preacher. Born at Gloucester, Dec. 16, 1714, he was educated at Pembroke College,



White Arum. Spadix of flowers surrounded by spathe. Left, unopened spathe

Oxford, where he became friendly with John and Charles Wesley, and in 1736 he was ordained in the Church of England. In 1737 he followed the Wesleys to Georgia, where he founded an orphanage, but he was soon in England again, and became widely known as a preacher.

On his return from another visit to America (1739-41) Whitefield's stern Calvinism led to a break with the Wesleys, and in 1741 a tabernacle was built for him in Moorfields, London. In 1748 he became chaplain to the countess of Huntingdon, and was provided with a centre in Tottenham Court Road, London, where the present Whitefield's Tabernacle stands. He died at Newburyport, Massachusetts, Sept. 30, 1770. The type of Methodism preached by



George Whitefield
British preacher

Whitefield developed into the Calvinistic Methodist Church. His many writings include a Journal. See Calvinistic Methodists; Huntingdon, Countess of; Methodism.

WHITEFISH. Popular name used chiefly in N. America for fishes of the genus *Coregonus* of the salmon family. They mostly occur in

large fresh-water lakes, but a few species are anadromous and migrate to the sea. They are found also in the cold and temperate parts of Europe and Asia, and three species occur in the British Isles. The vendace (*C. vandesius*), is found in Bassenthwaite and Windermere, Lochmaben, and the Solway. Its flavour suggests that of the smelt. The pollan (*C. pollan*) is known only from Lough Neagh and other Irish lakes, where it occurs in vast schools.

WHITE FLAG. Emblem exhibited by a belligerent who wishes to parley. The usual agent in intercourse of this kind is officially called a parlementaire; he is accompanied by a flag-bearer, an interpreter, and a trumpeter. In military circles the party is often called a flag of truce.

WHITEFRIARS. Dist. of London. It lies S. of Fleet Street (q.v.), between the Temple and New Bridge Street, and contains the City of London School, Sion College, S. Bride's Church, Guildhall School of Music, many printing works and newspaper offices, Metropolitan Asylums Board, and Reuters. A crypt of the Carmelite priory was discovered in Britton's Court. See Alsatia.

The Whitefriars Club is a London club, founded in 1868, for journalists and authors.



Whitehall, London, showing the War Office on the right and the portico of the Scottish office on the left

WHITEHALL. London thoroughfare. It connects Charing Cross with Parliament Street, S.W. On the E. side are the War Office, the banqueting hall built by Inigo Jones, from a window of which Charles I stepped out on to the scaffold, and the Royal United Service Institution and Museum; on the W. are the old Admiralty, the Horse Guards, government buildings, and Downing

Street. The Cenotaph stands in the roadway. Whitehall takes its name from the palace built by Henry VIII and destroyed by fire in 1698. Of a new palace contemplated by James I, only the banqueting hall was erected, 1622. See Cenotaph; Home Office; Horse Guards.

WHITEHAVEN. Borough, seaport, and market town of Cumberland. It is the centre of a coal and iron mining dist., 12 m. S.S.W. of Maryport, on the L.M.S. Rly. Coal, iron, stone, and lime are exported. Some of the mines run beneath the sea. The principal manufactures are bricks, tiles, drain pipes, and cabinet ware. Paul Jones landed here in 1778. The town was bombarded by the Germans in 1915. Market day, Thurs. Pop. 19,536.

WHITEHEAD, ROBERT (1823-1905) British inventor. Born at Bolton-le-Moors, Lancashire, Jan. 3, 1823, and apprenticed to a Manchester engineering firm, he went in 1844 to Marscilles and in 1847 to Milan, where he invented improvements in silk weaving machinery. In 1856 he settled in Fiume as the



Whitefish. The pollan, a small fish found only in the Irish lakes

designer of engines for warships, and in 1866 he brought out the invention which made him famous, the Whitehead torpedo. He died Nov. 14, 1905. See Torpedo.

WHITE HELLEBORE (*Veratrum album*). Perennial herb of the order Liliaceae. A native of Europe and Siberia, it has a thick, creeping root-stock that yields a poison, protoveratrine. The lower leaves are oblong, the upper ones progressively narrower. The whitish flowers are clustered around the upper part of the downy stem.

WHITE HORSE. Design of a horse formed by removing the turf from chalk downs. The most famous are at Uffington, Berks, 355 ft. long; and at Bratton, Wilts, 180 ft. There are later imitations elsewhere.

The Vale of the White Horse is a district of Berkshire, England, so called because on one of its hills, White Horse Hill (856 ft.), is the figure mentioned above. It is supposed to have been cut in the turf by early Britons, or by Alfred, to celebrate his victory over the Danes in 871.

WHITE HOUSE, THE. Official residence, in Washington (q.v.), of the president of the U.S.A. It is in English Renaissance style, of freestone, painted white. Its foundation stone was laid by George Washington, and it was first occupied, in 1800, by John Adams.

WHITELADIES. Ruined nunnery in Worcestershire, England. It is near Shifnal and was founded towards the close of the 12th century by the Cistercians. It was called Whiteladies to distinguish it from the Dominican convent in Staffordshire called Blackladies.

WHITE LEAD. Hydrated basic carbonate of lead. It is largely used in the manufacture of paints. White lead is a soft, heavy amorphous powder, and is mixed with oil for use. Pure white lead is expensive, and a large part of that in use is either heavily adulterated or consists of sublimed white lead, a sulphate of the metal which has the advantage of being non-poisonous. Barium sulphate and chalk are the two chief adulterants

WHITELEG (*Phlegmasia dolens*). Disease occurring during pregnancy or shortly after delivery. It is characterised by pain, swelling, hardness, and whiteness of the surface of one or both legs. It is due to obstruction of the veins and lymphatic vessels, and probably results from septic absorption or blood-poisoning. Treatment consists in keeping the leg absolutely at rest in an elevated position.

White Rot. Alternative name for the marsh pennywort (*Hydrocotyle vulgaris*). See Pennywort.

WHITE SEA (Russ. Bieloye More). Part of the Arctic Ocean. It lies between Cape Kanin, the most N. point of the Kanin peninsula, and the peninsula of Kola, and is 330 m. long and 150 wide. It is icebound from September to June. Salmon, herring, and a kind of cod are caught. The chief port is Archangel (q.v.). There is connexion with the Black and Caspian Seas by a system of canals.

White Slave Traffic. Popular term for the criminal practice of prostitution (q.v.).

WHITETHROAT. Migratory bird, of which two species occur in Britain. The greater whitethroat (*Sylvia cinerea*) is common everywhere in the country, and has reddish brown plumage on the upper parts, with pinkish white below. It is generally found in thickets and hedges, and is often known as the nettle creeper. The lesser whitethroat (*S. curruca*) is slightly smaller, and has a grey tinge in its plumage. It is rare in England and Scotland, and is absent from Ireland.

WHITGIFT, JOHN (c. 1530-1604). English prelate. Son of a Grimsby merchant, he took orders at Cambridge in 1560 and held a number of offices, including that of vice-chancellor. Bishop of Worcester, 1577-83, he was archbishop of Canterbury, 1583-1604, enjoying the favour and support of Elizabeth. Fearless, incorruptible, personally pious, full of reforming zeal, and doctrinally Puritanic, he opposed the Calvinists and Presbyterians, and was a devoted Churchman. He erected and endowed a school and almshouses bearing his name at Croydon, and died at Lambeth, Feb. 29, 1604. See Croydon.

WHITHORN. Burgh and seaport of Wigtownshire, Scotland. On the Irish Channel, 11 m. S. of Wigtown, on the L.M.S. Rly., it is one of the most ancient burghs in Scotland, having been created a royal burgh by Robert I. S. Ninian is supposed to have built the first stone church in Britain either here or on the Isle of Whithorn, some 3 m. distant. The ruined priory church, founded in the 12th century on the site of the chancel of an older church, was used as the parish church until 1822. Pop. 1,033.

WHITING (*Gadus merlangus*). Fish belonging to the cod family. Very nearly related to the haddock. It may be distinguished by the absence of the chin barbel and of the black patch above the pectoral fin. It usually weighs rather less than 2 lb., and is much in demand for the table. It occurs in shoals, usually about sandy shores, and feeds chiefly on the fry of other fish. See Point.



Whitethroat
Greater species found in hedgerows



White Hellebore,
cluster of flowers



John Whitgift,
English prelate



Whiting. British edible fish, valued for the delicacy of its flesh

WHITLEY, JOHN HENRY (b 1866) British politician. Born in Halifax, he became in 1900 Liberal M.P. for that town. Junior lord of the treasury and a government whip, 1907-10, he was deputy-speaker and chairman of committees, 1911-21, when he succeeded J. W. Lowther as speaker. He resigned in 1928, when he declined the customary honour of a peerage. In 1930 Whitley was appointed chairman of the Broadcasting Corporation.

Whitley Council is the popular name given to the joint industrial councils set up in Great Britain to deal with trade disputes, J. H. Whitley having presided over the committee appointed in 1917 to consider the relations between employers and employed. The report of this committee was issued in five parts in 1917-19 and is known as the Whitley Report.

WHITLEY BAY. Watering place of Northumberland, part of the urban dist. of Whitley and Monkseaton. It is on the E coast, 2 m. N. of Tynemouth, with a station on the L.N.E. Rly. Pop. 27,000.

WHITLOW. Inflammation and suppuration of the terminal phalanx of the finger, due to infection by a micro-organism. Treatment consists in applying hot fomentations of boracic acid, and dressing the inflamed surface with dilute nitrate of mercury ointment.

WHITMAN, WALT (1819-92) American poet. Of English and Dutch descent, he was born at West Hills, Long Island, New York May 31, 1819, and worked at carpentry, building, printing, teaching, and journalism. He served as an army nurse through the Civil War, wrecking his robust constitution thereby. He then became a government clerk, and after a paralytic stroke in 1873 lived in comparative poverty at Camden, New Jersey, where he died March 26, 1892.

Whitman's chief work, *Leaves of Grass*, first appeared as a slender volume, 1855, but the final revised edition, 1881, incorporated most of his poetry. The irregular, unrhymed lines in which most of it is written are often uncouth, but at their best have a noble music and cadence of their own. Contemptuous of tradition, Whitman regarded himself as the prophet of America, which he believed would give the world a free society existing for the mass production of great personalities. His meditations on death (*Drum-taps*, 1865; and *Passage to India*, 1870) include some of his finest work.

WHITNEY, WILLIAM DWIGHT (1827-94). American philologist and Sanskrit scholar. Born at Northampton, Mass., Feb. 9, 1827, he studied Sanskrit at Yale, Berlin, and Tübingen, and in 1854 was appointed professor of Sanskrit at Yale. His works include *Language and the Study of Language*; *Life and Growth of Language*. He superintended the publication of the great *Century Dictionary*, and helped to revise Webster's Dictionary. He died June 7, 1894. See Webster, N.

WHITSTABLE. Seaport, watering place, and urban dist. of Kent. Situated 6 m. from Canterbury on the Southern Rly., it has a small harbour and carries on a coasting trade, but is noted chiefly for oysters. Pop. 13,000.

WHITSUNDAY (A.-S. *hwita Sunnandæg*, White Sunday). Name given in the English Church calendar to the festival which com-

memorates the gift of the Holy Ghost to the disciples (Acts 2). Observed in the Christian Church from very early times, it is the Christian Pentecost, as Easter is the Christian Passover, and is regarded as celebrating the ingathering of the first-fruits of the spiritual harvest. The name is usually derived from the white garments or ebriosis worn on this day by the newly baptized.

WHITTIER, JOHN GREENLEAF (1807-92). American poet. He was born at Haverhill, Massachusetts, Dec. 17, 1807, the son of a Quaker farmer. Whittier's earliest work for the anti-slavery movement was done as a journalist between 1828 and 1832. In 1833 he wrote *Justice and Expediency*, an anti-slavery manifesto, and attended at Philadelphia the first meeting of the American Anti-Slavery Society. In 1835 and 1836 he represented his district in the Massachusetts legislature. From 1847-60 he contributed leaders and poems to *The National Era* of Washington, and from 1857 to *The Atlantic Monthly*. He died at Hampton Falls, New Hampshire, Sept. 7, 1892.



J. G. Whittier,
American poet

Whittier will be remembered as a poet by some of his anti-slavery lyrics, by the genuine charm of such ballads as *Maud Muller* and *Barbara Frietchie*, and by his vivid picture of New England rural life in *Snow-Bound*.

WHITTINGTON. Iron and steel centre of Derbyshire. On the Rother, 2½ m. N. of Chesterfield, it has a station on the L.M.S. Rly. In the parish is Revolution House, where the earls of Devonshire and Danby and John Darcy met in 1688, to arrange the invitation to William of Orange. Pop. 11,617.

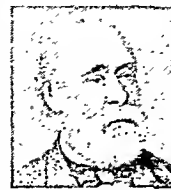
WHITTINGTON, RICHARD (d. 1423). Lord Mayor of London. The son of Sir William Whittington, a Gloucestershire knight, he became a mercer with a prosperous business in London. After holding many municipal offices he was appointed lord mayor by the king, June, 1397, being re-elected the following year, and in 1406 and 1419. He died in early March, 1423. The popular tale woven about his name appears to have originated in 1605.

WHITTLESEA OR WHITTLESEY. Market town and urban dist. of the Isle of Ely. It is 5 m. from Peterborough on the L.N.E. Rly. The land around is drained by artificial channels. Market day, Fri. Pop. 7,623.

WHITWOOD. Urban dist. and colliery centre of Yorkshire (W.R.). It is on the Calder, 4½ m. N.W. of Pontefract, and is served by the L.M.S. Rly. Pop. 6,000.

WHITWORTH. Urban dist. of Lancashire. It is 3 m. N. of Rochdale on the L.M.S. Rly. The principal industries are mining and quarrying. Pop. 8,782.

WHITWORTH, SIR JOSEPH (1803-87). British engineer. Born Dec. 21, 1803, at Stockport, he set up in business in Manchester in 1833 as a tool maker. He invented a large number of improvements in the manufacture of machine tools, and by micrometric methods obtained absolutely plane metal surfaces which made him famous. He standardised the measurements of screw threads and gauges, one of the greatest steps in mechanical progress. In 1869 he was made a baronet. He endowed 30 scholarships in mechanics, and left nearly £600,000 for education and charitable purposes on his death, Jan. 22, 1887. The engineering firm he founded in Man-



Sir J. Whitworth,
British engineer

chester was amalgamated with that of Sir William Armstrong at Elswick in 1897.

WHOOPING COUGH OR PERTUSSIS. Acute infectious disease characterised by catarrh of the air-passages and a spasmodic cough or "whoop." The organism responsible has not been identified with certainty. Infants and children are specially liable to attack. The early symptoms are those of an ordinary cold. In about a fortnight the characteristic "whoop" begins. Bleeding from the nose is common. This stage may continue for from four weeks to two or three months.

The medical treatment of whooping cough is limited to relieving the severity of the cough by sedative drugs. Whooping cough is rarely fatal among children.

WHORL. In botany, a cluster of leaves or flowers that grow in a circle around the stem. Plants of the order Labiatae are examples of this method of growth. The term is also employed in zoology to describe the volutions of the spire of a univalve shell.

Whortleberry. Alternative name for the shrub better known as bilberry (q.v.).

WHYMPER, EDWARD (1840-1911). British artist and mountaineer. Born in London, April 27, 1840, and educated as a wood engraver, he went in 1860 to the Alps to make sketches of mountain scenery. There he gained a reputation as an intrepid mountaineer, and in 1865 was the first to ascend the Matterhorn (q.v.). In his visits to Greenland, 1867 and 1872, he made valuable collections of fossils, doing the same during his visit to the Andes of Ecuador, 1879-80. In the latter year he made two ascents of Chimborazo. His last expedition of note was to the mountains of the Great Divide, Canada, 1901-5. He died Sept. 16, 1911. He wrote and lectured on mountaineering.



Edward Whymper,
British traveller

WHYTE, ALEXANDER (1837-1921). Scottish divine and author. Born at Kirriemuir, Jan. 13, 1837, the son of a shoemaker, he studied for the Free Church ministry at New College, Edinburgh, and became minister at Free St. John's, Glasgow, in 1866. He removed to Free St. George's, Edinburgh, in 1870, as colleague to Dr. Candlish, and on the latter's death, in 1873, became sole minister. He was appointed principal of New College in 1909, resigning in 1918. He died Jan. 6, 1921. Whyte was the author of numerous biographical and critical works.

His son, Sir Alexander Frederic Whyte (b. 1883), was a Liberal M.P., 1910-18. From 1920-25 he was president of the Indian legislative assembly, and in 1929 he became political adviser to the government of China.

WHYTE-MELVILLE, GEORGE JOHN (1821-78). British novelist. Born in Fifeshire, June 19, 1821, he entered the Coldstream Guards, retiring with the rank of major in 1849. In the Crimean War he served as an officer in the Turkish cavalry. At his home at Tetbury, Gloucestershire, he wrote many novels dealing largely with the hunting field and country life. Among the best known of these are *Digby*



G. J. Whyte-Melville,
British novelist



Alexander Whyte,
Scottish divine

Grand, 1853; Holmby House, 1860; Market Harborough, 1861; and The Gladiators, 1863. He met his death from a fall in the hunting field, Dec. 5, 1878.

WICK. Burgh, seaport, and county town of Caithness, Scotland. One of the chief centres of the Scottish herring fishery, it is on the E. coast, 20 m. S.E. of Thurso, on the L.M.S. Rly. In the herring season, when workers come in from the neighbouring district to gut and cure the herrings, Wick is one of the busiest fishing ports of Britain. In the vicinity are the ruins of Wick Castle, popularly known as the Old Man of Wick. Pop. 8,115.

WICKEN FEN. Nature reserve in Cambridgeshire. An area of 640 acres, it was acquired in 1928 by the National Trust. It is a haunt of the swallow-tail butterfly. The village is 7 miles from Ely, and has a fine old church.

WICKLOW. Eastern maritime co. of the Irish Free State, in the prov. of Leinster. It has about 36 m. of coastline, obstructed by sandbanks; and its deep glens, valleys, and lakes have won it the name of the garden of Ireland. The vales of Glendalough and Avoca are specially beautiful. From N.E. to S.W. run the Wicklow Mts (Lugnaquilla, 3,040 ft.). Sheep are pastured, and lead, copper, and other minerals are worked. The G.S. Rlys. serve the co. The chief towns are Wicklow, the county town, Bray, and Arklow. The area is 781 sq. m. Pop. 57,591.



Wicklow. Map of the beautiful Leinster county

WICKLOW. Co. town and seaside resort of co. Wicklow, Irish Free State. It lies on a hillside overlooking the mouth of the Vartry river, 28½ m. S.E. of Dublin. Here are remains of Black Castle, rebuilt in the 14th century, and of a Franciscan friary. There are chemical works. Pop. 3,025.

The earldom of Wicklow is an Irish peerage held by the Howard family since 1793. The family seat is at Arklow, and the eldest son bears the courtesy title of Lord Clonmore.

WIDECOMBE-IN-THE-MOOR. Village of Devonshire. It is 5 m. from Ashburton, on the E. border of Dartmoor, and is famous for its church, known as the cathedral of the moor, and for its connexion with the Devon song of Widecombe Fair. Pop. 673.

WIDGEON (Mareca penelopē). British wild duck. It is about 18 ins. long; and the plumage is white on the forehead, chestnut speckled with green on the cheeks and neck, greyish on the back, brown on the wings and tail, and grey beneath; the beak is blue. It occurs in winter about the shores and on inland waters, and breeds in a few localities in Scotland and Ireland.

WIDNES. Borough of Lancashire. On the Mersey, 12 m. S.E. of Liverpool, it is served by the L.M.S. Rly. and the Cheshire Lines Rly., and is connected with Runcorn by a transporter bridge across the river. The town is the chief producer of alkali in Britain. There are also foundries and copper smelting works. Pop. 38,879. See Runcorn.

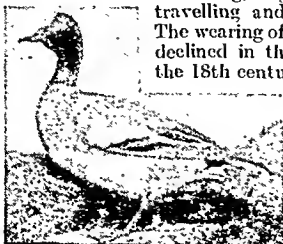
WIDOW. One who has lost her husband. In 1925, as part of an extension of the scheme of national health insurance, the Government introduced a scheme of pensions for widows and orphans in Great Britain. The widow of an insured man received 10s. a week for herself, 5s. for the first child and 3s. for each other child under 14. In 1929 the scope of the measure was extended. See Pension.

WIELAND, CHRISTOPH MARTIN (1733-1813). German poet. Born Sept. 5, 1733, at Oberholzheim, Württemberg, he studied law at Tübingen, but later devoted himself to literary work. Wieland translated 22 plays of Shakespeare into German, 1762-66. In 1766-67 he wrote a novel, *Agathon*. In 1769 he became a professor at Erfurt, and three years later tutor to the sons of the grand duchess of Saxe-Weimar at Weimar.

Wieland was the first of the literary group that was to render Weimar famous. He started *Der Teutsche Mercur* (The German Mercury), 1773, a literary periodical which had considerable influence, became the friend of Goethe and Herder, and wrote his best known work, the epic *Oberon*, 1780, besides many further stories and poems. He died at Weimar, Jan. 20, 1813.

WIESBADEN. Town and watering place of Prussia. It is 6 m. from Mainz, in a hollow of the Taunus, 3 m. from the Rhine amid beautiful scenery. The buildings include the Gothic market church, the Kurhaus, the court theatre, the palace, until 1918 a residence of the German emperor and before 1866 of the dukes of Nassau, modern town hall and museum picture gallery and library. There are some 30 hot springs. Pop. 151,961.

WIG (shortened form of periwig, from Fr. perruque). Artificial head of hair. Wigs were worn by Persians, Greeks, and Romans, and were commonly used by actors. Gentlemen's wigs became popular in France under Louis XII, who wore them to conceal his baldness. Under Louis XIV they flowed over the shoulders in curls tied with ribbons. In England after 1660 they gradually became general among gentlemen, the full-bottomed wig being later replaced by the smaller peruke or tie-wig, originally used in travelling and campaigning. The wearing of wigs gradually declined in the latter half of the 18th century.



Widgeon. Male bird of the species of British wild duck



Wig. Principal fashions in men's wigs. 1. Full-bottomed, 17th century. 2. Early Georgian, c. 1730. 3. Bob wig, c. 1750. 4. Clerical wig, c. 1850. 5. English judge's and 6 barrister's wigs. See below

WIGAN. County borough and market town of Lancashire. It is 18 m. N.W. of Manchester, on the L.M.S. Rly., and is the centre of a rich coal field. There are cotton mills and metal works. The church has some old and interesting features. Market day, Fri. Pop. 91,200.

WIGHT, ISLE OF. Island off the S. coast of England. Separated from the mainland by the Solent and Spithead, it covers 147 sq. m. It is included in the geographical county of Hampshire, but has its own county council. Newport on the Medina, is the capital.

The island is noted for its mild climate, and round the coast are watering places, Shanklin, Sandown, Ventnor, Ryde, Cowes, and Freshwater. Stretching W from Ventnor is the Undercliff. Chineses, ravines running into the land add to the beauty of the coast. Chalk downs traverse the island from E. to W., culminating in St. Boniface Down, 787 ft.

Roman remains have been found at Carisbrooke and elsewhere, and there is a Roman villa at Brading. Carisbrooke is noted for its castle. At Quarr Abbey are remains of a Benedictine house. The island is served by the Southern Rly. A

service of steamers is maintained between Portsmouth and Ryde, Southampton and Cowes, and Lynington and Yarmouth. Agriculture is the chief industry, and there is some fishing. In 1928 a scheme for supplying the whole island with electricity was launched. Pop. 94,666. See Carisbrooke; Cowes; Hampshire; Osborne House.

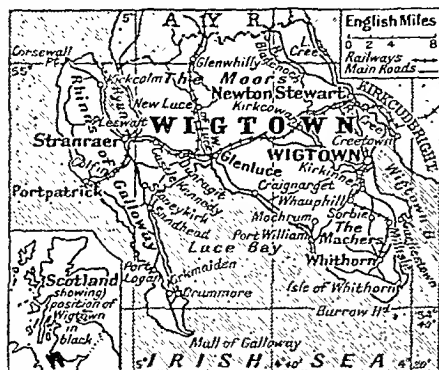
WIGMORE. Village of Herefordshire. It is 8 m. S.W. of Ludlow, and contains the ruins of a 12-14th century castle and vestiges of an Augustinian priory. Pop. 400.

WIGSTON MAGNA. Urban dist. of Leicestershire. It is 4 m. S. of Leicester, on the L.M.S. Rly. From its two fine church steeples it is sometimes called Wigston Two Steeples. Pop. 10,000.

WIGTON. Urban dist. and market town of Cumberland. It is 11 m. S.W. of Carlisle, on the L.M.S. Rly. The town has a trade in timber, and breweries and tanneries. Market day, Tues. Pop. 3,656.

WIGTOWN. Burgh, seaport, and co. town of Wigtownshire, Scotland. On Wigtown Bay, 8 m. S. of Newton Stewart, it is served by the L.M.S. Rly. In the parish churchyard are the graves of the Wigtown Martyrs, a young girl and an old woman who, for refusing to take the oath of abjuration, were tied to a stake at the mouth of the little river Bladenoch and left to drown. Pop. 1,299.

WIGTOWNSHIRE. County of Scotland. With an area of 487 sq. m., it lies in the extreme S.W. forming part of the district of Galloway. The coast is indented by Loch Ryan, Luce Bay, and Wigtown Bay. The double peninsula on the W is known as the Rhinns of Galloway: the S.E. projection as the Machers, and the upper district as the Moors. The coast is bold and rocky, the headlands including the Mull of Galloway. The chief industries are the rearing of sheep and cattle, and the growing of oats and other crops. Dairy farming is carried on. The county is served by the L.M.S. Rly. Wigtown



Wigtownshire. Map of the Galloway county

is the county town, others including Portpatrick, Stranraer, and Newton Stewart. Pop. 30,783. See Galloway.

WIGWAM. Name in popular use for various types of American Indian dwelling. It denotes primarily the permanent Algonquian hut, conical or beehive-shaped. See *illus.* below.

WILBERFORCE, SAMUEL (1805-73). British prelate. Born at Clapham, Sept. 7, 1805, a son of William Wilberforce, he was ordained in 1828. In 1830 he was made rector of Brightstone, Isle of Wight, and in 1840 rector of Alverstoke. In 1845 he became dean of Westminster, but in the same year was chosen bishop of Oxford. Translated to Winchester in 1869, he was accidentally killed near Dorking, July 19, 1873.

Samuel Wilberforce.
British prelate

A speaker of great eloquence and remarkable for his ready wit, he excelled in reconciling or attempting to reconcile men of diverse opinions; hence his nickname of Soapy Sam.

WILBERFORCE, WILLIAM (1759-1833). British reformer. Born at Hull, Aug. 24, 1759, of an old Yorkshire family, he became M.P. for Hull in 1780, and was soon prominent both in society and in the House. In 1784 he was returned as M.P. for Yorkshire, and later represented Bramber. In 1788 he threw his whole energy into the cause of liberating the slaves. With Clarkson and others he carried on a vigorous agitation, and saw some of the fruits of his labours in the Act of the slave trade, and that

William Wilberforce
British reformer
After Lawrence

1807 which ended for emancipating the slaves. He died in London, July 29, 1833.

WILCOX, ELLA WHEELER (1855-1919). American poet and essayist. She had a talent for writing the acceptable commonplace. Her output of verse was enormous, and her volumes extremely popular in Britain no less than in the U.S.A. She died at Shortbeach, Conn., Oct. 30, 1919.

WILD, SIR ERNEST EDWARD (b. 1869). British lawyer. Born Jan. 1, 1869, at Norwich, in 1893 he became a barrister and built up a reputation as an advocate, especially in criminal cases. He was returned in 1918 as Unionist M.P.

for the Upton division of West Ham, and in 1921-22 actively supported the Coalition government. Made K.C. in 1912, he was knighted in 1918. In 1922 he was appointed recorder of London.

WILD, JONATHAN (c. 1662-1725). English criminal. He became one of the most notorious receivers of stolen goods in London, and blackmailed all those who came to him. He organized one of the largest bands of thieves, pickpockets, burglars, etc., ever known. A riot which he provoked was the beginning of his downfall. He was found guilty of being concerned in stealing lace, sentenced to death, and hanged at Tyburn, May 24, 1725. Fielding wrote a satire, *History of the Life of the late Mr. Jonathan Wild*, 1743.

WILDE, JAMES OR JIMMY (b. 1892). British boxer. Born at Tylorstown, Wales, he worked in the coal mines. A skilled boxer, he soon came to the front as a fly-weight. On Feb. 14, 1916, he defeated Joe Symonds in 12 rounds for the Lonsdale belt for fly-weights, and the following year retained the title in a contest with Taney Lee, whom he beat in 11 rounds. On March 12, 1917, he won the belt outright, and retained the title until 1924.

Oscar Wilde,
Irish author
Downey

WILDE, OSCAR FINCILL O'FLAHERTY WILLS (1856-1900). Irish author and dramatist. Born in Dublin, Oct. 15, 1856, he was educated at Trinity College, Dublin, and at Magdalen College, Oxford, where he won the Newdigate with his poem, *Ravenna*. A man of brilliant wit and exuberant fancy, he founded the aesthetic cult satirised in Gilbert and Sullivan's opera, *Patience*, 1881, and R. S. Hichens' novel, *The Green Carnation*, 1894; and the theories of which he set forth in *Intentions*, 1891. In 1895 he was sentenced to two years' hard labour under the Criminal Law Amendment Act, and died amid squalid conditions in Paris, Nov. 30, 1900.

His chief works include a novel, *The Picture of Dorian Gray*, 1891; five plays, *Lady Windermere's Fan*, 1892; *A Woman of No Importance*, 1893; *Salomé* (in French), 1894; *An Ideal Husband*, 1899; and *The Importance of Being Earnest*, 1899; *The Ballad of Reading Gaol*, published in 1898 as by C. 3. 3.; and *De Profundis*, 1905.

WILDER, THORNTON NIVEN (b. 1897). American novelist. Born at Madison, Wisconsin, April 17, 1897, he passed through Yale and Princeton universities and was for five years a schoolmaster in New Jersey. In 1926 he published a novel, *The Cabala*, and in 1927 *The Bridge of San Luis Rey*, which gave him an international reputation.

WILDERNESS. Any wild and desolate region. The term is specially applied to a district in N.E. Virginia, extending along the S. bank of the Rapidan from Mine Run to Chancellorsville. Famous in the American Civil War, it was here that the battle of Chancellorsville was fought in May, 1863, and a year later Grant conducted a campaign known as the Wilderness campaign against Lee.

Wigwam of the Blackfeet Indians,
in the Glacier National Park, Montana.
See above

WILHELMINA (b. 1880). Queen of the Netherlands. Daughter of William III, of the family of Orange-Nassau, she was born at The Hague, Aug. 31, 1880, and succeeded to the throne in Nov., 1890. For eight years her mother acted as

regent, and Wilhelmina was crowned Sept. 6, 1898. In Feb., 1901, she married Henry, duke of Mecklenburg-Schwerin, by whom she had a daughter, Juliana (h. 1909).

WILHELMSHAVEN. Seaport of Germany. It stands on Jade Bay, an opening of the North Sea, 41 m. from Bremen. The port was founded on land purchased in 1853 by Prussia from Oldenburg and was named after King William I. The harbour was opened in 1869 and became Germany's chief naval base on the North Sea. Until 1918 it was strongly fortified. Pop. 30,000.

WILKES, JOHN (1727-97). British politician. Born at Clerkenwell, he became M.P. for Aylesbury, 1757. He founded *The North Briton*, June 5, 1762; and was committed to the Tower for libel in No. 45 of that paper, in which he had virulently attacked Bute and Bute's successor in the premiership. Released on the ground of privilege, he became a popular hero with the cry, *Wilkes and Liberty!* But the libel and publication of his *Essay on Woman* led later to his expulsion from the House of Commons, a sentence of 22 months' imprisonment, and a fine of £1,000, 1768. He was four times re-elected, as each time the House refused to let him take his seat. He was sheriff of London and Middlesex, 1771, lord mayor of London, 1774, M.P. for Middlesex, 1774-90, and city chamberlain, 1779-97. Wilkes died Dec. 26, 1797.

John Wilkes,
British politician

WILKIE, SIR DAVID (1785-1841) Scottish painter. Born at Cults, Fifeshire, Nov. 18, 1785, he began to study art at the Trustees' Academy, Edinburgh, and later moved to London and entered the R.A. schools. His success was rapid and great. *The Village Politicians* was followed by *The Blind Fiddler*, 1807; *The Rent Day*, 1807; *Blind Man's Buff*, 1813; *The Letter of Introduction* 1814; *Distraint for Rent*, 1816; *The Penny Wedding*, 1819; and *Reading a Will*, 1821. He was elected A.R.A. in 1809, and R.A. in 1811. He died June 1, 1841. The most popular of Wilkie's many works are those of homely Scottish life.

WILKINS, SIR GEORGE HUBERT (b. 1888). Australian explorer. Born Oct. 31, 1888, he was photographic correspondent with the Turkish troops in the Balkan War, 1912-13, and in 1913-17 was second in command of Stefansson's Canadian Arctic Expedition. He was second in command of the British Imperial Antarctic Expedition, 1920-21, naturalist with the Shackleton-Rowett Quest Expedition, 1921-23, and leader of the Wilkins Australia and Islands Expedition for the British Museum (Natural History), 1926-27. Later he commanded Arctic and Antarctic expeditions, flying over the North Pole in an aeroplane from Port Barrow in Alaska to Spitsbergen, in April, 1928. See *Antarctic Exploration*; *Arctic Exploration*; *Shackleton*; *Stefansson*.

WILL. In law, the legal instrument whereby a man declares what is to be done with his property after his death. By English law every will, except that of a sailor at sea, or a soldier or sailor on active service, must be in writing. It must be signed by the testator in the presence of two witnesses, both present at the same time. In Scotland, and most other countries, a will signed by the testator, and written entirely by him with his

own hand, is good without witnesses. A will made by a British subject abroad is valid in the United Kingdom if it is made according to English form (by an Englishman) or Scottish form (by a Scotsman). A will made abroad by a foreigner will not be recognized in England unless validly made according to the law of the country where it was executed. See Administration; Executor; Intestacy.

WILLARD EDWARD SMITH (1853-1915) British actor. Born Jan. 9, 1853, he won his earliest London successes as Spider in *The Silver King*, at *The Princess's*, 1882, and James Ralston in *Jim the Penman*, at *The Haymarket*, 1886. He was manager of the Shaftesbury Theatre, 1889-90, his season being memorable for his impersonation of Cyrus Blenkarn in H. A. Jones's drama *The Middleman*, and of Judah Llewellyn in *Judah*, by the same author. Willard died Nov. 9, 1915.

WILLENHALL. Urban dist. of Staffordshire. It is 3 m. E. of Wolverhampton, on the L.M.S. Rly. Its manufactures include locks, keys, and bolts. Pop. 19,665.

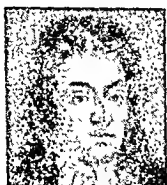
WILLESDEN. Urban dist. of Middlesex, and a N.W. suburb of London. The largest urban dist. in the country, it includes Brondesbury, Harlesden, Kensal Rise, and Cricklewood, and is an important junction of the L.M.S. Rly. The parish church contains remains of Norman work. Pop. 165,669.

WILLETT, WILLIAM (1857-1915). British builder and promoter of daylight saving. Born at Colchester, he founded the firm bearing his name, with headquarters at Sloane Square, London, S.W. Willett was, however, best known as the promoter of the idea of daylight saving. He died March 4, 1915. Pett's Wood, Chislehurst, has been acquired as a memorial to him. See Daylight Saving.

WILLIAM I (1027-87). King of England (1066-87), known as the Conqueror. He was the illegitimate son of Robert, duke of Normandy, called the Devil, by Arletta, daughter of a tanner of Falaise (q.v.). He obtained from Edward the Confessor and Harold Godwinson promises that he should succeed Edward on the throne of England. When Harold himself accepted the crown in Jan., 1066, in violation of an oath, William landed at Pevensey, and defeated him at the battle of Hastings, Oct. 14, 1066.

William was crowned in Westminster Abbey on Christmas Day, 1066. In 1068 insurrections in the N. and W. provided excuse for huge forfeitures, while stone castles, with royal garrisons, rose at strategic points all over the country. An insurrection in the N., supported by a fleet from Denmark in 1069, was ruthlessly quelled. After 1072 William spent most of his time in Normandy, dying at Rouen Sept. 9, 1087.

WILLIAM II (c. 1056-1100). King of England, called Rufus or the Red King. The second surviving son of William the Conqueror, he was nominated to the English succession by his father in priority to his elder brother, Robert, who succeeded to Normandy when he became king in 1087 the Norman barons revolted in favour of Robert, but were crushed by William, who received ready aid from the English. William proved himself an unscrupulous tyrant. He was killed by an arrow in the New Forest, Aug. 2, 1100.



William I
King of Great Britain
and Ireland
After Netscher

WILLIAM III (1650-1702). King of Great Britain and Ireland, and stadtholder of Holland. He was born at The Hague, Nov. 4, 1650, the son of William II, prince of Orange and stadtholder,

and Mary, daughter of Charles I. The Republicans secured ascendancy in the Netherlands, and the house of Orange was set aside, but on the sudden invasion of Holland by France in 1672, William was called to the office of stadtholder.

In 1688 the English invited William and Mary, the daughter of James II, whom he had married in 1677, to deliver them from the Stuarts, and England and Scotland offered their crowns to them jointly. William accepted, that he might add England to the coalition against France. Half his life was spent at the head of the armies in the Netherlands, where he rarely achieved a victory, but he held the coalition together until Louis was obliged to accept the peace of Ryswick in 1697. His last year was given to forming the Grand Alliance. He died March 8, 1702.



William IV. King
of Great Britain
and Ireland
From a miniature

secure its passage through the House of Lords. He died June 20, 1837.

WILLIAM I (1797-1888). German emperor and king of Prussia. He was born March 22, 1797, the second son of Frederick William III of Prussia, and was a soldier from his youth. He became regent during the illness of his brother, Frederick William IV, in 1858, and succeeded to the throne Jan. 2, 1861. From 1862 Bismarck virtually controlled the state, the king being his instrument in the complications which issued in the Franco-Prussian War and the proclamation of the king of Prussia as German emperor, Jan. 18, 1871. He married Augusta of Saxe-Weimar, and died March 9, 1888.

WILLIAM II (b. 1859). German emperor and king of Prussia, 1888-1918. Born in Berlin, Jan. 27, 1859, he was the elder son of Frederick, afterwards German emperor, and



William II.
Ex-German emperor and
King of Prussia

his wife Victoria, daughter of Queen Victoria. In June, 1888, William succeeded his father as king and emperor, and for 30 years was one of the foremost figures in Europe, especially after 1890, when he dismissed Bismarck and became himself the director of Germany's policy. Autocratic and of a restless and unbalanced temperament, he was nevertheless consistent in his efforts to give Germany a "place in the sun," to maintain her army, extend her colonial empire, foster her trade, and make her heard on all questions of international politics. He firmly believed that he ruled by divine right.

In July, 1914, convinced that he possessed an invincible army, the kaiser decided on war. During its course, as nominal commander-in-chief, he flitted from place to place in the battle areas, refused to read the signs pointing to Germany's downfall in the autumn of 1918, reluctantly abdicated on Nov. 9, and on

Nov. 10 fled into Holland, where the castle of Amerongen (q.v.) was granted for his residence. The treaty of peace declared the ex-kaiser a criminal, and arrangements were made for his trial in London. On Jan. 16, 1920, his extradition was formally demanded, but it was refused by the Dutch government and he continued to live in Holland. The ex-kaiser's defence of his career and policy was translated into English as *Comparative Historical Tabulations* from 1878 to the Outbreak of War in 1914. See Bismarck; Gernany; Hohenzollern; Versailles.

WILLIAM, PRINCE OF ORANGE (1533-84). Dutch soldier and statesman. Known as William the Silent, owing to his conduct when on diplomatic errands. A son of William, prince of Nassau, he was born at Dillenburg, April 25, 1533, and in 1544 inherited the title of prince of Orange. He was brought up in the Roman Catholic faith at the court of Charles V at Brussels. After 1555, when Philip II became ruler of the Netherlands, William took his stand among the nobles who protested against the tyranny of Alva, while about the same time his religious opinions became Calvinistic. When the revolt began in 1572 he was its leader, and acted as such until he was assassinated, July 10, 1584.

WILLIAM OF WYKEHAM (1324-1404). English prelate. Born at Wickham, near Fareham, Hants, he attracted the notice of Edward III, who in 1356 appointed him surveyor of his works at Windsor. From 1359-61 he held no fewer than 19 canonries and other ecclesiastical offices, culminating in the bishopric of Winchester and the lord chancellorship, both in 1367. Forced to resign the chancellorship in 1371, he was impeached on charges of misapplication of the revenues, and deprived of his emoluments. On the accession of Richard II 1377, Wykeham received a full pardon, was reinstated in his bishopric, and was again lord chancellor, 1380-91. He died Sept. 27, 1404. William of Wykeham will always be remembered as the founder of colleges at Winchester and Oxford. See Winchester College; Windsor Castle.

WILLIAMS, BRANSBY (b. 1870). British actor. Born Aug. 14, 1870, he made his name as an impersonator of popular actors. He appeared at the principal London music halls, where his studies of characters from Dickens, including Micawber, Peggotty, Uriah Heep, Bill Sikes, Pecksniff, Chadband, and Mrs. Gamp proved unfailingly popular. In 1922 he produced David Copperfield at Brixton, doubling the parts of Micawber and Peggotty.

WILLIAMS, SIR GEORGE (1821-1905). Founder of the Y.M.C.A. He was born at Dulverton, Oct. 11, 1821, and in 1841 became an assistant in the drapery house of Hitchcock & Co., London, of which he became head. He arranged prayer meetings among his fellow employees, and in 1844, with eleven other young men, founded the Young Men's Christian Association (q.v.), of which he became president in 1886. Knighted in 1894, he died Nov. 6, 1905.

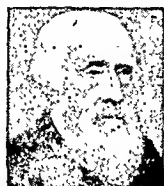
WILLIAMS, JOHN (1796-1839). British missionary. Born at Tottenham, June 20, 1796, he was sent by the L.M.S. in 1816 as a missionary to the Society Islands. Here and in the neighbouring islands he did excellent work. He was murdered by cannibals in Erromanga, Nov. 20, 1839.



William the Silent
After J. van Mierevelt



William I.
German Emperor



Sir George Williams,
Founder of Y.M.C.A.
Elliott & Fry

WILLIAMS, ROGER (c. 1600-84). English colonist and writer. Born probably in London, he took orders in the Church of England, but became a nonconformist and left England for America in 1631. Landing in Massachusetts, he became pastor of the church in the Puritan stronghold of Salem. In 1636 founded a settlement on Narragansett Bay, which he called Providence. The first Baptist church in America was established by him. He visited England in 1643 to obtain a charter for Rhode Island Colony, and again in 1651-54, when he became acquainted with Cromwell. From 1654-58 he was president of the colony.

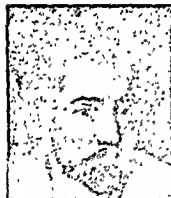
WILLINGDON, FREEMAN FREEMAN-THOMAS, 1ST VISCOUNT (b. 1866). British administrator. Born Sept. 12, 1866, he was A.D.C. to Lord Brassey when governor of Victoria, 1895. Liberal M.P. for Hastings, 1900-6, and for the Bodmin div. of Cornwall, 1906-10, he was a junior lord of the treasury, 1905-12, governor of Bombay, 1913-10, and of Madras 1919-24. Created a baron, 1910, he was promoted viscount, 1924. In 1926 he succeeded Viscount Byng as governor-general of Canada, and became Viceroy of India, 1931.



Viscount Willingdon,
British administrator
H. W. Barnett

WILLINGTON. Urban dist. of Durham. On the Wear, 4 m. N. of Bishop Auckland, it is the centre of a colliery dist., with a station on the L.N.E. Rly. Pop. 9,197.

WILLOUGHBY, SIR HUGH (c. 1500-54). English explorer. Son of Sir Henry Willoughby of Risley, he served in the Scottish war of 1544, when he was knighted. In 1553 he was dispatched in command of three vessels to find a north-east passage to India and Cathay. The ships were dispersed by a gale off the Norwegian coast, but Willoughby's and one of the other vessels made the harbour of Arzina, in Lapland, where they all perished of scurvy.



Sir Hugh Willoughby,
English explorer
Wollaton Hall

WILLOW (*Salix*). Genus of trees and shrubs of the order Salicaceae. They are chiefly natives of the N. temperate regions, and some attain to a height of 80 ft. One of the commonest species is the crack willow (*S. fragilis*), so called from the readiness with which the branches break from the stem. The dwarf or shrubby species of willows are known as osiers (q.v.). The wood of the willow is used for cricket bats, chairs and other articles. The weeping willow (*S. babylonica*), native of E. Asia, is so called on account of the drooping habit of its leaves. The willow of the Babylonian district is really a species of poplar.



Willow. Leaves and male catkins of *Salix fragilis*

WILLOW HERB, ROSEMARY OR FRENCH WILLOW (*Epilobium angustifolium*). Perennial herb of the order Onagraceae, native of Europe, N. and W. Asia, and America. It has unbranched stems 4 ft. high, with alternate lance-shaped leaves. The stems end in a long spray of rosy-purple flowers, each an inch across. The slender seed capsules are 3 or 4 ins. long, and the seeds are attached to a bundle of long silky hairs.

WILLOW PATTERN WARE. Class of the L.M.S. Rly., and is largely residential. The parish church of S. Bartholomew contains a fine rood screen and monuments. Pop. 8,286

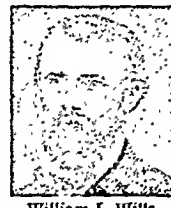
English chinaware printed with an elaborate design of Chinese origin. It was first produced about 1780 by Thomas Turner (1749-1809) at Caughley, Shropshire. The design, in blue on a white or bluish-white ground, represents a river with houses, gardens, a bridge, trees, human figures, and birds, and is supposed to illustrate the story of a mandarin's daughter who eloped with her father's secretary, the couple when pursued being transformed into a pair of doves. See Chinaware; Pottery



Willow Pattern Ware. Plate showing the story of the Chinese mandarin's daughter

WILLS. Name of a family famous in the tobacco trade and in the public life of Bristol. In the 18th century Henry Overton Wills (1761-1826) joined his father-in-law, William Day, in the business of tobacco manufacturers. This became later the firm of W. D. & H. O. Wills, its heads being the two sons of H. O. Wills the elder. W. D. Wills had a son, William Henry Wills (1830-1911), the first head of the Imperial Tobacco Co., formed in 1901. He was made a baronet in 1890 and Baron Winterstoke in 1906. He died Jan. 29, 1911, when his titles became extinct. In 1929 G. A. Wills was made Lord Dulverton.

WILLS, WILLIAM GORMAN (1828-91), British dramatist. Born at Kilmurry, he came to London, and attained some vogue as a portrait painter. He wrote a number of dramas, some of which still hold the stage. The best known are Charles I, 1872; Jane Shore, 1876; and A Royal Divorce, 1891. He was also the author of the song, I'll sing thee songs of Araby. He died Dec. 13, 1891.



William J. Wills,
Australian explorer

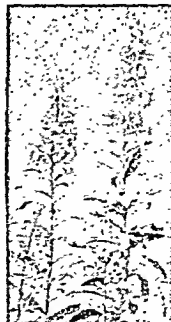
WILLS, WILLIAM JOHN (1834-61). Australian explorer. Born at Totnes, Devonshire, Jan. 5, 1834, he emigrated to Victoria in 1852, and in 1860 joined the expedition to cross the continent from south to north under Robert O'Hara Burke (q.v.), becoming second in command. With a few companions Wills and Burke pushed on to within a few miles of the Gulf of Carpentaria, but on their return they were overtaken by starvation, and all but one man died at Cooper's Creek, June, 1861.

WILMINGTON. Village of Sussex, 6 m. N.W. of Eastbourne. The ruins of a Benedictine priory, founded in 1088, are embodied in a farmhouse. On the down near is the Long Man of Wilmington, a gigantic figure, 230 ft. high, cut in the side of the hill. Pop. 200.

WILMINGTON. City and port of entry of Delaware, U.S.A. It stands on Delaware river and Christiana and Brandywine Creeks, 26 m. S.W. of Philadelphia. The Old Swedes' Church, Holy Trinity, erected in 1698, is probably the oldest church in the U.S.A. in which services are still held. Pop. 122,049.

Wilmington, in North Carolina, is a port of entry on Cape Fear river, about 30 m. from its embouchure into the Atlantic. Pop. 42,272.

WILMSLOW. Urban dist. of Cheshire. It is 6 m. N.W. of Macclesfield, on



Willow Herb. Spikes of the rosy flowers

the L.M.S. Rly., and is largely residential. The parish church of S. Bartholomew contains a fine rood screen and monuments. Pop. 8,286

WILSON, SIR ARTHUR KNYVET (1842-1921). British sailor. Born March 4, 1842, he entered the navy in 1855, and saw active service in the Crimean War, the China War of 1858, and the Egyptian War, winning the V.C. in the last for conspicuous gallantry at El Teb, Feb. 29, 1884. He was controller of the navy, 1897-1901, commanded the Channel and Home fleets successively from 1901 to 1907, and was first sea lord at the admiralty, 1910-11. He died May 25, 1921.



Sir Henry H. Wilson,
British soldier
Russell

WILSON, SIR HENRY (1864-1922). British soldier. Born May 5, 1864, he served in Burma, 1885-87, and in the S. African War. He was assistant director of staff duties, war office, 1904-6; commandant of the staff college, 1907-10; and director of military operations, 1910-14. On the outbreak of the Great War he went to France as assistant chief of staff to Sir John French, was later a corps commander, then chief liaison officer with the French command. He returned to France in 1917 as the British military representative on the Allies' war council at Versailles. In 1918 he became chief of the imperial staff. He was knighted in 1915, made a baronet, and promoted field-marshal in 1919 and awarded £10,000. He was elected M.P. for North Down in 1922, and became a trenchant critic of the government's Irish policy. Assassinated in London, June 22, 1922, he was buried in S. Paul's Cathedral.

WILSON, JOHN (1785-1854). Scottish author, also known by his pen-name of Christopher North. He was born at Paisley, May 18, 1785, and later settled in Edinburgh. He became connected with Blackwood's Magazine, and with Lockhart was the mainstay of that periodical. In 1820 Wilson was appointed professor of moral philosophy at Edinburgh. He died April 3, 1854.

WILSON, RICHARD (1714-82). English artist. The son of a clergyman, he was born in Montgomeryshire, Aug. 1, 1714. He studied art in London and passed some years in Italy. His first paintings were portraits, but later he turned to landscape and became one of the most famous of English landscape painters. Of a large number of works, Niobe and several others are in the National Gallery, London, and many are in private collections. Wilson was one of the original members of the Royal Academy and in 1776 became its librarian. He died May 15, 1782.

WILSON, THOMAS WOODROW (1856-1924). American politician and author. Born at Staunton, Virginia, Dec. 28, 1856, he was of mixed Scottish and Irish stock. He became a lawyer and practised for a time at Atlanta, Georgia.



Woodrow Wilson,
American president

Already a student of political science, his book, Congressional Government, appeared in 1885. In the same year he was chosen associate professor at Bryn Mawr College, moving in 1888 to the

Wesleyan University as professor of economics. In 1890 he became professor of jurisprudence and politics at Princeton, and from 1902-11 he was its president. In Nov., 1910, Wilson, a Democrat, was elected governor of New Jersey, where he initiated vigorous reforms. This brought him before the public, and in 1912 he was elected president of the U.S.A.

When the Great War broke out, Wilson refused to judge between the combatants. He kept the U.S.A. out of the war, and was re-elected president in Nov., 1916, by a narrow margin. But his second term had hardly begun when the German unlimited U-boat campaign forced him to assent to America's entry into the war. In an address to Congress, Jan. 8, 1918, he laid down his 14 points as a programme of world peace. After the armistice he went to Paris as the head of the U.S. delegation. He achieved there his first concern, the foundation of the League of Nations, but in the U.S.A. the idea was met with bitter hostility and opposition. He left office March 4, 1921, and died Feb. 3, 1924. See United States; Versailles, Treaty of.

WILTON. Borough of Wiltshire. It stands on the river Wylye, 2½ m. from Salisbury, on the Southern Rly. The church of SS. Mary and Nicholas is a Romanesque building. Wilton house, seat of the earl of Pembroke, is famous for its associations with Shakespeare, Sir Philip Sidney, and other Elizabethans, and for its collection of pictures and works of art. Wilton gives its name to a kind of carpet which is now made elsewhere. Pop. 2,011.

WILTSHIRE or **WILRS.** County of England. In the S. of the country, it covers 1,350 sq. m. It is divided into two portions by the Vale of Pewsey: the N. and more fertile one

includes the Marlborough Downs, while the S. one contains Salisbury Plain. Inkpen Beacon is 954 ft. high. The county embraces parts of Cranborne Chase and the New Forest, and the whole of Savernake Forest. The rivers include the Bristol Avon, Salisbury Avon, and Kennet. The chief industries are the keeping of sheep, dairy farming, and the production of cheese and bacon. Salisbury is the county town, others including Swindon, Marlborough, Devizes, and Wilton, after which the county is named. The G.W., Southern, and L.M.S. Rlys. serve the county. Pop. 292,208.

WILTSHIRE REGIMENT. Regiment of the British army, known officially as The Duke of Edinburgh's (Wiltshire Regiment) until 1920, when it became The Wiltshire Regiment (Duke of Edinburgh's). This regiment was originally the 62nd and the 99th Foot. Both were raised in Scotland. It fought under Wolfe at Quebec, served through the American War of Independence, earning the nickname of the Springers, and went to Spain in time to take part in the closing battles of the Peninsular War. Later it was engaged in the Sikh War and the Crimean War.



Wiltshire Regiment badge

in time to take part in the closing battles of the Peninsular War. Later it was engaged in the Sikh War and the Crimean War.

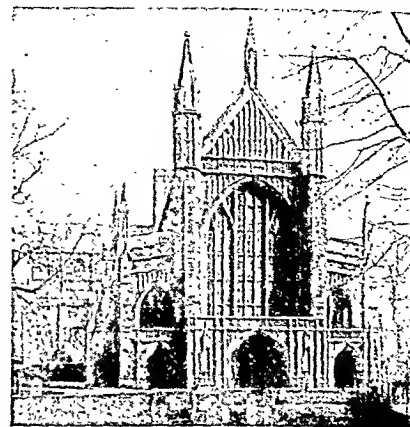
In addition to its three regular battalions, four territorial and three service served in the Great War. The 1st and 2nd were part of the expeditionary force, and fought in all the leading battles of 1914. The depot is at Devizes.

WIMBLEDON. Borough of Surrey. It is 7 m. from London and is served by the Southern and District Rlys. Its common of 1,000 acres, public property since 1871, was the scene of the N.R.A. meetings, 1860-89, and has remains of a Celtic earthwork, called Caesar's Camp. In 1922 it was enlarged by 42 acres, laid out as a memorial garden to service men of the district who fell in the Great War. Wimbledon is the headquarters of the All-England Lawn Tennis Club. In 1929 an electric rly. to Sutton was opened. Pop. 61,451.

WIMBORNE.

Urban dist. and market town of Dorset. It is 6 m. N. of Poole, on the Southern Rly. Probably a Roman station, it grew to importance with the building of the collegiate church or minster, founded by Edward the Confessor. Cruciform in plan, it has a transitional Norman tower and a 15th century Perpendicular tower at the W. end. Market day, Tues. Pop. 3,742.

The title of baron Wimborne was given to Sir Ivor Guest (1835-1914) in 1880. His son, Ivor Churchill Guest, the 2nd baron, having been



Winchester. West front of the cathedral, notable for its nave the longest in England. See below

lord lieutenant of Ireland 1915-18, was made a viscount in 1918.

WIMEREUX. Watering place of France. It stands 4 m. N. of Boulogne-sur-Mer, at the mouth of the small Wimereux stream. Wimereux was a British hospital base during the Great War and a headquarters of the W.A.A.C., and during the later stages of the withdrawal of the British Expeditionary Force became general headquarters. Pop. 1,498.

WINCEBY. Village of Lincolnshire. It is 5 m. E. of Horncastle, and is noted for a skirmish in which the parliamentary forces routed the royalists, Oct. 11, 1643.

WINCH (A.S. wince, bent handle). Device for drawing a load or lifting a weight. In its simple form it consists of a pair of frames spaced apart, fixed to a common base and providing secure bearings for a shaft which projects on either side, where it is twice bent to a right angle to form a cranked handle. A rope is secured to the shaft and wound round it by turning the handle. By this means a load may be drawn along, or by passing the rope round an elevated pulley a weight may be lifted.

WINCHCOMB. Market town of Gloucestershire. It lies in a valley of the Cotswolds, 7 m. N.E. of Cheltenham, on the G.W. Rly., and has a fine late Perpendicular church. Market day, Wed. Pop. 2,741.

WINCHELSEA. Seaport of Sussex. It is 8 m. N.E. of Hastings. The original town was made a Cinque Port by William I and was an important seaport. The new Winchelsea was founded by Edward I and was a busy seaport, but in the 16th century the harbour became choked, and since then the town has dwindled in size, although until 1832 it returned two members to Parliament. Its buildings include the parish church of S. Thomas Becket, the court house, and the old town gates. There is a station on the Southern Rly. Pop. 700.

WINCHESTER. City and co. town of Hampshire. It stands on the Itchen, 12 m. from Southampton, and is served by the Southern and G.W. Rlys. The cathedral, one of the longest Gothic churches in Europe, has some magnificent features, especially the nave. It is largely Gothic, but some Norman work survives. Early in the 20th century the foundations were found to be faulty and an extensive restoration scheme was completed. Of the other churches in the city S. Swithun's, a tiny building over the King's Gate, is the most notable. Secular buildings include Wolvesey Castle, the city cross, the Great Hall, containing the so-called round table of King Arthur, and Winchester College (q.v.). The West Gate stands at the top of the High Street, and the King's Gate leads to the close.

Winchester became the capital of Wessex, and for a time of England. Here the Anglo-



Wiltshire Map of the agricultural and pastoral county of England

Saxon kings held their court and here many are buried. William I built a castle here. Pop. 23,791. See Alfred; Almshouses; Austen, J.; Cross; Pilgrims' Way; Reredos.

WINCHESTER, MARQUESS OF. English title, the premier of its class. It has been borne by the family of Paulet since 1551, when Sir William Paulet was made marquess of Winchester. Charles, the 9th marquess, was made duke of Bolton in 1689, and from then until 1794 the two titles were united. In that year Henry Paulet, 6th duke and 11th marquess, died without sons; the dukedom became extinct, but the marquessate passed to George Paulet, a descendant of the 4th marquess.

WINCHESTER COLLEGE. English public school. Founded by William of Wykeham in 1382, it is the oldest of the great public schools, and on it the existing public school system has been largely modelled. Its full title is the College of S. Mary at Winchester, and it has had from the first a close connexion with New College, Oxford, where scholarships are still reserved for Winchester boys. The nucleus of the school are the chapel, cloisters, quadrangle, and other buildings of the 14th century. New cloisters form the Great War Memorial.

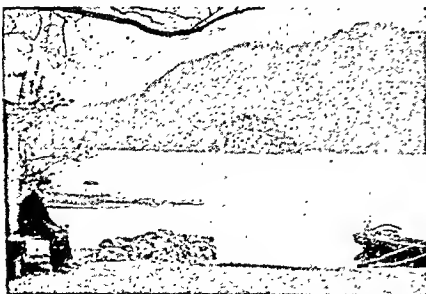
WINCKELMANN, JOHANN JOACHIM (1717-68). German art critic. Born at Stendal in Saxony, Dec. 9, 1717, he secured in 1754 a librarian's appointment at Rome, where he devoted himself to the study of antiquities. The result was his *History of Ancient Art*, 1764, which led to his becoming superintendent of antiquities at Rome. He was murdered June 8, 1768.

WINCOBANK. Parish in Yorkshire (W.R.). In the Sheffield district, it has a station on the L.N.E. Rly. There are remains of a British camp in the vicinity. Pop. 8,100.

WIND. Air in motion. The general planetary circulation of the atmosphere is as follows: In equatorial latitudes there is a belt, the doldrums, where low pressure calms, and light, variable winds are experienced. Towards this belt two great sets of winds blow from the horse latitudes, high pressure calms located about 30 deg.-50 deg. north and south of the equator. These are the trade winds, which blow equatorwards from the north-east in the northern hemisphere, and from the south-west in the southern hemisphere. From the horse latitudes other winds, the westerlies, blow polewards. North of the equator these are the south-westerlies; in the southern hemisphere they blow from the north-west, and are known as the trade winds.

Winds exercise a great influence on climate, not only directly, but also indirectly through the great ocean currents which they set in motion. See Air; Anemometer; Beaufort Scale; Meteorology; Monsoon; Trade Wind.

WINDERMERE. Lake of Westmorland. Its length is 10½ m., and its breadth from ½ to 1½ m. Places on its banks include Lakeside, at the foot, Waterhead at the other end, and Bowness in the middle. Various short streams flow into it, and its waters flow by the Leven



Windermere, Westmorland. Ferry and western shore of the lake from the Nab

to Morecambe Bay. Steamers ply regularly on the lake. See Lake District.

The urban dist. of Windermere is on the E. shore of the lake, 4 m. S.E. of Ambleside. It has a station on the L.M.S. Pop. 6,496.

WINDHAM, WILLIAM (1760-1810). British statesman. Born May 3, 1760, and educated at Eton and Oxford, he became, 1783, secretary to Lord Northborough, lord-lieutenant of Ireland. He was elected M.P. for Norwich, 1784, and retained that seat for 18 years. A staunch follower of Pitt, he was secretary at war, with a seat in the cabinet, 1794-1801, and in 1806 was secretary of state for war and for the colonies in Grenville's All the Talents ministry. He died June 4, 1810. Consult his *Diary*, 1784-1810, ed. Mrs. Baring, 1866.

WINDHOEK OR WINDHUK. Capital of the South-West Africa Protectorate. A rly. centre, it lies in good pasture country 253 m. from Walvis Bay. Pop. 4,602 (Europeans).

WINDLASS. Device for hoisting or hauling. It is used for raising weights, lifting water from a well, or on shipboard for raising the anchor. A common and simple form consists of a horizontal harrel for the hauling rope, supported in vertical standards and rotated by a cranked handle. See Winch.

WINDMILL. Mill operated by the wind. Large windmills have four, five, or six arms, 20-50 ft. long, carrying sails. A sail may be canvas backed by a wooden lattice attached to the arm, or a series of wooden slats arranged transversely.

The old-fashioned post mill, which revolved as a whole on a central vertical pivot, embedded in a masonry base, has been superseded by the tower mill, with a fixed body and a revolving top. The sails are kept square to the wind automatically by a fantail at the rear, driving the top through gearing. The sail-shaft, inclined upwards at an angle of about 10 deg. to the horizontal, has a large toothed wheel on its back end, engaging with another wheel on the vertical shaft of the mill or, if the sails drive a pump, on a secondary crank-shaft.

WINDOW. In a building, an opening in the wall for the admission of light and air; in modern usage, an opening filled with glass.

Tracery enormously enhanced the importance of the window as an architectural feature. From being a narrow slit in the wall, the Gothic window rapidly increased in width, and the single fixed light gave place to elaborately fitted casements with leaded panes. By the end of the 14th century immense windows, divided into many lights, had become common, and gave the opportunity for new devices of tracery. Renaissance influences asserted the square-headed type as the only one for Europe, though during the Tudor period the division of lights by mullion (q.v.) and transom (q.v.) gave the British window a purely national character. It was not before the middle of the 19th century that the large shop-window of plate glass was employed in the great European capitals. See Bow Window; Clerestory; Dormer; Glass; Gothic Architecture; Rose Window; Stained Glass.

WINDOW TAX. In Great Britain a tax was levied on windows in houses containing more

than six. It was first imposed in 1695, and was repealed in 1851. See Ancient Lights.

WINDSOR, NEW. Borough and market town of Berkshire. On the right bank of the Thames, 22 m. from London, it is served by the G.W. and Southern Rlys. Once a chapelry of Clewer, it was made a free bor. and given a market by Edward I. It is chiefly famous as the site of Windsor Castle (q.v.). Other buildings include the town hall, completed by Wren, 1686; the parish church of S. John the Baptist, rebuilt in 1822; royal mews, and a museum with Shakespeare relics. Market day, Sat. Pop. (1921) 20,115. The village of Old Windsor lies 2 m. to the S.E. of the town and castle. Edward the Confessor had a palace here.

Windsor, in New South Wales, 34 m. by rail from Sydney, is the seat of the state agricultural college. Pop. 4,240. Another Windsor is a suburb of Brisbane.

WINDSOR. Town and port of Nova Scotia, Canada. It stands at the mouth of the Avon, 45 m. from Halifax, on the C.P. Rly. Its industries include shipping. Gypsum is found. In March, 1919, the business part of the town was destroyed by fire. Pop. 3,591.

WINDSOR. City and port of Ontario, Canada. It stands on the Detroit river, opposite Detroit, U.S.A., has stations on the C.N. and C.P. Rlys., and is connected with Detroit by a tunnel under the river and a steam ferry. Steamers go from here to ports on the Great Lakes and the St. Lawrence river. Electric power is derived from Niagara. Pop. 38,591.

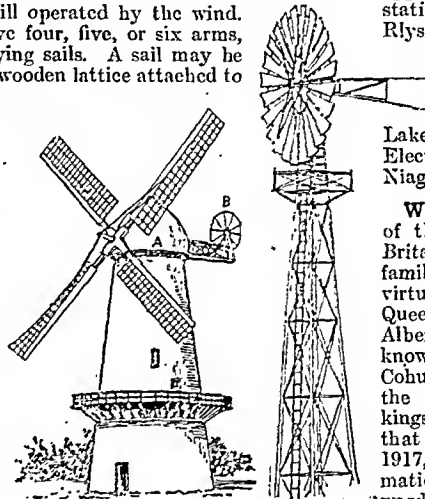
WINDSOR. Family name of the royal house of Great Britain and Ireland. The royal family of Britain belongs, by virtue of the marriage between Queen Victoria and Prince Albert, to the German family known as the house of Saxe-Coburg-Gotha, itself a scion of the family of the dukes and kings of Saxony, known also as that of Wettin. On July 17, 1917, King George V by proclamation declared that henceforward his family should be known as "the House and Family of Windsor." See Albert; George V; Royal Family.

WINDSOR CASTLE. Royal palace of England. Situated on an eminence overlooking the valley of the Thames and the town at its base, it covers, with its grounds, about 12 acres, and is divided into a lower ward, middle ward, and upper ward or quadrangle. In the centre is the Round Tower or Keep; the state and private apartments are on the N.E. and E.

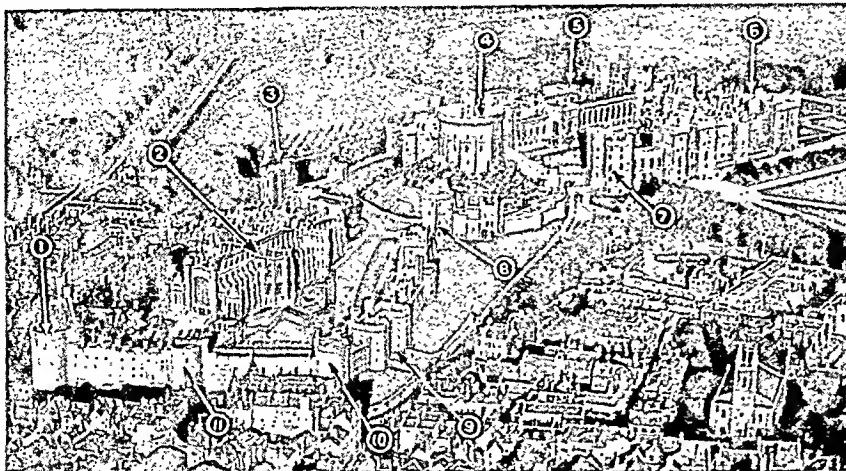
Founded by William I on the site of an earlier fortress, and largely rebuilt and added to by William of Wykeham for Edward III, Windsor Castle was extended and renovated by George III and IV and Queen Victoria. S. George's Chapel, a beautiful example of Perpendicular Gothic, was reopened after extensive restoration in 1930.

The residential parts of the castle, library, etc., form a rich storehouse of artistic and other treasures. In the Home Park, lying N and E. and about 4 m. in circumference, is Frogmore House (q.v.). The Great Park, upwards of 1,800 acres, stocked with fallow deer, lies to the S.; its Long Walk runs in a straight line for nearly 3 m. in the direction of Virginia Water (q.v.). A fragment of Windsor Forest, William I's hunting ground, still exists on the W. side of the Great Park. See illus. p. 1438.

WINDWARD ISLANDS. Southern division of the Lesser Antilles, West Indies. They comprise the British colonies of St. Lucia,



Windmill. Left, tower type in which revolving top (A) is turned by fantail (B) to keep sails in the wind. Right, American or annular type, used for pumping



Windsor Castle. Aerial view of the royal palace. 1. Clewer or Curfew Tower. 2. St. George's Chapel. 3. Windsor Tower. 4. Round Tower. 5. State apartments. 6. Visitors' apartments. 7. Devil's Tower. 8. Henry III's Tower. 9. Henry VIII's Gateway. 10. Salisbury Tower. 11. Garter Tower. See article p. 1437

St. Vincent, Grenada, and the Grenadines (half under St. Vincent half under Grenada), forming the E. barrier to the Caribbean Sea, between Martinique and Trinidad. The group is under a governor and commander-in-chief, though each island has its own institutions, laws, revenue, tariffs, etc. The total area is 524 sq. m. Pop. about 190,000. See St. Vincent; West Indies

WINE. Fermented grapo-juice, used as a drink. For the finest wines only ripe, sound fruit goes to the press. For red wines, the skins, and for certain wines, the stalks, skins, seeds and all are thrown into the vat; these produce tannic and other acids. The best wine is made from juice expressed only by the weight of the grapes themselves. Fermentation is set up naturally, or by adding a wine yeast. Primary fermentation lasts from three or four days to two or three weeks, and the wine is drawn off from the lees and put into fresh vessels, where secondary fermentation takes place. During this process the sugar, or part of it, is converted into alcohol and carbon dioxide. Fermentation is stopped naturally, by reason of its product, alcohol, staying the process; or artificially, by the addition of spirits. A natural wine contains from 7 to 25 p.c. of proof spirit.

The residue, from the wine-press, called marc, is sometimes used in making cheap brandy; that from the fermentation vats, called argol, or lees, contains cream of tartar or acid potassium tartrate. Wine is stored for two, three, or four years to mature, before finally casking or bottling. See Alcohol; Claret; Fermentation; Port Wine; Vine, etc.

WING. Organ of flight in bats, birds, and insects. In the bats it consists of a lengthening of the finger-bones over which, when outspread, is stretched a web of skin, which is continued backwards to include the hind legs from the ankle upwards and the greater portion of the tail. In the bird the fore-limb is lengthened, certain bones are united, and only three of the fingers are represented. The movements of the wing are controlled by powerful muscles attached to the keeled breast-bone. In insects, wings are not modifications of limbs, but of part of the breathing apparatus. They consist of thin horny membrane, variously strengthened by ribs or network of firmer material, and may be naked or covered with minute scales or hairs. There are usually two pairs, but in the flies (Diptera) there is one. See: Bat; Bird; Feather; Insect.

WING. One of the supporting surfaces of an aeroplane. In military aeronautics wing is applied to a division of the Royal Air Force, which, under war conditions, consists of three

squadrons, each squadron comprising three flights of six aeroplanes each with their personnel and matériel. See Aeroplane; Flight.

A wing is under a wing commander, the rank just above that of squadron leader. He ranks equal to a commander in the navy and a lieutenant-colonel in the army.

-Wingate. Parish of Durham. It is 9 m. E. of Durham, on the L.N.E. Rly. There are brickworks and collieries. Pop. 11,424.

WINGATE, SIR FRANCIS REGINALD (b. 1861). British soldier and administrator. Born at Broadfield, Renfrewshire, June 25, 1861, he entered the Royal Artillery in 1880. He saw service in the Nile expedition, 1884-85, the Dongola campaign, 1896, and the Khartoum expedition, 1898. Sirdar of the Egyptian army and governor of the Sudan, 1899-1916, and high commissioner of Egypt, 1916-19, he became general in 1913, G.C.B. in 1914 and a baronet in 1920. His writings include *Mahdism and the Egyptian Sudan*, 1889; *Ten Years' Captivity in the Mahdi's Camp*, 1891.



Sir F. Reginald Wingate, British soldier. Russell

WINGFIELD SCULLS. Sculling race which forms the English Amateur (Seulling) Championship. Instituted in 1890, it is rowed annually in July on the Thames, from Putney to Mortlake, over a course of 4½ m.

WINNINGTON - INGRAM, ARTHUR FOLEY (b. 1858). British prelate. Born Jan. 26, 1858, he was curate of St. Mary's, Shrewsbury, 1884-85; private chaplain to the bishop of Lichfield, 1885-88 and head of Oxford House, Bethnal Green, 1888-97. Rector of St. Matthew's, Bethnal Green, 1895-97, he was bishop suffragan of Stepney and canon of St. Paul's Cathedral, 1897-1901, when he became bishop of London. Unconventional, sympathetic, tireless, and strong in his championship of social causes, Dr. Winnington-Ingram is regarded as one of London's most popular bishops. See Bishop.



A. F. Winnington-Ingram, British prelate. Russell

WINNIPEG. Lake of Manitoba, Canada. It has an area of 9,459 sq. m. It receives the Red river from the S., the Saskatchewan from the W., the Winnipeg, and other streams.

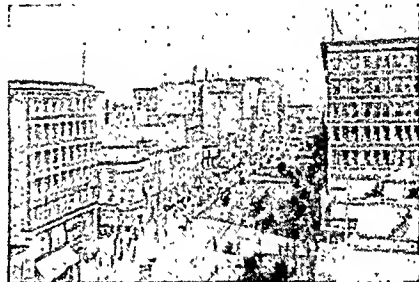
Lakes Manitoba and Winnipegosis send their waters down to Lake Winnipeg, whence the Nelson carries them to Hudson Bay.

WINNIPEG. City and capital of Manitoba, Canada. It stands on a plain at the junction of the Red river and Assiniboine, 1,414 m. from Montreal and 60 m. from the United States boundary. It is an important station on the three trans-continental rly. lines. The buildings include the city hall, parliament buildings, general hospital, and the colleges that compose the university of Manitoba.

Winnipeg is the great market for the grain of the west, and the distributing centre for the needs of the prairie provinces. There are large fur auctions and various manufactures. Electric power for its industries comes from the Winnipeg river. There was a trading post here before 1763, erected by the fur traders, and early in the 19th century a more extensive one, called Fort Garry, was put up. Just outside this a group of houses sprang up after 1850, and to this village the name of Winnipeg was given. Pop. 191,998; Greater Winnipeg, 280,000. See illus. below.

WINNIPEGOSIS. Lake of Canada. In the S. of the prov. of Manitoba, it covers 2,086 sq. m. Various rivers, including the Mossy, Swan, and Red Deer, flow into it, and its waters are carried to Lake Manitoba.

WINSFORD. Urban dist. of Cheshire. It stands on the Weaver, 3½ m. E. of Middlewich, and is served by the L.M.S. and Cheshire Lines Rlys. It is a centre of the salt industry, the salt being carried by river to Liverpool. Pop. 10,957.



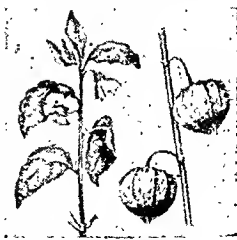
Winnipeg, capital city of Manitoba. Portage Avenue East from Carlton Street. See above Courtesy of the Canadian Government

WINSLOW. Market town of Buckinghamshire. Between Aylesbury and Buckingham, 10 m. N.W. of the former, on the L.M.S. Rly., it is an agricultural centre. Market day, Mon. Pop. 1,532.

WINTER ACONITE (*Eranthis hyemalis*). Perennial herb of the order Ranunculaceae. A native of W. Europe, it has a stout creeping root-stock, from which arise the round lobed leaves. The flowers are solitary, pale yellow, and cup-shaped at the summit of a tall stem. It flowers from Jan. to March.

WINTER BERRY or **BLACK ALDER** (*Ilex verticillata*). Shrub of the order Aquifoliaceae. A native of N. America, it grows to a height of 6 ft. and has alternate long, lance-shaped leaves with toothed edges. The small white flowers are succeeded by red berries, about ¼ in. in diameter. The bark is bitter and has been used medicinally.

WINTER CHERRY (*Physalis alkekengi*). Perennial herb of the order Solanaceae. A native of the Caucasus and China, it has a creeping root-stock and scarcely



Winter Cherry. Left, flowers and leaves; right, fruit

branched stems. The leaves are wedge-shaped oval on long stalks, and the calyx becomes enlarged, inflated, and red after the white corolla has dropped. The fruit is a round edible berry of a scarlet colour.

WINTERGREEN (*Pyrola*). Small genus of evergreen perennial herbs of the order Ericaceae. Natives of Europe, Asia, and N. America, they have creeping root-stocks, from which grow most of the leathery leaves. The



Wintergreen. Sprays of *Pyrola rotundifolia*

white, pink, or yellowish flowers are globular.

Wintergreen oil, or oil of gaultheria, is an essential oil with a strongly aromatic odour obtained by distilling the leaves of *Gaultheria procumbens*, a low-growing N. American shrub of the order Ericaceae. It is employed externally in the treatment of rheumatism and mumps.

WINTER'S BARK (*Drimys winteri*).

Small evergreen tree of the order Magnoliaceae. A native of S. America, it has oblong leaves, glaucous beneath, and fragrant white flowers, an inch across. The bark has tonic stimulant properties, and is aromatic.

WINTER SPORTS. Term used for open air sports, mainly on the ice, carried on chiefly by visitors in Switzerland during the winter months. They include skating, tobogganing, sledging, skiing and curling, and are held at St. Moritz, Grindelwald, Mürren, etc.

WINTERTON, EARL. Irish title held by the Turnour family since 1766. The family was founded by Edward Turnour, who was created a baron in 1761, and five years later became Viscount Turnour and Earl Winterton. From him the title has passed in direct male succession to Edward (b. 1883), 6th earl, who was elected M.P. for Horsham in 1904. He was under-secretary for India, 1922-24 and again 1924-29.

WINTHROP, JOHN (1588-1649). English colonist. Born at Edwardstone, Suffolk, Jan. 12, 1588, he helped to found Boston, U.S.A., in 1629, and was four times appointed governor of Massachusetts. Holding strict Puritanical views, he opposed the action of Sir Harry Vane, governor at the time, in allowing Anne Hutchinson to propagate her religious opinions. He died March 26, 1649.

His son, John Winthrop (1606-76), emigrated to America in 1631 and was one of the founders of Ipswich, Saybrook, and New London.

Winton. Old name of Winchester (q.v.). It is used by the bishop as a signature.

Winton. Township in North Queensland. It is 320 m. from Townsville, and is the centre of a rich grazing dist. Pop. 1,400.

WIRE. Thread or slender rod of metal, usually circular in section. The metals chiefly used are highly ductile—gold, silver, copper, etc., and alloys, steel, iron-nickel, etc.

Most wires are made by drawing. For the manufacture of steel wire the billets or ingots of steel are rolled into round rods. The end of the rod is pointed by hammering, filing, or rolling, so that it can pass through the hole in the draw-plate and be gripped ready for drawing completely through. Wires may have to be drawn through a number of dies before they are reduced to the required size. The operations may be separate, or the wires may pass continuously through the series of dies. Soapy water, oil, tallow, wax, etc., are used as lubricants, and in some cases the rod is dipped in a solution of copper sulphate,

which is a preventive of rust. After several drawings the wire generally has to be annealed. See Rope.

WIRELESS. Term used for telephonic and telegraphic communication by means of electro-magnetic waves. In 1863 Clerk-Maxwell announced the existence of electro-magnetic waves, and Hertz in 1888 produced such waves by discharging a condenser across a spark gap. Lodge in 1894 demonstrated that the waves could be used for signalling, and in 1895 Marconi, who had been experimenting for some time, devised a practical apparatus for the purpose, comprising an elevated antenna, condenser, and earth connexion. Branly had invented his filings coherer some five years before, and this, improved by Marconi, was used as a detector of the signals.

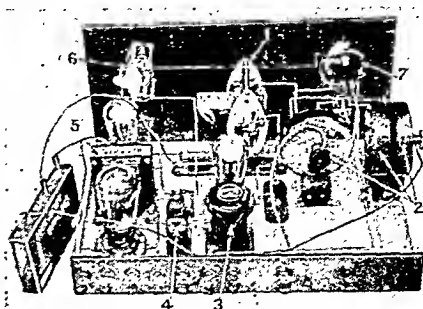
In 1896 Marconi demonstrated his apparatus to the British postal authorities, and to the war office and admiralty. In 1898 wireless telegraphy was used in the naval manoeuvres, with a range of 60 miles. Communication between England and France was effected in 1899, and two years later the Atlantic was spanned by wireless. Many ships of the navy were equipped, and wireless was adopted by a number of steamship companies. Lodge in 1897 had utilised the principle of electrical tuning, which he termed syntony, and Marconi in 1900 applied the theory to sending and receiving circuits. The earborundum crystal detector was introduced in 1906, and, until displaced by the thermionic valve, was largely used as a rectifier. Fleming's valve, the diode, was invented in 1904, and the addition of a third electrode by Lee de Forest in 1906 made it a sensitive receiver and a most efficient amplifier of wireless signals. The carrying of wireless apparatus is compulsory on British sea-going ships over 1,600 tons.

In Marconi's spark system a series of highly damped oscillations are sent out at a given frequency, the current being furnished by an alternator. The signals consist of a succession of waves which is interrupted by the key of the sending apparatus to make the longs and shorts of Morse. The quenched spark system utilises a number of spark gaps in series, and the sparks are made to die out very quickly. In the continuous wave system the oscillations are undamped, and a uniform wave is radiated as long as the sending key is depressed. To generate the continuous oscillations a thermionic valve, an alternator, or the electric arc is employed. The arc was first used by V. Poulsen in Denmark in 1903, and the alternator, as a practical proposition, was first employed by R. Goldschmidt in Germany in 1911.

The use of the thermionic valve as a generator is due to Meissner (1913). Its employment to produce a carrier wave train capable of being modulated by speech brought wireless telephony within reach. In tests made for the Italian navy in 1914, Marconi transmitted speech over a distance of 50 miles. In 1915 the Arlington, U.S.A., station, using the Poulsen arc, communicated both with Paris and Honolulu. Marconi telephoned from Ireland to Canada in 1919, and in 1924 the Poldhu, Cornwall, station achieved speech communication with Australia.

COMMERCIAL WIRELESS. In 1927 a public wireless telephone service was opened between London and New York, and in 1929 between London and Sydney, N.S.W. Canada, Mexico, and Buenos Aires are also linked up with London by wireless telephone. These services are worked through the Government station at Rugby, which covers a site of 900 acres.

In 1928 the Government beam wireless services, including the stations at Bodmin, Bridgwater, Grimsby, and Skegness, were leased for 25 years to a merger including 13



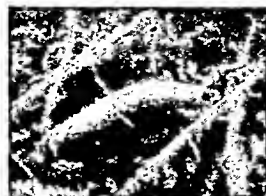
Wireless receiver: simple three-valve set. 1. Aerial tuning condenser. 2. Plug-in coils. 3. High-frequency choke. 4. Anode resistance. 5. Low-frequency transformer. 6. Reaction condenser. 7. Aerial series condenser

cable and wireless telegraph companies. The Pacific, West Indian, and transatlantic cables of the post office were sold to the merger. Known as Imperial and International Communications, Ltd., the merger company controls 164,000 nautical miles of cables and 253 cable and wireless stations. The right to carry on the external wireless telephone services of Gt. Britain was reserved by the Government. Besides the beam stations enumerated the merger controls others at Dorchester and Somerton, and all-direction stations at Brentwood, Carnarvon, and Ongar. Communication is maintained between London and Australia, India, Japan, S. Africa, S. America and the U.S.A.

BROADCASTING. The apparatus used for transmission and reception follows the lines of that employed for commercial wireless telephony. Its leading features are dealt with in such articles as Aerial, Amplifier, Beat, Coil, Condenser, Detector, Grid, Loud Speaker, Microphone, Modulation, Potentiometer, Reaction, Rectifier, Resistance, Thermionic Valve, and Transformer.

The opening of the high-powered twin transmitter regional stations by the B.B.C. in 1929 and 1930 extended the range of reception for crystal detectors from 20 to 50 miles, and made it possible for either of two alternative programmes to be picked up with quite simple apparatus. The history of broadcasting is summarised in the article on p. 307.

WIREWORM. Popular name applied indiscriminately to the larvae of many beetles constituting several genera of the family Elateridae. They live a little below the surface of the ground, where they bore into and feed upon succulent roots. They spend several



Wireworm, much enlarged, at the root of a lettuce

years in this stage, then burrow deeper and enter the pupal stage. In the adult state they are known as click beetles (q.v.) or skip-jacks. *Agriotes lineatus*, one of six British species, is indicated in horticultural works as the wireworm.

WIRKSWORTH. Urban dist. and market town of Derbyshire. In a valley at the S. of the Peak, it is 13 m. N.W. of Derby on the L.M.S. Rly. The 13th century church contains relics of ancient sculpture. Market day, Tues. Pop. 3,615.

WISBECH. Borough, market town, and port of Cambridgeshire. On the Nen, in the Isle of Ely, it is 15 m. W. of King's Lynn, on the L.N.E. Rly. There is communication with Cambridge and London by the Wisbech canal. The parish church has Norman remains.

There is a shipping trade in agricultural produce, while agricultural implements, beer, and oilcake are made. Much fruit is grown. Market days, Thurs. and Sat. Pop. 11,316.

WISBY OR **VISBY**. City and seaport of Sweden. It is on the W. coast of the island of Gottland, 44 m. from the mainland and 150 m. from Stockholm. Wisby retains its extensive walls and their accompanying towers. The cathedral of S. Mary is a fine building of the 13th century, with later additions. Other churches include those of the Holy Ghost, S. Clement, S. Catherine, and S. Nicholas. Wisby became a member of the Hanseatic League, and was very prosperous in the 11th-14th centuries. Pop. 10,377.

WISCONSIN. State of the U.S.A. It is bounded in part on the E. by Lake Michigan, N. by Lake Superior, and W. by the Mississippi. An undulating plateau, Wisconsin presents little relief apart from the rocky masses holed by erosion. The St. Croix, Wisconsin, Chippewa, and Black rivers are affluents of the Mississippi, and the Fox, the longest river in the E., flows into Green Bay; Winnebago is the largest of the numerous lakes. The forests yield much lumber. Iron and lead ore and zinc are the chief mineral products. Madison is the capital, but Milwaukee is the most important city. Its area is 56,066 sq. m. Pop. 2,953,000. See American Indians, illus. p. 73.

WISDOM, **BOOK OF**. One of the O.T. Apocrypha, which purports to be the work of Solomon, and in Greek manuscripts is entitled *The Wisdom of Solomon*. It was written by an Alexandrian Jew, probably between A.D. 1 and 40, to counteract the scepticism and Epicureanism represented in the Book of Ecclesiasticus.

WISEMAN, **NICHOLAS** **PATRICK STEPHEN** (1802-65). British prelate. Born at Seville, of Irish parentage, from 1828-40 he was rector of the English College in Rome, where his learning won for him a position in the Vatican library and a professorship in the university. In 1840 he went to England, was ordained bishop, made president of Oscott College, and had charge of the churches in the midland counties. He had previously helped to found *The Dublin Review*. In 1846 he removed to London, and in 1850 Wiseman was made first archbishop of Westminster and a cardinal. He died Feb. 15, 1865.

WISHART, **GEORGE** (c. 1513-46). Scottish reformer and martyr. He became a schoolmaster at Montrose, and in 1538 was charged with heresy in teaching the Greek Testament and had to take refuge in England. Convicted in 1539 on a similar charge, he spent some time in Germany and Switzerland, afterwards entering Corpus Christi College, Cambridge. He returned to Scotland in 1543, in 1545 was arrested, tried for heresy at St. Andrews, and burnt, March 1, 1546.



George Wishart,
Scottish reformer

WISHAW. Coal and iron-working centre of Lanarkshire, Scotland. It stands near the Clyde, 15 m. from Glasgow, on the L.M.S. Rly. Formerly itself a burgh, in 1920 it was united with Motherwell (q.v.).

WISLEY. Village of Surrey. It is 3½ m. from Horsley, on the Southern Rly. Here are the gardens of the Royal Horticultural Society. Pop. 273.

WISTARIA. Genus of plants of the order Leguminosae, including *W. chinensis*, the Chinese kidney-bean tree. This is a climbing shrub or tree, a native of China. The long leaves are broken up into about six pairs of oval leaflets, clothed with silky down, and the flowers are borne in terminal racemes. *Wistaria* is a favourite wall plant in British gardens.



Wistaria. Spray of flowers and leaves of the climbing shrub

WIT (A.-S. *witt*, knowledge; in a personal sense A.-S. *wita*, a wise man). Term formerly equivalent to intelligence, still used in the plural for the mental faculties. Through the transitional sense of intellectual brilliance as practised by the men of letters of the 18th century, the word has come to mean the power, displayed in conversation and literature, of affording intellectual satisfaction by the unexpected association of apparently unconnected ideas. It differs from humour in appealing to the intelligence rather than to the feelings.

Witan. Short name for the Anglo-Saxon assembly known as the Witenagemot (q.v.).

WITCH. Term now generally restricted to a sorceress or female magician, the male counterpart being a wizard. The belief in witchcraft is very old, dating back to the time of the Old Testament, or perhaps earlier. It was taken up by the Christian church, and from 1258 was treated by the Inquisition as a heresy. For some hundreds of years the most barbarous tortures were inflicted upon witches. The persecution spread to America, where they were treated with equal brutality.

WITCHCRAFT. In England the penal laws were repealed in 1736, the last execution taking place at Dornoch, 1722. It is estimated that in Europe generally 300,000 supposed witches suffered death between 1484-1782. Late in the 19th century such persons were occasionally lynched, and the belief in witchcraft lingers in many parts.

WITCH HAZEL (*Hamamelis virginica*). Shrub or small tree of the order Hamamelidaceae, native of N. America. It has alternate oval leaves, and flowers late in autumn. The flowers are yellow, with four long strap-shaped petals, and the fruit is a capsule containing a single seed not mature till the summer. The leaves and bark are astringent.

WITENAGEMOT (A.-S. *witena gemôt*, assembly of the wise). The official national council of a Saxon or English kingdom, its powers depending upon custom, not upon written law. Broadly speaking, the supreme authority in the Saxon kingdom was the king, but he took no action of general importance without consulting the Witan, or wise men. On special occasions the Witan took the character of a general assembly, a meeting of such freemen as found it convenient to attend. In emergencies the magnates



Witch Hazel. Twig of leaves and flowers

acted in the character of a national assembly and chose or deposed a king.

WITHAM. River of England. It rises in Rutland, and flows through Lincolnshire past Grantham, Lincoln, and Boston to the Wash. It is about 70 m. long.

WITHAM. Urban dist. of Essex. On an affluent of the Blackwater, 14 m. S.W. of Colchester, it is a junction on the L.N.E. Rly. The church of S. Nicholas, mostly dating from the 14th century, contains effigies and monuments. Pop. 3,719.

WITHER OR **WITHERS**, **GEORGE** (1588-1667). English poet and pamphleteer. Born at Bentworth, Hampshire, June 11, 1588, he was several times imprisoned on account of his writings. He was by turns satirist, lyrical, puritan, hymn writer, and soldier; fighting for and against Charles II. He displayed notable courage during the plague, and died in the Savoy, May 2, 1667. One of his best lyrics is *Shall I, wasting in despair*.

WITNESS (A.-S. *witnes*, testimony). In legal proceedings, one who gives evidence. A witness must appear in accordance with the terms of the subpoena. He need answer no question tending to incriminate himself, but must not leave the court after giving evidence until the case is ended, being liable to recall. See Evidence; Oath; Subpoena; Trial.

WITNEY. Urban dist. and market town of Oxfordshire. On the river Windrush, 10 m. W. of Oxford, it is served by the G.W. Rly. The 13th century parish church was restored in 1867. The Butter Cross in the market place dates from 1683. Witney is famous for its blankets. Market day, Thurs. Pop. 3,364.

WITT, **JAN DE** (1625-72). Dutch statesman. Born at Dort, Sept. 24, 1625, he became a lawyer at The Hague. In 1653 he was chosen grand pensionary of Holland, becoming practically ruler of that country in domestic and foreign affairs. In 1654 he concluded an honourable peace with England, by one of the secret terms of which William of Orange was excluded from the Dutch stadtholdership. De Witt was responsible for the prosecution of the war with England and for the peace of Breda. The war with France in 1672, with the machinations of the followers of William of Orange, destroyed his popularity. He resigned Aug. 4, 1672, and on Aug. 21 was murdered by an infuriated mob.

WITTENBERG. Town of Prussia. It stands on the Elbe, 59 m. S.W. of Berlin, and is a rly. junction. The university, founded in 1502, in which Luther taught, was incorporated with that of Halle in 1815. Luther's house, of which part is a Luther museum, is in the Augusteum; adjacent is Melancthon's house. Luther fixed his famous theses on the doors of the castle church. Pop. 23,426.

WITWATERSRAND. Full name of the gold-bearing dist. in the Transvaal, known in brief as the Rand (q.v.). The university of the Witwatersrand was opened at Johannesburg in 1922.

WOAD (*Isatis tinctoria*). Biennial herb of the order Cruciferae, native of Europe and N. Asia. The root-leaves are oblong or oval; those of the stem arrow-shaped without stalks. The small yellow flowers are crowded in an elongated cluster. The seeds are contained in oblong pods, which are winged, and turn brown when ripe. Woad was once an important crop in Europe, but is almost supplanted as a source of blue dye by indigo. See illus. p. 1441.

Woad-waxen is another name for the dwarf shrub dyer's broom (q.v.).

WOBURN. Market town of Bedfordshire. It stands on the borders of Buckinghamshire, 15 m. from Bedford, its station on the L.M.S. Rly being Woburn Sands, 2 m. away. Market day, Fri. Pop. 1,062.

Near is Woburn Abbey, the seat of the duke of Bedford. It stands on land which belonged to a Cistercian abbey, founded in 1145. The present house, an 18th century building, contains one of the finest collections of paintings and other works of art in England. See Bedford, Duke of.



Wood. Left, flowers and fruit. Right, part of stem. See article page 1440

WODEHOUSE, PELHAM GRENVILLE (b. 1881). British humorist. Born Oct. 15, 1881, he was educated at Dulwich. After spending a short time in a London bank, he took to a literary career, and his first books were stories of school life. These were quite successful, but a much wider fame came when he began to write books of a distinctly humorous kind. In the course of a few years he had created such characters as Jeeves, Psmith, and Ukridge. Several of his books show his knowledge of American life and slang, while others are golfing stories of his own peculiar kind. In addition to the creation of extraordinary situations, Wodehouse's humour owes something to his use of hackneyed phrases in quite unexpected ways and to pleasing exaggerations.

Woden. A.S. form of Odin (q.v.). Wōdnes daeg is the origin of Wednesday.

WOFFINGTON, MARGARET OR PEC (1718-60). British actress. Born in Dublin, Oct. 18, 1718, she played in Dublin from quite an early age, and made her first London appearance at Covent Garden, Nov. 6, 1740, as Silvia in *The Recruiting Officer*. From 1742-48 she played with Garrick at Drury Lane, and afterwards in Dublin and at Covent Garden, achieving her main success as the fine lady of comedy. She retired in 1757, and died March 28, 1760. Charles Reade gave the name Peg Woffington to one of his novels. Consult *Life*, J. F. Molloy, 1884.



Peg Woffington, British actress

WOKING. Urban dist. of Surrey. On the Wey, 6 m. N. of Guildford, it consists of an old village and a newer quarter which has sprung up near the station on a main line of the Southern Rly. The old parish church contains portions of the original Norman work. The London Necropolis is at Brookwood, and in the neighbourhood also are the ruins of Newark priory. Pop. 26,430.

WOKINGHAM. Borough and market town of Berkshire. It is 7 m. S.E. of Reading, within the area of Windsor Forest, and is served by the Southern Rly. Market day, Tues. Pop. 7,551. See Bearwood.

WOLD (A.-S. weald, wood). Term used in England for open, hilly country. The Yorkshire wolds form a chalk ridge in the E. Riding, extending from Ferriby on the Humber to Flamborough Head. The Lincolnshire Wolds form a chalk ridge extending from Barton-upon-Humber to Spilsby. There are also wolds on the borders of Nottinghamshire and Leicestershire.

WOLF (*Canis lupus*). Member of the dog family. There is probably only one species, though many varieties or races are known.

The European wolf may be regarded as the type. Wolves only occur in the N. hemisphere, with the exception of a race found in the Falkland Islands. In colour the European wolf is brownish grey with lighter under parts, but white and black specimens are occasionally found. It lives mainly in the forests, and is usually found solitary or in pairs; but in the winter packs combine for hunting. It rarely attacks man, but it often raids the flocks.

The American wolf is greyer in colour and tends to become white in the N. districts.

In Alaska a very large race occurs. The timber wolf has a shorter tail, but is only a local race of the grey wolf. See Coyote; Dog.

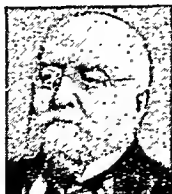
WOLFE, JAMES (1727-59). British soldier. Born at Westerham, Kent, Jan. 2, 1727, he was educated at Greenwich, and in 1741 was commissioned in his father's corps of marines. Transferring to the 12th foot regiment, he fought in Flanders and Prussia, 1742-45. In 1745, by now a brigade major, he fought against Prince Charles Edward, and in the Netherlands, 1746-47. In Jan., 1758, he was appointed to command a brigade in America, where he distinguished himself at the siege of Louisbourg.

Promoted maj.-gen., Jan., 1759, he was given command of the force sent up the St. Lawrence against Quebec. He directed the operations from June 27 until the battle on the Plains of Abraham, in which he was killed, Sept. 13, 1759. His body was brought to England and buried in the church of St. Alfege, Greenwich. A statue of Wolfe was unveiled in Greenwich Park in 1930. See Abraham, Plains of; Quebec; Westerham.



James Wolfe British soldier Artist uncertain. Nat. Port. Gall.

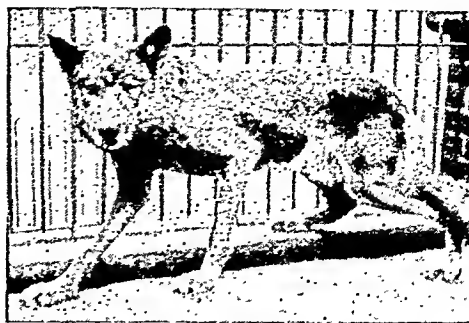
WOLFE-BARRY, SIR JOHN WOLFE (1836-1918). British engineer. Son of Sir Charles Barry, the architect, he was born Dec. 7, 1836, and trained as an engineer under Sir John Hawkshaw. He devoted himself mainly to railway and dock work, and became engineer for the Barry Rly., the Tower Bridge, and for a number of important docks. He was a member of various royal commissions, and his influence led to the establishment of a standards committee in connexion with British engineering. In 1897 he was knighted, and in 1898 took the additional name of Wolfe. Wolfe-Barry died Jan. 22, 1918.



Sir Henry Wolfe, British diplomatist

WOLFE, SIR HENRY DRUMMOND (1830-1908). British diplomatist. Born at Malta, Oct. 12, 1830, he entered the foreign office and was employed in Florence, the Ionian Islands, Bulgaria, Turkey, Egypt, Persia, and Rumania. M.P. for Christchurch, 1874-80, and for Portsmouth, 1880-85, he was a member of the fourth party (q.v.). G.C.M.G. in 1878, P.C. 1885, and G.C.B. 1889, he was British ambassador at Madrid, 1892-1900, and died Oct. 11, 1908.

WOLFHOUND. Name often applied to the borzoi (q.v.) and other deerhounds employed abroad in wolf hunting. The name belongs particularly to the Irish wolfhound. See Deerhound; Dog; Irish Wolfhound.



Wolf. Specimen of the European or Siberian wolf W. S. Berridge, F.Z.S.

WOLFRAM. In mineralogy, an iron manganese tungstate, dark grey to brown in colour. It is the chief source of the metal tungsten (q.v.), and is found in Cornwall, France, N. and S. America, and elsewhere.

Wollaston Land. S.W. portion of Victoria Island (q.v.), British N. America.

WOLLATON HALL. Former seat of Lord Middleton in Nottinghamshire.

Regarded as one of the finest of Elizabethan houses, it was built for Sir Francis Willoughby, 1580-88. It is interesting as being probably the first house built in England with the elaborate stonework decorations borrowed from Italy. It is now the property of the city of Nottingham.

Wollongong. Port and watering place of N.S.W., Australia. It is 49 m. by rly. S. of Sydney. Pop. 8,950.

WOLSELEY, GARNET JOSEPH WOLSELEY, 1st Viscount (1833-1913). British soldier. Born of English ancestry at Golden Bridge, co. Dublin, June 4, 1833, he entered the 12th Foot in 1852, and fought in the Burmese War, 1852-53. He served also in the Crimean War, 1854-56; in the Indian Mutiny, 1857; and in the China expedition, 1860. In command of the Red River expedition in Canada, 1870, he suppressed the insurrection of Riel, and in 1873-74 he conducted the Ashanti campaign.

In 1882 Wolseley was appointed to the command in Egypt on the outbreak of the rebellion of Arabi Pasha, whom he decisively defeated at Tel-el-Kebir.

For this service he was raised to the peerage as Baron Wolseley. His last active service was the Nile Expedition for the relief of General Gordon, 1884-85, at the conclusion of which he was created a viscount. Field-marshal, 1894, and commander-in-chief, 1895-1900, he died March 26, 1913. Wolseley's writings include an autobiography, *The Story of a Soldier's Life*, 1903.

His title passed by special remainder to his elder daughter, Frances Garnet (b. 1872). She founded a college for lady gardeners at Glynde, Sussex, and wrote books on gardening and on the county of Sussex.

WOLSEY, THOMAS (c. 1475-1530). English cardinal and statesman. The son of an Ipswich grazier, also by report a butcher, he distinguished himself at Magdalen College, Oxford, took orders, and was introduced to Henry VII's service by Bishop Fox. In 1511 he became a member of the council of Henry VIII, whose confidence he won. In 1514 he became successively bishop of Lincoln and archbishop of York, and in 1515 lord chancellor.



Viscount Wolseley, British soldier Hated



Thomas Wolsey, cardinal and statesman After Holbein

Wolsey's great aim was to hold the balance between the emperor Charles V and Francis I of France, to make England the arbiter of Europe. But while under his direction, public business was despatched and justice administered with rapidity and thoroughness, his arrogance raised up a host of enemies.

The fatal moment arrived when Henry resolved to marry Anne Boloyne. Wolsey was entrusted with the task of compelling the pope to annul the king's marriage with Catherine of Aragon. When he failed, the king turned against him. In Nov., 1529, he was dismissed from all his offices and deprived of all his honours save the archbishopric of York. A charge of high treason was launched against him, and while journeying south, Wolsey died at Leicester Abbey, Nov. 29, 1530.

WOLSINGHAM. Industrial centre of Durham. It stands on the Wear, 16 m. S.W. of Durham, on the L.N.E. Rly. Woollens and steel are manufactured. Pop. 3,536.

WOLSTANTON. Urban dist. and parish of Staffordshire. In the Potteries, 1½ m. N. of Newcastle-under-Lyme, it is a busy centre of the pottery trade. There are also engineering works and cotton mills. Pop. 29,240.

WOLVERHAMPTON. County borough and market town of Staffordshire. It is 13 m. N.W. of Birmingham on the L.M.S. and G.W. Rlys.

The church of S. Peter is a cruciform building dating partly from the 13th century. In its churchyard is a 12th century Norman shaft, the so-called Danes' Cross. Wolverhampton is the centre of a large trade in been a special manufacture from early times. There are extensive ironworks. A large agricultural trade is carried on, and repairing sheds of the G.W.R. are here. In 1927 the borough boundary was extended. Market days, Wed and Sat. Pop. 131,000.

hardware. Locks and keys have manufacture from early times. There are extensive ironworks. A large agricultural trade is carried on, and repairing sheds of the G.W.R. are here. In 1927 the borough boundary was extended. Market days, Wed and Sat. Pop. 131,000.

WOLVERHAMPTON, HENRY HARTLEY FOWLER, 1ST VISCOUNT (1830-1911). British politician. Born at Sunderland, May 16, 1830, he became a solicitor in Wolverhampton and in London. Elected M.P. for Wolverhampton in 1880, he continued to represent that constituency until raised to the peerage in 1908 as Viscount Wolverhampton. As Sir Henry Fowler he was president of the local government board, 1892-94; secretary of state for India, 1894-95; and chancellor of the duchy of Lancaster, 1905-8. He died Feb. 25, 1911, and was succeeded by his only son.

WOLVERTON. Urban dist. of Buckinghamshire. It is 2 m. E. of Stony Stratford on the L.M.S. Rly. At New Wolverton are the L.M.S. Rly. carriage works. Pop. 14,052.

WOMAN SUFFRAGE. Exercise of the municipal and parliamentary vote by women. In the United Kingdom the first legal enactment which definitely excluded women from the franchise was the Reform Act of 1832, but the disabilities of women for the municipal franchise were removed in 1869.

From 1905 the Women's Social and Political Union, founded in 1902, advertised the suffrage movement by methods which, as time went on, became more and more violent, and resulted in imprisonment. Meanwhile, a suffrage committee had been formed in the House of Commons itself, and the constitutional party, represented by the National Union of Women's Suffrage Societies, redoubled their efforts.

In Oct., 1916, a conference of members of both Houses was appointed to consider the question of a Reform Bill which should alter the basis of the franchise, hitherto based mainly on occupation, and to include the consideration of the admission of women. The conference reported in favour of woman suffrage. The bill embodying the report of the conference, and establishing the right of women to vote at parliamentary elections, became law in Feb., 1918. It imposed a minimum age of 30, but this disability was removed in 1928, when an Act gave women the vote on the same terms as men.

Woman suffrage had been exercised in New Zealand since 1893. In Australia the suffrage for the Federal Parliament was conferred on women by the constitution in 1902. In the U.S.A. the first State to accord the suffrage to women was Wyoming in 1869. In 1919 all women became eligible. In Canada also the suffrage was obtained by instalments. See Franchise; Reform; Representation; Vote.

WOMBAT (Phascologydae). Genus of marsupial mammals. Found only in Australia and Tasmania, it includes four species. They are about 2 ft. long, and somewhat bear-like, with a strikingly bulky and heavy body, short broad head, small upstanding ears, and a rudimentary tail. The fur is thick and usually coarse, the colour ranging from black to yellowish brown. They live in burrows and feed at night upon grass and roots.

WOMBWELL. Urban dist. and colliery centre of Yorkshire (W.R.). It is 4 m. S.E. of Barnsley, and is served by the L.N.E. and L.M.S. Rlys. Pop. 19,035.

WOMBWELL, GEORGE (1778-1850). British showman. He was born at Maldon in Essex, and in 1804 started his career as a showman, afterwards founding the menageries which bore his name. He died Nov. 16, 1850.

WOOD. In commercial use the trunk and larger branches of a tree when it is divested of its bark and sawn up. Wood owes its usefulness to the fact that the fibro-vascular bundles are lignified and hard, and their comparative abundance accounts for the relative hardness or softness of different species. Besides the more ponderous woods used for structural purposes, a large number are used in cabinet-making; others when shredded or ground up afford important dye materials. See Mahogany; Oak; Timber, etc.; also Inlaying, illus. p. 770.

WOOD, ELLEN (1814-87). British novelist, familiar as Mrs. Henry Wood. Born at Worcester, Jan. 17, 1814, she spent twenty years in France before settling in London in 1856. In 1860 her novel Danesbury House won a prize of £100 offered by the Scottish Temperance League for a tale to inculcate temperance. East Lynne, which achieved extraordinary success, followed in 1861. Her works include Mrs. Halliburton's Troubles, 1862; The Channings, 1862; and

Johnny Ludlow, 1874. After 1867 her novels appeared in The Argosy, of which magazine she was editress and proprietress. She died Feb. 10, 1887.



Sir Evelyn Wood
British soldier
Russell

to India, where in 1858 he won the Victoria Cross. He served in the Ashanti campaign, 1874, in the Kaffir, Zulu, and Boer Wars, 1879-81, commanded a brigade in the Egyptian campaign, 1882, and from 1883-85 was sirdar of the Egyptian army. He died Dec. 2, 1919. He wrote an autobiography, From Midshipman to Field-Marshal, 1906.

WOOD, SIR HENRY JOSEPH (b. 1869). British orchestral conductor. Born in London, March 3, 1869, he started his career as an organist, attracting attention by his recitals in 1883 and 1885. He studied at the Royal Academy of Music, 1886-87, composed songs and cantatas, and made his debut as a conductor in 1889. In 1895 he founded the Promenade Concerts in Queen's Hall, London. The Queen's Hall Symphony Concerts were also under his baton from 1897. Wood was knighted in 1910.



Sir Henry Wood,
British conductor

WOOD, SIR KINGSLEY (b. 1881). British politician. The son of a Wesleyan minister, he became a solicitor. In 1911 he was elected by Woolwich to the London County Council, and in 1918 was chosen M.P. for West

Woolwich, being knighted in the same year. By then he was known as an authority on national insurance questions. He was parliamentary secretary to the ministry of health during the Conservative administration, 1924-29.

WOOD, LEONARD (1860-1927). American soldier. Born Oct. 9, 1860, at Winchester, N.H., he took a medical degree at Harvard in 1884, and entered the U.S.A. army medical service. Military governor of Cuba, 1899-1902, he later served in the Philippines. As chief of staff of the American army, 1910-14, he reorganized it, and in April, 1914, commanded the eastern division. He served in France with the American forces, and in 1921 became governor-general of the Philippines. He died Aug. 7, 1927.

WOOD, MATILDA CHARLOTTE (1833-1915). British actress, better known as Mrs. John Wood. Born in Liverpool, she made her stage debut at Southampton in 1841, but scored her first great success as a burlesque actress in the U.S.A. Returning to England about 1853, she appeared at The Princess's, London. In 1869 she took over the St. James's Theatre, which she ran successfully for four years. At the old Court Theatre she was successful in the Pincro farces. She died Jan. 11, 1915.



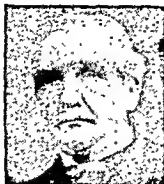
Mrs. Henry Wood,
British novelist
After R. Easton



Mrs. John Wood,
British actress



Wolverhampton. Parish Church of S. Peter, dating from the 13th century



1st Viscount
Wolverhampton,
British politician
Russell

Woodbine or **WOODBIND**. Name originally of general application to twining plants, but now restricted to the honeysuckle (q.v.).

WOODBRIDGE. Market town and urban dist. of Suffolk. It stands on the Dehen, 8 m. N.E. of Ipswich, and is a station on the L.N.E. Rly. There is a fine Perpendicular church. The town is chiefly an agricultural centre. Edward Fitzgerald (q.v.) lived here for many years. Market day, Thurs. Pop. 4,598.

Woodchuck. Popular name of a species of marmot (q.v.) occurring in N. America.

WOODCOCK (*Scolopax rusticula*). British wild bird. Belonging to the plover tribe, it is closely allied to the snipe. It is about 14 ins. long. The plumage is reddish brown barred and striped with black on the upper parts, and pale brown barred with darker brown below. Its long and straight beak is a characteristic feature. It occurs in most parts of Great Britain, the majority of the birds being winter migrants. The woodcock keeps under cover during the day, and visits its feeding grounds at dusk. Its food consists of worms and grubs procured by probing damp soil with its beak. It is esteemed for the table.



Woodcock. Long-beaked British gamebird of the plover tribe

WOODCUT. Print taken from a wooden block. It is obtained by cutting away the wood to a certain depth from all the blank portions between and around the lines of a design. The lines are thus left standing in relief, and so preserve a surface from which a print can be taken. This method was used in early book illustrations. See Wood Engraving.

WOODCUTS. Hamlet of Dorset. The site of a prehistoric village, it is 6 m. N.W. of Cranborne. With neighbouring villages it was dug 1884-90, when bronze and iron implements, Samian ware, Roman coins, and hypocausts attested the Romano-British occupation of a pre-Roman settlement. There are traces of a prehistoric road here.

WOOD ENGRAVING. Method of obtaining a wooden block from which prints can be taken. A development of wood-cutting, it is a reversal of that process, the lines being cut into the block, instead of the wood between them being cut away, and thus printing white. Thomas Bewick temporarily revived the use of the wood block in the late 18th cent. and introduced the graver instead of the knife as the cutting tool. About 1860 there was a great revival, encouraged by the brothers Dalziel and others, in the art for book and magazine illustrations, but it was later superseded by mechanical methods of reproduction. A number of modern British and Continental artists have again revived the art, with considerable success. See Bewick, T.; Woodcut.

WOODFORD. Urban dist. of Essex. On the edge of Epping Forest, it is a suburb of London, from which it is 11 m. distant. It is served by the L.N.E. Rly. Woodford Wells and Woodford Green are parishes in the district. Pop. 21,245.

WOOD GREEN. Urban dist. of Greater London, in Middlesex. Between Hornsey and Palmer's Green, it is 5 m. from King's Cross on the L.N.E. Rly. Pop. 51,960.

WOODHALL SPA. Urban dist. and inland watering place of Lincolnshire. It is 6 m. from Horncastle, on the L.N.E. Rly., and is frequented for its bromo-iodine springs. The latter were accidentally discovered during an unsuccessful boring to find coal, and the yield is from 16,000 to 20,000 gallons a day. The place is beautifully situated on sandy soil amid extensive pine and birch woods. Pop. 1,635.

WOODLOUSE (*Oniscus*). Genus of equal-footed crustaceans (*Isopoda*) which have become adapted to a terrestrial life and the breathing of damp air. It has seven pairs of feet, all adapted for walking, and two pairs of antennae, though, as a rule, only one pair is actively employed. It is nocturnal in its habits, and feeds upon decaying vegetation, seedlings, and ferns, and frequently attacks ripe fruit on walls.

WOODPECKER (*Picidae*). Family of picarian birds. They are distinguished by feet adapted for climbing, and a modification of the barbed tongue which enables it to be thrust forward to extract insects from crevices. They include many species, widely distributed in temperate and tropical regions. In Great Britain there are three distinct species.

The green woodpecker (*Picus viridis*) is common in S. and mid England. It excavates a hole in a tree trunk as a nesting site, usually selecting a rotten tree. The plumage is olive green above, crimson on the crown of the head, black on the face, yellow on the rump, and greenish grey below. The greater spotted woodpecker (*Dendrocopos major*) is smaller and less common.

WOOD PIGEON or **RING DOVE** (*Columba palumbus*). Largest of the British wild pigeons, common in Europe, Asia, and North Africa. It measures about 17 inches in length. The plumage is ashy blue above, ashy to white beneath, and the beak is reddish. The name ring dove refers to a semicircular white marking at the back of the neck. See Pigeon.

WOODRUFF (*Asperula odorata*). Perennial herb of the order Rubiaceae. A native of Europe and N and W. Asia, it has a creeping root-stock, and sends up many short stems. The lance-shaped, firm, smooth leaves are arranged in whorls at intervals up the stem. The tiny white funnel-shaped flowers are clustered at the top. The whole plant in drying gives off the fragrance of new-mown hay.



Woodruff. White flowers of the fragrant herb

with runners. The stems are about two feet high, with a few short leaves, and the leaves from the root-stock are grass-like, often a foot long. The pale brown flowers are very minute, in loose clusters.

WOODS, FRANK THEODORE (b. 1874). English prelate. Born Jan. 15, 1874, he was ordained in 1897 and, after serving in Eastbourne and Huddersfield as a curate, he became, in 1901, vicar of a London parish. He then went to Manchester and later to Auckland, before becoming vicar of Bradford in 1913. In 1916 he was chosen bishop of Peterborough, and in 1924 was translated to Winchester.

WOODSIA. Genus of ferns of the natural order Polypodiaceae. Natives of the N.

temperate and Arctic regions, the Andes and S. Africa, they have short tufted root-stocks, and the frond-stalk is usually jointed near the base. There are from three to five heaps of spore capsules on the back of each pinna, each enclosed in a bag which splits up later into hairlike segments.



Woodpecker. Two British species. 1. Greater spotted. 2. Green woodpecker. W. S. Berridge, F.Z.S.



WOOD SORREL (*Oxalis acetosella*). Perennial herb of the order Geraniaceae. A native of Europe, Asia, N. Africa, and N. America, it has a slender, creeping, scaly root-stock, from which the leaves and flowers arise direct, on long slender stalks. The leaves are divided into three heart-shaped leaflets, after the manner of a clover leaf. The leaflets fold and droop close to the stalk in darkness and rain. The solitary flowers of the wood sorrel are white, and they are delicately veined with purple.

WOODSTOCK. Borough of Oxfordshire. It is 8 m. N. of Oxford, on the G.W. Rly, the station being Blenheim and Woodstock. Of its famous manor house, the last vestige disappeared in 1723, soon after the completion of Blenheim (q.v.). Fair Rosamund (q.v.) is said to have lived at Woodstock in a bower built for her by Henry II. Here the Black Prince and other princes were born. Pop. 1,510.

WOODSTOCK. Town of New Brunswick, Canada. It stands on the St. John river, 64 m. from Fredericton, and is a station on the C.P. Rly. It is the centre of a farming dist. Pop. 3,380.

WOOD SWALLOW or **SWALLOW SHRIKE** (*Artamus*). Genus of about 17 species of birds, natives of India, Australia, and the intervening countries. Their family relationship has not been determined satisfactorily. They have a long, pointed, and slightly curved bill with wide gape, long wings, and a short tail. They are black, blue, grey, or rufous above, and more or less white beneath. They catch insects on the wing, and nest in forks or holes of trees.



Wood Sorrel. Flowers and triolate sensitive leaves

WOOD SWALLOW or **SWALLOW SHRIKE** (*Artamus*). Genus of about 17 species of birds, natives of India, Australia, and the intervening countries. Their family relationship has not been determined satisfactorily. They have a long, pointed, and slightly curved bill with wide gape, long wings, and a short tail. They are black, blue, grey, or rufous above, and more or less white beneath. They catch insects on the wing, and nest in forks or holes of trees.

WOODVILLE, RICHARD CATON (1856-1927). Anglo-American painter and illustrator. Born in London, Jan. 7, 1856, son of a Baltimore artist, he studied at Düsseldorf. As a war artist he saw much service in the East, especially in Turkey, 1878, and Egypt, 1882, and he was a popular contributor to English illustrated journals. From 1879 he exhibited.



Wood Swallow, the masked species. W. S. Berridge, F.Z.S.



Woodsia. Fronds and roots of woodsia ilvensis

battle pictures regularly at the R.A. He published *Random Recollections*, 1913. Woodville died Aug. 17, 1927.

WOODWORM. Popular name for the larvae of various longicorn and lamellicorn beetles, *Xestobium*, etc., which feed in wood. See *Beetle*; *Longicorn*.

WOOKEY HOLE. Dolomitic cave near Wells, Somerset. It contains palaeolithic implements and fossil bones, including reindeer, mammoth, woolly rhinoceros, and cavebear. Exploration from 1910 onwards showed it had been occupied from 200 B.C. to A.D. 400.

WOOL. Curly variety of hair on sheep and other animals distinguished by its scaly surface. The world's annual yield of raw wool is computed at about 3,000 million lb., of which some 40 p.c. is produced in countries of the British Empire. Outside the industrial countries, Australia, New Zealand, and the Cape are the chief sources of wools of fine and medium quality, and Argentina and Uruguay are the only considerable external sources of supply.

The finest wools are borne by a breed of sheep mainly grown for their wool—the merino type. A medium type of wool called crossbred is obtained from mixed breeds of English and merino. Raw wool is greasy with the suint or perspiration of the animal, and is loaded also with dust. The raw material is bought with an eye to its yield of clean wool.

Periodical auctions of imported wool are held in London and Liverpool. Antwerp and Havre are markets especially for S American wool. Boston is the principal wool market of the U.S.A. Bradford, Yorkshire, is the centre of the greatest wool-manufacturing district in the world. The woollen and worsted manufacturing industries employ over 257,000 persons in the United Kingdom.

WOOLEN AND WORSTED. Woollen is uncombed wool. To make woollen yarn the wool is put through the process of carding. Woollen cloth is not synonymous with all-wool cloth, since by legal sanction woollen is understood to mean material containing wool and manufactured according to the carding system. Worsted is yarn from wool combed for the extraction of fibre below a certain average of length. The longer material thus isolated is spun in such a way as to keep its fibres parallel. Owing to the method of its manufacture, woollen is a more plastic material than worsted and susceptible of much greater changes after arriving at the woven state. See *Blanket*; *Carpet*; *Merino*; *Sheep*; *Spinning*; *Weaving*; *Worsted*.

WOOLER. Town of Northumberland. Situated 15 m. S. of Berwick-upon-Tweed, it has a station on the L.N.E. Rly., and is an agricultural centre. Pop. 1,577.

WOOLLETT, WILLIAM (1735–85). English engraver. Born at Maidstone, Aug. 15, 1735, he studied under Tinney in London and at the St. Martin's Lane Academy. Engravings after the landscapes of Richard Wilson were his first important work. Later he engraved Benjamin West's *Death of Wolfe*, and other historical and genre pictures. In 1775 he was appointed engraver to George III. He died May 23, 1785.

WOOLMER FOREST. Heath of Hampshire and Sussex. Some 7 m. long from N. to S., and 3 m. wide, it lies mostly in Hampshire, S.E. of Alton. In the form Wolmer it gives the title of viscount to the eldest son of the earl of Selborne (q.v.).

WOOLNER, THOMAS (1825–92). British sculptor and poet. Born at Hadleigh, Suffolk, Dec. 17, 1825, he joined the Pre-Raphaelite

Brotherhood, and contributed poems to *The Germ*. In 1857 medallion portraits of Tennyson (Trinity College, Cambridge) and Carlyle established his reputation. He became A.R.A. in 1871, R.A. in 1874, and modelled busts or statues of most of the great men of his time. He died Oct. 7, 1892.

WOOLSAK. In the British Parliament, seat of the lord chancellor when presiding over the sittings of the House of Lords. At an early date a sack of wool was placed in the House as a seat, and in time this became the official seat. To-day the sack is a large square cushion of wool, covered with red cloth. See *Lord Chancellor*; *Lords*; *House of*.



Woolsock, standing before the throne in the House of Lords

WOOLWICH. Met. bor. of the co. of London. It lies on the S. bank of the Thames, 9 m. below London Bridge, and is served by the Southern Rly. It includes the districts of Woolwich proper, Plumstead, and Eltham.

North Woolwich, on the other side of the river, is connected by ferry and subway. In the Royal Dockyard, used since 1569 for military stores, the *Great Harry* was launched in 1515. The Royal Arsenal occupies an area $3\frac{1}{2}$ m. long by 1 m. broad. Since the Great War the making of armaments has diminished. The Arsenal (q.v.) football club, founded 1886, now has its ground at Highbury.

At Woolwich is the Royal Military Academy, where officers of the artillery and engineering branches of the British army receive their training. There are handsome municipal buildings, public libraries, and several theatres. The Rotunda houses a collection of ancient and modern guns, models, etc. During the Great War the hor. witnessed an enormous industrial expansion, thousands of houses being built for munition workers. Pop. 140,389.

WOOLWORTH, FRANK WINFIELD (1852–1919). American business man. He was born at Rodman, N.Y., April 13, 1852, and at the age of 27 invested his total capital of £60 in a store in Utica devoted to articles retailed at low prices. After ten years he opened another "sixpenny store," followed by others, until in 1919, the year of his death, the Woolworth Corporation controlled 800 stores in the U.S.A. and Canada, and about 60 in Great Britain. He erected in Broadway the Woolworth Building, for long New York's highest skyscraper. He died April 7, 1919, leaving a fortune of £9,000,000.



Frank Woolworth, American business man

WOOTTON, FRANK (b. 1893). Australian jockey. Born in Australia, Dec. 14, 1893, he rode his first winner, *Retrieve*, in England at Folkestone, Aug. 23, 1906. In the seasons of 1909, 1910, 1911, and 1912 he headed the list of winning jockeys. By 1914 he had relinquished the occupation of jockey for that of

trainer, eventually taking over his father's training establishment at Epsom.

WORCESTER. City, county borough, and county town of Worcestershire. On the left bank of the Severn, 22 m. S.W. of Birmingham, and served by the G.W. and L.M.S. Rlys., the city has been the seat of a bishop since 680. The cathedral dates from the 13th century, and was extensively restored, 1851–74. It has a fine central tower, 196 ft. in height, completed in 1374. The transepts are Norman and Perpendicular, and beyond the crossing is a screen, by Sir Gilbert Scott, which cuts off the chancel. This and the Lady Chapel beyond contain carved 14th century stalls. Under the choir and aisles is a fine crypt. The old refectory forms part of the King's School. Near the cathedral is Edgar Tower, all that remains of the castle. Gloves are manufactured, and there is a trade in hops. Pop. 49,160. See *Aisle*.

BATTLE OF WORCESTER. This was fought between the English and the Scots, Sept. 3, 1651. After his coronation at Scone, Charles II left Stirling on July 31 for England, where he hoped for further support, and entered Worcester on Aug. 22. There he was attacked by Cromwell and his army of Scots, estimated at 16,000, was scattered.



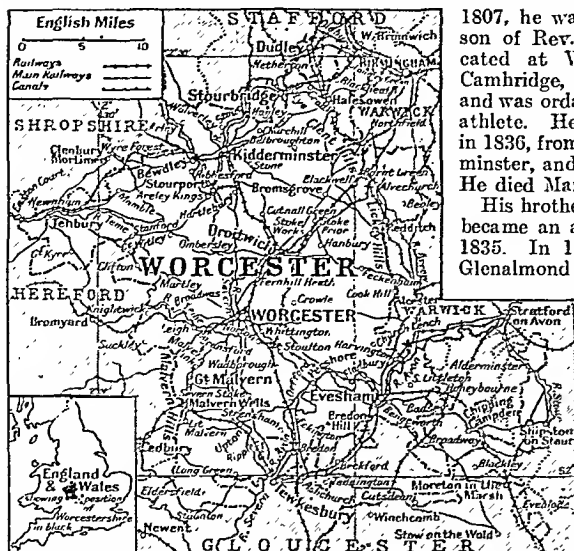
Worcester. The cathedral from the right bank of the Severn. It dates from the 13th century

WORCESTER CHINA. Porcelain ware produced in the factory established at Worcester, 1751. The works were founded by John Dale, a scientific chemist and a good painter. Soft paste porcelain mixed with staeatite was employed. Early pieces include mugs with portraits printed in black, purple, and blue. See *Chinaware*.

WORCESTER. City of Massachusetts, U.S.A. It stands on the Blackstone river, 45 m. W.S.W. of Boston, and is served by the New York, New Haven and Hartford and other rlys. It became a city in 1848. Pop. 190,757.

WORCESTER. British training ship. Officially known as the *Thames Nautical Training College*, H.M.S. Worcester, it lies off Greenwich. Established about 1860, the ship is a wooden man-of-war. There is also a torpedo-boat destroyer of this name of 1,325 tons, with four 4.7-in. guns.

WORCESTER, EDWARD SOMERSET, 2ND MARQUESS OF (1601–67). English nobleman and inventor. He early took a great interest in experimental mechanics and mathematics, though his position brought him into political prominence and interfered greatly with his experiments. During the civil war he was sent to Ireland to treat secretly with the Roman Catholics for troops to fight in England. He died April 3, 1667. Worcester's chief claim to fame is due to his experiments in connexion with the use of the power of steam. Consult *Life*, *Times*, and *Scientific Labours of the 2nd Marquis of Worcester*, H. Dicks, 1865.



Worcestershire. Map of the midland county famous for its orchards

WORCESTERSHIRE. County of England. In the west midlands, it has an area of 716 sq. m. On the Herefordshire border are the Malvern Hills; in the S.E. is Bredon Hill, a spur of the Cotswolds; and in the N. and N.E. are the Cleat Hills and Lickey Hills. The Severn traverses the entire length of the county from N. to S. and the Avon waters the S.E. portion. Other rivers are the Stour and the Teme. A large area is under orchards, plums, apples, and pears being extensively grown. Hops are cultivated, also wheat, oats, and potatoes, and there are many market gardens. The manufacturing district of the N. forms part of the Black Country. The G.W. and L.M.S. Rlys., together with several canals, serve the co. Worcester is the county town. Other places include Dudley, Kidderminster, Droitwich, Evesham, Bewdley, Stourbridge, and Malvern. Pop. 405,842.

WORCESTERSHIRE REGIMENT. Regiment of the British army. Originally the 29th and 36th Foot, it was raised in 1694, and while one battalion helped to win the battle of Ramillies, 1706, the other was involved in the disaster at Almanza, 1707. The regiment served against the Jacobites in 1715 and 1745, and shared in the defence of Gibraltar in 1727. It fought through the American War of Independence and in the Peninsular War. In 1899-1902 it did good work in S. Africa.

During the Great War six regular and special reserve battalions, two territorial, and seven service battalions were engaged. In 1914 the regiment's outstanding feat was the magnificent stand of the 2nd batt. in the first battle of Ypres (q.v.). This and other battalions fought with distinction in France and elsewhere throughout the War. The regimental depot is at Worcester.

WORDE, WYNKYN DE (d. 1534). English printer. Born at Worth, Alsace, his real name appears to have been Jan van Wynkyn. He took over Caxton's business at Westminster in 1491, set up business at the sign of The Sunne, in Fleet Street, 1500, and removed to St. Paul's Churchyard in 1509. Among the 600-700 books, pamphlets, and new editions issued by him was an English version of the *De Proprietatibus Rerum* of Bartholomew Anglicus, the first book to be printed on paper made in England.

WORDSWORTH, CHRISTOPHER (1807-85). British prelate. Born in London, Oct. 30,

1807, he was a nephew of the poet, being a son of Rev. Christopher Wordsworth. Educated at Winchester and Trinity College, Cambridge, he graduated as senior classic, and was ordained. He was also famous as an athlete. He was made headmaster of Harrow in 1836, from 1844-69 he was canon of Westminster, and from 1869-85 bishop of Lincoln. He died March 20, 1885.

His brother, Charles Wordsworth (1806-92), became an assistant master at Winchester in 1835. In 1846 he went to Trinity College, Glenalmond as its first warden, and in 1852 became bishop of St. Andrews.

WORDSWORTH, WILLIAM (1770-1850). British poet. Born at Cockermouth, Cumberland. April 7, 1770, he was educated at the Hawkshead Grammar School and at St. John's College, Cambridge. In 1790 he made a walking tour on the Continent, and the next year his enthusiasm for the revolutionary cause prompted him to return to France, where he spent 13 months. He has given a full account of his connexion with the revolutionary movement and of other formative influences in his early life in his autobiographical poem *The Prelude*. He opened his career as poet in 1793 with *An Evening Walk* and *Descriptive Sketches*.

The *Lyrical Ballads*, 1798, were produced in conjunction with Coleridge. After a visit to Germany, Sept., 1798-April, 1799, he settled at Grasmere, Westmorland; in 1802 he married Mary Hutchinson; and, after three years at Allan Bank, 1808-11, he took up his residence in 1813 at Rydal Mount, his home for the rest of his life. In 1800 he had published a second edition of *Lyrical Ballads*. This was followed, 1807, by two volumes containing, in such poems as the *Ode to Duty* and the *Ode on the Intimations of Immortality*, some of his finest work; in 1814 by a long philosophical poem, *The Excursion*; and in 1815 by a romantic narrative poem, *The White Doe of Rylstone*. In 1843 he succeeded Southey as poet laureate, and he died April 23, 1850.

His only sister, Dorothy Wordsworth, (1771-1855), shared in his poetical labours and herself produced journals of her life in the Lake District and her tour in Scotland.

WORKINGTON. Bor., seaport, and market town of Cumberland. It stands at the mouth of the Derwent, 34 m. from Carlisle, and is served by the L.M.S. Rly. The chief industries are iron working and coal mining, the mines here extending below the sea. There are shipbuilding yards, steel works, engineering works, and some fishing. Market days, Wed. and Sat. Pop. 26,480.

WORKMEN'S COMPENSATION. Payments made to workers (or their dependents) who are killed or injured in the course of their employment. They are regulated by a series of Acts of Parliament, which were consolidated in 1925. To be eligible for compensation the worker's salary or wages must not exceed £350 a year. The amount payable is calculated according to rules laid down by law. For total incapacity it must not exceed 30s. a week, with smaller sums for partial incapacity. In case of death not more than £600 in all can be paid to the widow and children, and for a widow only, not more than £300. Most firms cover themselves against this liability by insurance.

WORKS. OFFICE OF. English government department. It is under a commissioner and has charge of all the royal palaces and parks, public offices, and other buildings which are the property of the nation as a whole. The headquarters are in Storey's Gate, London, S.W. There is a Scottish office of works, at 4-5, Drumshugh Gardens, Edinburgh.



Christopher Wordsworth, British prelate

WORKSOP. Market town and urban dist. of Nottinghamshire. It is on the borders of Sherwood Forest, 15 m. from Sheffield, on the L.N.E. and L.M.S. Rlys. The priory, founded about 1100, survives in the nave of S. Cuthbert's church, a splendid piece of Norman work, the lady chapel (restored in 1922 as a war memorial), and an old gatehouse. The manor house replaced the one in which Mary Queen of Scots was imprisoned. The town is an agricultural centre. Worksop College is a public school. Market day, Wed. Pop. 23,206.

WORLD, THE. Word used as an alternative for earth. Usually the term implies a reference to the human aspects of the habitable globe, as in the figurative use of the word in the phrase the world of letters. Physically the earth is a planet, while the round world is the home of man. See Africa; America; Antarctic Exploration; Arctic Exploration; Asia; British Empire, etc.

WORM. In popular usage, word denoting any long, slender animal, whether reptile (slow-worm), mollusc (shipworm), insect (glow-worm, silkworm, wireworm, blood-worm), entozoan (tape-worm, round-worm), earthworm. See Ascaris; Bladder Worm; Earthworm; Filaria; Lob Worm; Serpula, etc.

In mechanics, worm is the name given to a helical thread or threads cut on a shaft to transmit motion to, or receive motion from, a cog wheel. See Gear.

WORMS. City and river port of Hesse, Germany. It stands on the left bank of the Rhine, 10 m. from Mannheim. The Romanesque cathedral dates mainly from the 11th and 12th centuries. Machinery and leather are manufactured. Early in the 6th century Worms became the seat of a bishop, who ruled a small territory around it until 1805. Many of the imperial diets were held here, the most notable being that of 1521, at which Martin Luther appeared before the emperor Charles V. Pop. 47,015.



Worms. Cathedral of SS. Peter and Paul, mainly 11-12th century

WORMWOOD (*Artemisia absinthium*). Aromatic perennial herb of the order Compositae. A native of Europe, Asia, N. Africa, and N. America, it has grooved and angled stems about 3 ft. high.

WORMWOOD SCRUBS. District of W. London. It lies N. of Shepherd's Bush (q.v.), with a station, St. Quintin Park, on the L.M.S. Rly. It gives its name to an open space used as a recreation ground. Here is a large prison. See London.

WORSBOROUGH. Urban dist. of Yorkshire (W.R.). It is 3 m. S. of Barnsley on the L.N.E. Rly. The industries include collieries and steel works. Pop. 12,720.



Worcestershire Regiment badge

WORSTED. Yarn from wool, combed for the extraction of fibre below a certain average of length. The name is taken from the Norfolk village of Worstead. See Wool.

WORTH, CHARLES FREDERICK (1825-95). British dress designer. Born at Bourne, Lincolnshire, he was apprenticed to Swan & Edgar, London, and then served in a wholesale silk house in Paris, 1846-58. In partnership with a Swede, he then set up in business as a dressmaker and ladies' tailor, and, his genius for design having attracted the notice of the Empress Eugénie, rapidly achieved fortune. He died March 10, 1895.

WÖRTH. Village of Alsace, France. It is 12 m. from Weissenhurg (Wissembourg), and is famous as the scene of a French defeat, Aug. 6, 1870. The French call the battle Reichshofen. See Franco-Prussian War.

WORTHING. Borough and watering place of Sussex. Situated 10½ m. from Brighton and 57 from London, on the Southern Rly., with two stations, Worthing and West Worthing, it has an extensive marine parade, a pier, and good bathing facilities. At Broadwater is the fine cruciform church of S. Mary. Fruit and flower growing are carried on. The bor. includes Broadwater, and a further enlargement brought Goring and Durrington within it. Pop. 37,500.

WORTHINGTON-EVANS, SIR LAMING (b. 1865). British politician. Born Aug. 23, 1865, he became a solicitor in 1890, and in 1910 was elected M.P. for Colchester. On the outbreak of the Great War he obtained a military administrative position. Controller of the foreign trade department at the foreign office, 1916, he was promoted to be parliamentary secretary to the ministry of munitions, became minister of blockade, 1918, minister for pensions, 1919, minister without portfolio, 1920, secretary for war, 1921-22, and postmaster-general, 1923-24. From 1924-29 he was secretary for war. In 1916 he was made a baronet.

WOTTON, SIR HENRY (1568-1639). English diplomat and poet. He became an agent of the earl of Essex, was knighted in 1603, and acted as ambassador at Venice, 1604-12, 1616-19, and 1621-24. He was employed on diplomatic missions to France, 1612; The Hague, 1614; Vienna, 1620. He became M.P. for Appleby, 1614; was provost of Eton, 1624-39; and M.P. for Sandwich, 1625. He died at Eton, Dec., 1639. His poems were posthumously issued.

WOUNDWORT (*Stachys sylvatica*). Perennial herb of the order Labiatae. A native of Europe, Siberia, and the Himalayas, it has a creeping root-stock and branching stems about three feet high. The large, heart-shaped leaves have coarse toothed edges and are covered with soft bristles: the upper leaves are lance-shaped. When bruised, the plant gives out a strong, fetid odour. The tubular, dark crimson or red-purple flowers are in whorls around the upper part of the stem.

WOUWERMAN, PHILIP (1619-68). Dutch painter. Born at Haarlem, he studied under his father, P. J. Wouwerman, and Jan Wynants. He painted figures and animals with great technical skill and industry, and is represented in most of the European galleries. He lived and died at Haarlem.

WRANGEL, PETER, COUNT (1879-1928). Russian soldier. Born in St. Petersburg, he entered the army and served in the Russo-Japanese War. In the Great War he was first a colonel of cavalry and later general of a division. After the Bolsheviks came into power he sided with Denikin, succeeding that general as leader of the anti-Bolshevik forces, by whom, however, he was defeated in 1920. He died in Brussels, April 24, 1928.



Count Peter Wrangel, Russian soldier

WRANGELL OR WRANGEL ISLAND. Island in the Arctic Ocean, off the N.E. coast of Soviet Asia. It is situated in lat. 71° N. and long. 179° E., and is separated from the mainland by Long Strait. It was discovered by an Englishman named Kellett in 1849, and named after a Russian explorer named Wrangel. It now belongs to Russia.

The Wrangell Mts. are a group of volcanic mts. in Alaska, at the great bend of the Copper river. Wrangell Peak is 14,005 ft. high.

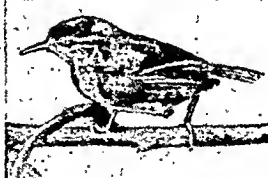
WRANGLER. One who wrangles or disputes. The term was applied at an early date in Cambridge University to those who took part in the disputations. Later it was given to an undergraduate taking a first class in Part I of the mathematical tripos. Until 1909 the title senior wrangler was given to the undergraduate who headed the list. Since that date the successful candidates have been classed into divisions, the names in each being arranged in alphabetical order.

WRASSE. Family of fishes (Labridae), notable for their thick lips and beautiful coloration. They include many species, and are found about rocky shores and coral reefs. The majority feed upon molluscs and crustaceans, and are provided with powerful crushing teeth. Typical wrasses are found in the Mediterranean.

Wrath, CAPE. Headland of Sutherlandshire, the N.W. extremity of Scotland. It is 523 ft high and has a lighthouse.

WREKIN.

Hill of Shropshire, 2½ m. S. of Wellington. The summit is 1,335 ft. high and commands an extensive view. Wrekin College is a public school.

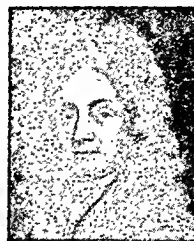


Wren. Small song bird, familiar in British hedgerows W. S. Berridge, F.Z.S.

WREN (Troglodytes parvulus). Small insectivorous bird of the family Troglodytidae. It is a native of Europe, Asia, and N Africa, and a familiar British bird. About four inches in length (the male slightly larger), it is brown in colour, pencilled with darker and lighter tints. Its short, cocked-up tail is a distinctive feature.

WREN, SIR CHRISTOPHER (1632-1723). English architect. Born at East Knoyle, Wilts, Oct. 20, 1632, in 1657 he became professor of astronomy at Gresham College, and in 1660 Savilian professor of astronomy at Oxford. He did not apply his talent for drawing to architecture until 1661, and the chapel of Pembroke College, Cambridge, was his first building, 1663. His first design for S. Paul's, 1673, was rejected, but in 1675 an

amended version was approved. He was knighted in 1672, and in 1685 he became M.P. for Plympton. He died Feb. 25, 1723, and was buried in S. Paul's Cathedral (q.v.).



Sir Christopher Wren English architect After Kneller

Besides S. Paul's Wren designed 52 London churches and 36 Companies' halls: the Monument; the Ashmolean, and Sheldonian Theatre, Oxford; the west towers of Westminster Abbey; and restored Salisbury and Rochester cathedrals.

WRESTLING. Form of athletic exercise. Various styles of wrestling exist, one of the most popular being the catch-as-catch-can (Lancashire or free) style. Tripping is included, as is struggling on the ground. A fall is obtained when both shoulders are made to touch the mat at the same moment. In the Greco-Roman style all holds are taken above the waist, tripping or the offensive use of legs and feet is prohibited, and ground wrestling is encouraged.

The Cumberland and Westmorland stylo requires the taking of a preliminary hold before the struggle begins. Each contestant passes his right arm under the other's left, and the hands are joined across the spine, giving to both an equal hold. A wrestler is considered down when any part of the person other than the feet touches the ground. Tripping is an essential feature. See Jujitsu.

WREXHAM. Borough and market town of Denbighshire, Wales. It is 12 m. S.W. of Chester, and is served by the G.W. and L.N.E. Rlys. The town has grown with the development of the neighbouring coalfields. The 15th century church of S. Giles has a magnificent W. tower, one of the Seven Wonders of Wales. Its N. porch was restored in 1901 by graduates of Yale in honour of Elihu Yale, who was buried here. The chief industries of the town are brewing, malting, and tanning. Market days, Mon., Thurs. and Sat. Pop. 18,703.

WRIGHT, SIR ALMROTH EDWARD (b. 1861). British scientist. From 1893-1902 he was professor of pathology at the Army medical school, Netley, and later was professor of experimental pathology, London University, and principal of the institute of pathology at S. Mary's Hospital. He carried out a series of important investigations on inoculation by dead cultures against typhoid, etc., and during the Great War his methods proved of great value against wound infection. Knighted and elected F.R.S. in 1906, he wrote a number of books on inoculation and other subjects. These include System of Anti-Typhoid Inoculation and Studies in Immunisation.

WRIGHT, ORVILLE (b. 1871). American airman. Born at Dayton, Ohio, Aug. 19, 1871, from 1900 onwards he devoted himself to the solution of the problem of human flight, with his brother, Wilbur Wright. The latter died of typhoid fever in May, 1912.

The Wright brothers began their famous gliding experiments on the sand dunes at Kitty Hawk, N. Carolina, and by the end of 1902 had practically solved all the problems of



Sir Almroth Wright, British scientist Russell



Orville and Wilbur Wright, American pioneers of flight

acroplane control. To the glider they built the brothers added a petrol engine, and on Dec. 17, 1903, they made four flights, the highest being 852 ft. See Aeronautics.

WRIGHT, WHITAKER (d. 1904). British financier. He was sentenced in London, Jan. 26, 1904, to seven years' penal servitude for frauds on the shareholders and creditors of the London and Globe Finance Corporation by the issue of fraudulent balance sheets. The company collapsed in 1901, and two other Whitaker Wright ventures failed, the total deficit being £5,500,000. Wright fled to the U.S.A., but was extradited in 1903. After sentence, he committed suicide, Jan. 26, 1904.

WRINGTON. Village of Somerset. It is 4 m. from Yatton, on the G.W. Rly. It is famous for its church, the tower of which is perhaps the finest in Somerset, and as the birthplace of John Locke. Pop. 1,369.

WRIST OR **CARPUS**. In man, the joint and structures which separate the bones of the arm from those of the hand. It is composed of eight bones arranged in two rows, namely, the scaphoid, lunar, pyramidal, pisiform, trapezium, trapezoid, os magnum, and unciform. The bones articulate above with the radius and ulna of the forearm, and below with the metacarpal bones of the palm.

WRIT. Order issued by the courts of law. In the United Kingdom almost all legal proceedings begin with the serving of a writ by the plaintiff upon the defendant, stating what the plaintiff demands. Writs must be served, i.e. handed to, the defendant in person, unless he agrees to accept service through a solicitor, although the courts can order a substituted service. The term is also used in connexion with parliamentary elections, as these take place on receipt of a writ addressed to the returning officer.

WRITER'S CRAMP. Spasmodic contraction of some of the muscles of the fingers and hand, associated with neuralgic pains, which comes on whenever the sufferer attempts to write. The spasm is due to fatigue of the brain centres governing the particular movements involved in writing. A similar spasm may occur in other occupations owing to the excessive use of a particular group of muscles. Prolonged rest is essential, and massage is helpful.

WRITING. Art of communicating ideas, on some more or less durable surface, by means of signs intelligible to the eye. The two main stages in the development of writing are ideography, the representation of objects or ideas by means of pictures, and phonography, the representation of sounds by written symbols.

The earliest method was pictography or picture writing. The Latin system of writing originally did not distinguish the forms of the letters for use in MSS. and inscriptions. Both were what is known as capital, each letter having a separate outline. By rounding off the letters and altering their original proportions capitals became uncials; a later development was the semi-uncial, in which majuscule (large letters) more and more gave way to minuscule (small letters).

In early times the Romans had a cursive system, which was the origin of the

national systems of writing. The Irish script was probably brought to Ireland by missionaries from Gaul. It exercised great influence on European writing. Anglo-Saxon, derived partly from Irish and partly from Roman script, was the parent of the Caroline minuscule, introduced in the 9th century by Charlemagne. By the 14th century this had developed into Gothic or black letter, which is the origin of the modern German printing script. In Italy, however, there was a renaissance of the Caroline style in the form of an elegant script, which, through the medium of the great printers, such as Aldus, became the basis of the modern types of writing. See Alphabet; Cuneiform; Ink; Manuscript; Palaeography; Paper; Papyrus.

WROTHAM. Urban dist. of Kent. It is 6 m. from Sevenoaks, on the Southern Rly. The church of S. George, an Early English building, has some old brasses. Here until about 1350 the archbishops of Canterbury had a palace. Pop. 4,240. Pron. Rootem.

WROXETER. Village of Shropshire. It is on the Severn, 6 m. S.E. of Shrewsbury. The Roman Uriconium or Viroconium, it contains interesting remains. Pop. 600.

WRYNECK (lynx). Small British bird, related to the woodpecker. Its name is due to the habit of twisting its neck as it picks up ants. The general colour of the upper parts is grey, spotted and barred with brown. It is fairly common in the S. of England, but rare in the N.

WUCHANG. Capital of Hupeh prov., China. It is on the Yang-tze river, opposite Hankow and Hanyang, which, together with Wuchang, form "the three cities," the chief trade centre of central China, with a total population of 1,583,900. It has cotton and ore crushing mills, and is the seat of a university.

WÜRTTEMBERG. Republic of Germany. In the S.W. of the country, it has an area of 7,530 sq. m. It is surrounded by Bavaria, Baden, and Switzerland, and has some detached pieces of territory. It contains some of the mountains of the Black Forest and spurs of the Alps. The chief rivers are the Neckar and Danube. Stuttgart is the capital and largest town; Ulm, Heilbronn, and Esslingen rank next in population. Agricultural pursuits afford the main occupation of the people, but there are some manufactures. Over a quarter of the surface is covered with forests.

The kingdom of Württemberg joined the German empire in 1871. In Nov., 1918, the king abdicated, and the country was declared a people's republic. A constitution was adopted in Sept., 1919. Württemberg is governed by a president, ministry, and landtag. The landtag consists of 80 members, elected for four years by universal suffrage. Pop. 2,580,235.

WÜRZBURG. City of Bavaria. It stands on both sides of the Main, 70 m. S.E. of Frankfurt. The cathedral is an imposing Romanesque building, mainly of the 12th century. Other churches include the beautiful Gothic Marienkapelle, the Neumünster church, and the churches of S. Burkhard and S. Stephen. The university was founded in 1582. The palace was built in the 18th century on the model of Versailles. On a hill overlooking the city is the fortress of Marienberg, where, from 1261 to 1720, the bishop lived. The city is a rly. junction. Pop. 89,910.

Wyalong. Town of Australia, in New South Wales. A centre for gold mining, it is 342 m. by rail from Sydney. Pop. 3,300.

WYANDOT. N. American Indian tribe of Iroquoian stock. A confederacy of four tribes, called by the French colonists Huron, and numbering about 10,000, occupied a region S. and E. of Georgian Bay, Ontario, when dispersed by Champlain in 1615. After the Iroquois exterminated the Huron settlements in 1648 there arose a new tribal grouping. See American Indians; Huron.

WYANDOTTE. Breed of domestic fowl. It originated in the U.S.A. about 1872, when they were mentioned as American



Wyandotte. White hen of this good laying breed.

Sehrights. They are descended from Brahmas crossed probably with Polish. In shape they resemble the Brahma, but are rounder and fuller-breasted. They are hardy birds, good layers, and good sitters.

Wyandotte Cave is a natural cave in Indiana, U.S.A. Situated

about 5 m. N.E. of Leavenworth, it measures over 23 m. in length.

WYATT OR **WYAT**, **SIR THOMAS** (c. 1503-42). English courtier, diplomat, and poet. Son of Sir Henry Wyatt (d. 1537), he enjoyed the favour of Henry VIII, and was ambassador to Charles V, 1537-39. His too intimate relations with Anne Boleyn, and then his friendship with Thomas Cromwell, led to his imprisonment in the Tower in 1536 and 1541. He was knighted in 1537, and was M.P. for Kent, 1542. A student of foreign literature, he wrote epigrams and satires. He died Oct. 11, 1542.

His son, Sir Thomas Wyatt (d. 1554), became a leading spirit in the plot to prevent Mary's marriage with Philip of Spain and to place Elizabeth on the throne. On Jan. 26 he raised his standard at Rochester and advanced on London, entering Southwark, Feb. 3. London Bridge was closed against him, but Wyatt made his way by Kingston. His army was beaten, and he was beheaded, April 11, 1554.



Sir Thomas Wyatt, English conspirator.

WYCHERLEY, **WILLIAM** (c. 1640-1716). English dramatist. Born at Clive, near Shrewsbury, and educated in France and at Queen's College, Oxford, he won popularity at court with his plays. In 1679 he married secretly the dowager countess of Drogheda (d. 1681), who left him her fortune. Impoverished by a lawsuit, he was rescued from prison by James II, and died Jan. 1, 1716. Wycherley's comedies are *Love in a Wood*, or *St. James's Park*, 1672; *The Gentleman Dancing Master*, 1673; *The Country Wife*, 1675, and *The Plain Dealer*, 1677.

WYCHWOOD. District of Oxfordshire, formerly a royal forest. In the W. of the co., between the rivers Windrush and Evenlode, it was made a royal hunting ground about 1200, and was disafforested in 1862.



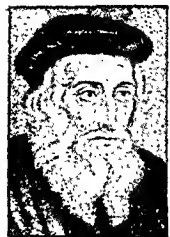
William Wycherley, English dramatist. After Sir P. Lely.

However, Ernie was quite to be trusted. He was a steady little fellow, and well liked by

Writing. Scripts taught in the 20th century, founded on the distinctive lettering of the 16th century (reduced to quarter size)

By courtesy of Sir Isaac Pitman & Sons

WYCLIFFE, JOHN (c. 1325-84). English reformer. A native of Hipswell, near Richmond, Yorkshire, he was made master of Balliol College, Oxford, 1360, and achieved a reputation as a scholar and preacher.



John Wycliffe,
English reformer
From a print by O.
White

Later he became parish priest at Fillingham, Luddershall, and in 1374 at Lutterworth. As a zealous reformer of clerical abuses, his services as an able controversialist were called in by the party headed by John of Gaunt, in 1375.

In 1378 he began his translation of the Scriptures into the vernacular, a rendering which was the basis of all later translations.

He disseminated his doctrine by pamphlets in English, and by the organization of a sort of missionary association of preachers. Such teaching could be easily adapted to their own ends by communistic social reformers, who played their part in the rising of 1381; and the Lollards, as Wycliffe's followers came to be called, were soon regarded rather as political anarchists than as reformers of clerical abuses. He died Dec. 31, 1384. See Lollards.

Wycombe, High. Borough of Buckinghamshire, usually called High Wycombe (q.v.).

WYE. River of Wales and England. It rises on Plynlimmon, in Montgomeryshire, and flows into the estuary of the Severn just below Chepstow. Its length is 130 m. Among places on its banks are Hereford, Ross, Monmouth, and Chepstow. The Wye valley is noted for its beautiful scenery. (See Chepstow; Hereford; Symond's Yat.) There is also a Wye in Derbyshire.

WYE. Village of Kent. Situated 4 m. from Ashford, on the Southern Rly., it is the seat of the South-Eastern Agricultural College, associated with the university of London. Pop. 1,390.

WYMONDHAM. Market town of Norfolk. It stands on the L.N.E. Rly., 10 m. from Norwich. The chief building is the church of S. Mary the Virgin, at one time the church of an abbey. It has a Norman nave and a fine modern altar screen. There is a market cross. Market day, Fri. Pop. 4,814. Pron. Windham.

WYNDHAM, SIR CHARLES (1837-1919). British actor. Born in Liverpool, May 23, 1837, he changed his paternal name of Culverwell to that of Wyndham and took to acting. In 1874 he began his long connexion with the Criterion Theatre, where he played in a successful series of farces, and later in several modern comedies by Henry Arthur Jones. In 1893 he left the Criterion for Wyndham's, and in 1903 went to the New Theatre. He was knighted in 1902, and his second wife was Mary Moore (q.v.), long his leading lady. He died Jan. 12, 1919.



Sir Charles Wyndham,
British actor
Elliott & Fry



George Wyndham,
British politician
Elliott & Fry

WYNDHAM, GEORGE (1863-1913). British politician and man of letters. Son of the Hqn. Percy Wyndham and a grandson of the 1st Lord Leconfield, he was born Aug. 29, 1863. He served with the Coldstream Guards in Egypt in 1885, but, forsaking a military career for politics, he began as private secretary to A. J. Balfour, and in 1889 entered the House of Commons as M.P. for Dover. In 1898 he was

made under-secretary to the war office, and from 1900-5 was Irish secretary. He died June 9, 1913. Wyndham wrote on Ronsard and Shakespeare, and in 1919 a volume of Essays in Romantic Literature appeared.

WYOMING. State of the U.S.A. It forms part of a great plateau, and is traversed by branches of the Rocky Mts. It contains most of Yellowstone Park (q.v.). The North Platte, Big Horn, Powder, and Green are the longest rivers. The soil is semi-arid, and agriculture is aided by irrigation; a considerable area is utilised for grazing. Coal is yielded in large quantities, as well as petroleum and natural gas. Cheyenne is the capital. The area is 97,914 sq. m. Pop. 247,000.

WYOMING VALLEY. Picturesque valley of Pennsylvania, U.S.A. It extends about 30 m. along the Susquehanna river, and has a breadth of some 5 m. Its possession was long disputed by Connecticut and Pennsylvania settlers.

WYRLEY. Name of two villages of Staffordshire. Great Wyrley is 6 m. N. of Walsall, and has a station, Wyrley and Cheslyn Hay, on the L.M.S. Rly. Around are coal and ironstone mines. Pop. 2,701. Little Wyrley is about 2 m. away. See Maiming.

Wyvern. In heraldry, two-legged dragon, with serpentine forked tail. It is the typical dragon of continental heraldry.

X. Twenty-fourth letter of the English and twenty-third of the Latin alphabet. In form, but not in sound, it is the Greek X (Chi), which answers to the German ch in doch, and the Scottish ch in loch. At the beginning of words, chiefly of Greek origin, it has the sound of z, e.g. Xenophon, xylonite. Its normal sound is that of ks in an accented syllable, as in exit, excellent, and of gs in an unaccented syllable, as in exert, exalt. See Alphabet; Phonetics.

XANTHUS. Chief city of ancient Lycia, Asia Minor. It stood on the river of the same name about 8 m. from the mouth. In 546 B.C. it was besieged by the Persians, and after its destruction by the Romans in 42 B.C. it fell into ruins. Excavation has revealed a stele inscribed in Lycian and Greek, tombs, and other interesting remains.

XANTIPPÉ or **XANTIPPÉ** (Gr. yellow mare). Wife of Socrates (q.v.). She is said to have made his home life wretched by her quarrelsome disposition and shrewish tongue, and her name has become synonymous with virago. Pron. Zan-tippy.

XAVIER, FRANCIS (1506-52). Spanish missionary and saint. He was born at Xavier, near Sanguesa, April 7, 1506, and was educated in Paris, where he met Ignatius Loyola, with whom he was associated in founding the Society of Jesus. He laboured for a time in the hospitals of N. Italy, was ordained in 1537, and founded the first Jesuit mission in India, at Goa, 1542. After visiting Travancore, the Fishery Coast, Madura, Celebes, the Spice Islands, and Japan, he died of fever, on the island of Sancien, near Macao, Dec. 22, 1552, while trying to penetrate into China. He was canonised in 1622. His day is Dec. 3. See Goa; Jesuits.

Xebec (Ital. scabiocco, zambiocco). Name for a three-masted lateen-rigged trading ship. It is used only in the Mediterranean.

XENON (Gr. strange). Gaseous element, symbol

Xe. Its atomic weight is 130.2; atomic number 54. Xenon exists in the atmosphere in minute quantities.

XENOPHON (430-354 B.C.). Greek writer and general. An Athenian by birth, he joined the expedition of Cyrus the Younger against his brother Artaxerxes. On the death of Cyrus at the battle of Cunaxa the command devolved upon Xenophon, who, led his 10,000 fellow countrymen back to the coast. He preserved the story in his Anabasis. His chief work after the Anabasis is the Hellenica, a history of Greece. Memorabilia was written to vindicate Socrates, whose pupil he had been. Xenophon also wrote treatises on domestic economy, hunting, etc.

Xenotime. In mineralogy, phosphate of yttrium. One of the sources of yttrium (q.v.) it is found in Brazil and the U.S.A.

XERXES. King of Persia, 485-465 B.C. His first task on the death of his father Darius was to quell a revolt which had broken out in Egypt. In 480 Xerxes and his army set out from Sardis in Asia Minor to conquer Greece. The Hellespont was crossed by a bridge of boats, and a canal was cut through Mt. Athos. His army, after a temporary repulse at Thermopylae, reached Athens, but his fleet was beaten at Salamis. Xerxes returned with the bulk of his army, but was assassinated in 465 by Artabanus, commander of his bodyguard. Pron. Zerx-eex.

XIMENES, OR JIMENES, DE CISNEROS, FRANCISCO (1436-1517). Spanish ecclesiastic. After studying at Salamanca, he was ordained priest and went to Rome. In 1492 he became confessor to Queen Isabella and in 1495 was made archbishop of Toledo. He retained his power during the difficult times that followed Isabella's death in 1504, receiving the red hat in 1507 and becoming grand inquisitor of Castile and Leon. In 1509 he led a strong force to Africa and conquered Mers-el-Kebir. On the death of Ferdinand in 1516 Ximenes became regent of Castile for Charles V, but in 1517 Charles dismissed him, and he died Nov. 8, 1517.

X-RAY. Rays discovered in 1895 by Röntgen. While investigating the passage of high-voltage electric currents through vacuum tubes (Crookes' tubes) he noticed that invisible rays were emitted which caused fluorescence in certain crystals, and penetrated certain substances opaque to light,



X-Rays. Explanatory diagram of method of applying X-ray treatment to a patient, and the precautions taken to protect the operators

such as wood and aluminium. The rays were stopped by the heavy metals and other dense substances.

Further research on the rays has been directed into three main channels: (1) physical; (2) chemical; and (3) medical. By passing X-rays through crystals, a spectrum is obtained which furnishes a method of studying the actual form of crystals and of measuring the wave lengths. Each chemical element has the power of emitting X-rays of a particular wave length—under suitable stimulation. The square root of the vibration-frequency of each element is proportional to the atomic number of the element. This law has enabled many discoveries to be made about electrons and the atomic structure of the elements.

In industry the X-rays are applied with success in detecting flaws in metallic castings and the like. The applications of the X-rays to diagnosis are numerous. Certain diseases of the skin yield readily to X-ray treatment and some measure of success has attended the X-ray treatment of cancer. See Atom; Electron; Light; Radiation; Röntgen, W. K.

XYLENE. Liquid hydrocarbon obtained from coal tar and existing in three isomeric forms—ortho-xylene, meta-xylene, and para-xylene. Xylene is employed as a solvent and in the manufacture of aniline dyes.

Xylonite. Alternative name for celluloid (q.v.). It is prepared by mixing, under pressure, pyroxylin and camphor.

XYLOPHONE (Gr. xylon, wood; phonē, voice). Percussion instrument in the orchestra. It consists of 27 bars of hard wood slightly rounded on the upper surface and arranged in two rows, with resonators below. They are struck with two small wooden mallets, producing a dry and clattering sound.

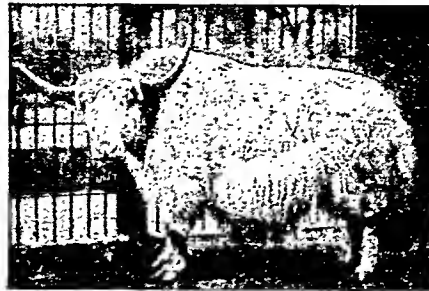
Y. Twenty-fifth letter of the English and twenty-fourth of the Latin alphabet, both a vowel and a consonant. In form it corresponds to the Greek Υ (upsilon), and in Latin is only found in Greek words. As a consonant it has almost the same value as ee, as in the pronunciation of yes, yet. As a vowel, y may be phonetically compared to i, its values being long i, the diphthong, not the Italian sound, and short i, as in by, fly, synonym, system. As a general rule, at the end of a word, when preceded by a consonant, it has a shortened sound, as in colony. See Alphabet; Phonetics.

YACHTING. Navigation of a sailing, steam, or motor yacht. The real beginning of pleasure yachting dates from the early years of the 18th century, and the foundation of the first yacht club is credited to Ireland, the Cork Harbour Water Club having been established in 1720. English yachting progressed on the foundation of the Yacht Club, now the Royal Yacht Squadron, at Cowes in 1815 by 50 noblemen and gentlemen owning yachts. Its institution was followed in 1823 by that of the Royal Thames Yacht Club.

In yacht construction early designers concentrated chiefly on sharp bow and stern, a stern-post with upward and backward slant, a somewhat narrow beam, gigantic sails, and fine water-lines, but these characteristics underwent drastic modification following the appearance in English waters of the famous *America* in 1851, when she defeated the *Aurora* and 16 other yachts in the race for the Queen's Cup at Cowes, a trophy that has since been known as the *America Cup* (q.v.).

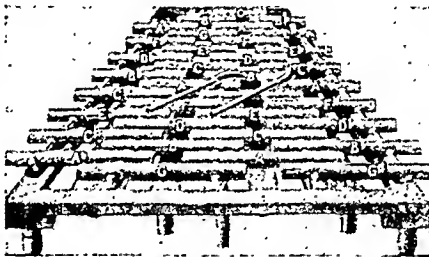
The variation in the size of racing yachts made necessary a measurement rule to reduce to a minimum the advantage held by one type over another. The original tonnage rules were frequently amended, and in 1907 a number of delegates met in conference to unify the rules of yacht racing, the result being the formation of the International Yacht Racing Union. See Lipton, Sir T.; Shamrock.

YAHOO. Degraded human servants of the horses inhabiting the island of the Houyhnhnms, described in the fourth voyage of Gulliver in Swift's *Gulliver's Travels*



Yak. Domesticated shaggy-haired bull of Tibet
Gambier Bolton, F.Z.S.

YAK (*Bos grunniens*). Ungulate mammal, belonging to the ox family, and found only in Tibet and in parts of China. The yak is a massive and heavy animal, with short legs and a long narrow head. Long hair grows from the limbs, tail, and under parts and often reaches the ground. Fine male specimens stand nearly 6 ft. high at the shoulders and weigh well over 1,000 lb. Yaks are used by the Tibetans as beasts of burden as well as for food.



Xylophone. Diagram showing arrangement of notes in the wooden musical instrument
By courtesy of J. W. D. Hawkes & Son

YAKUTSK. Autonomous republic of Soviet Asia. It is a vast triangular region, E. of the Siberian Area, with a long coastline on the Arctic Ocean, and consists of the basin of the Lena and other rivers flowing into the Arctic. The climate is very severe. An air service has been established between Yakutsk (pop. 10,513), the capital, and Irkutsk. The republic was established in 1922. The area is 1,457,068 sq. m. Pop. 236,728.

YALE UNIVERSITY. American university. It is at Hartford, Connecticut, and owes its name to Elihu Yale (1648-1721), an Anglo-Indian official, who was an early benefactor. It dates from 1701, and was at first the collegiate school of Connecticut, at Saybrook. It was founded by Puritans, who made theology an important subject of study. In 1717 it was removed to Hartford, and took the name of Yale, although not officially declared a university until 1887. Since 1892 it has been opened to women.

YALU. River of E. Asia. Rising in the Peishan, it follows a winding S. course between Manchuria and Korea, whose frontier it forms, to the bay of Korea. It is about 300 m. long and navigable to Wiju.

The battle of the Yalu was fought at the mouth of the river, Sept. 17, 1894, between Japanese and Chinese. The action lasted over four hours, at the end of which three of the Chinese vessels had been sunk, while a fourth had been beached owing to injuries.

YAM (*Dioscorea sativa*). Perennial climbing herb of the order Dioscoreaceae. A native of the East Indies and the Philippines, it is extensively cultivated in the West Indies.

It has large, fleshy, tuberous roots, long twining stems, and alternate, heart-shaped leaves. The tubers are rich in starch and are used in the same ways as the potato.

YANGTZE KIANG. River of China. It is over 3,000 m. long, rising in the centre of the high plateau of Tibet, and flowing across the breadth of China into the Yellow Sea. Its early course is known as the Kinsha Kiang. Though marked in places by rapids, it is an immensely valuable commercial waterway. Among important towns on its banks are Nanking, Hankow, Wuchang, Ichang, and Chungking.

YANKEE. Word of uncertain origin used in America for a citizen of New England, and in Europe generally for a native of the U.S.A. The name was applied in the War of Independence by the British to the Americans, in the Civil War by the Confederates to the Union soldiers (often shortened to "Yank"), and by the South to the North.

Yankee Doodle is the name of an American tune. It dates from about the middle of the 18th century, its origin being obscure. There are many versions. Words, more or less nonsensical in general, are fitted to it.

YAP. Island of the Caroline group, Pacific Ocean. Previously a German possession, it passed by the treaty of Versailles, 1919, under mandate to Japan. It is an important cable centre with direct communication to Guam, Shanghai, and Menado in the Dutch East Indies. Friction arose between the U.S.A. and Japan over the cable rights. A settlement was reached in 1921 and embodied in a treaty the following year, by which the U.S.A. obtained the right of free access to the island to operate the cables. Pop. 7,332.

YARD. British standard linear measure. It is the length between two gold studs on an iridio-platinum bar, copies of which are kept in the Houses of Parliament, the Standards office, the Royal Observatory, Greenwich, and elsewhere. The yard is divided into three feet and thirty-six inches. See Ell; Foot; Inch; Weights and Measures.

YARE. River of Norfolk. It rises near Cranworth, in the centre of the county, and, flowing past Norwich, enters the sea at Yarmouth. It is about 60 m. long. Its tributaries are the Wensum, Waveney, and Bure.

YARKAND. Town of central Asia. It is in Sinkiang, a dependency of China. On the river Yarkand, about 100 m. S.E. of Kashgar, it manufactures silk, felt, and cotton goods. Pop. 100,000.

YARMOUTH, GREAT. Co. bor. and watering place of Norfolk. Near the mouth of the Yare, it is 19 m. E. of Norwich on the L.N.E. and L.M.S. Ryhs. The church of S. Nicholas, one of the largest parish churches in England, was founded in the 12th century. Characteristic of the old town are the Rows, numerous narrow lanes, often but a few feet wide. There are some interesting old houses, including the Star Hotel, a Tudor building, and the 14th century toll house, now a library and museum. There is a grammar school. On the S. Dunes is the Nelson monument, a column 144 ft. high. A new bridge was opened by the Prince of Wales,



Yam. Tubers and heart-shaped leaves



Elihu Yale, Anglo-Indian official

Oct 21, 1930. The town is an important centre of the herring fishery, Yarmouth boats being famous. One member is returned to Parliament. On Nov 3, 1914, and again on April 25, 1916, German battle-cruisers bombarded Yarmouth. Pop 60,710

YARMOUTH. Seaport of the Isle of Wight. On the Solent, at the W. end of the island, at the mouth of the Yar, it has a station on the Southern Rly. and steamer connexion with Lymington. It has a castle built by Henry VIII and is a yachting centre. Until 1883 Yarmouth had its own mayor and corporation, and it sent members to Parliament from 1584 to 1832. Pop. 893

YARMOUTH. Town and seaport of Nova Scotia. It is 215 m. from Halifax, on a good harbour at the S.W. end of the peninsula, and is a station on the C.P.R. and C.N. Rlys. Steamers go to Boston and Halifax. The chief industries are shipbuilding and exporting lumber. Pop. 7,073.

YAROSLAVL. City of Soviet Russia, capital of the prov. of the same name. On the Volga, 160 m. N.E. of Moscow, it is a rly. junction and a centre of water communication. The university dates from 1919. Pop. 121,103.

YARRA YARRA. River of Victoria, Australia. It discharges into Port Philip and is navigable for large vessels to Melbourne. Its length is 100 miles.

YARROW. (*Achillea millefolium*) on MILFOL. Perennial herb of the order Compositae, native of Europe, N. and W. Asia, and N. America; a common weed in British pastures, and closely related to the sneezewort (q.v.) It differs in the long leaves being cut into fine segments, featherlike, and in the flower heads being smaller, but more numerous.

YARROW. River of Selkirkshire, Scotland. It rises above St. Mary's Loch and flows to the Ettrick Water, which it joins near Selkirk. It is known for its historic and literary associations and for its beautiful scenery, described in one or two of Wordsworth's poems. On its banks are the ruins of Dryhope Tower and Newark Castle.

YARROW, SIR ALFRED FERNANDEZ (b. 1842). British engineer. Born Jan. 13, 1842, he became a shipbuilder and engineer at Poplar, London, in 1866, where he specialised in high-speed vessels, particularly torpedo-boats and torpedo-boat destroyers, boats of shallow draught, the Yarrow boiler, now generally adopted in the navies of the world, etc. In 1906 the works of Yarrow and Co., which he founded, were removed to Scotstown, Glasgow, and later a branch was opened at Vancouver.



Sir Alfred Yarrow,
British engineer
Elliott & Fry

Yarrow was created a baronet in 1916.

YASHMAK. Veil sometimes worn by Mahomedan women of Egypt and Turkey, when in public. Triangular in shape and about a yard long, it covers the face below the eyes. See Turkey.

YASS. Township of New South Wales. It is about 43 m. N. of Canberra, and is the terminus of the projected rly. to the federal capital. Gold is mined in the neighbourhood. Pop. 2,200. See Canberra.

YATAGHAN. Turkish short sword or long knife, with a double curved blade running to a point and a handle without a guard. The weapon is common among Mahomedan peoples. In the 19th century it was worn by some of the French infantry. See Sword.

YATES, EDMUND HODGSON (1831-94). British journalist. Born at Edinburgh, July 3, 1831, he began his journalistic work as a con-

tributor of verses and theatrical criticism to The Court Journal in 1852, and was dramatic critic and reviewer on the Daily News, 1854-60. As editor of Town



Edmund Yates,
British journalist

Talk, 1858, he wrote an article on Thackeray which led the last named to insist on his resignation from the Garrick Club. He became acting editor of Temple Bar, 1860, sole editor, 1863-67; and edited Tinsley's Magazine, 1867-74. He was European representative of The New York Herald, 1873, and, with Grenville Murray, founded a society paper, The World, 1874. He died May 20, 1894.

YAWL. Name for a two-masted craft. The mainmast is tall, and carries several sails; the mizzenmast is short, and carries only one small sail, which, projecting over the stern, helps to make steering easy. See Ship.

Yeadon. Urban dist. of Yorkshire (W.R.). It is 8 m. N.W. of Leeds. The chief industry is the manufacture of woollens. Pop. 7,590.

YEAMES, WILLIAM FREDERICK (1835-1918). British artist. Born at Taganrog, S. Russia, where his father was British consul, he studied in Florence and London, where he was associated with G. A. Storey, H. S. Marks, P. H. Calderon, and others in what was known as the St. John's Wood School. Made A.R.A. in 1866 and R.A. in 1878, Yeames taught in the R.A. school, was librarian at the R.A., and curator of the Painted Hall, Greenwich Hospital. He died May 3, 1918.

YEAR. Period of time. The sidereal year is 365 days, 6 hours, 9 minutes, 9 seconds, and is the actual period taken by the earth to make one complete revolution in its orbit. The anomalistic year, the interval between two successive passages of perihelion by the earth, is 365 days, 6 hours, 13 minutes, 53 seconds. The tropical year is 365 days, 5 hours, 48 minutes, 46 seconds, the time taken by the earth to pass from any point in the ecliptic to the same point again.

The tropical year is the year of the calendar, and is divided into 12 months. The Jews and Mahomedans use a lunar year. See Calendar.

YEAST. Class of fungi of the genus Saccharomyces. They have the power of setting up alcoholic fermentation in sugar, the latter being broken up in the process into alcohol and carbon dioxide. Among the chief varieties of yeast are *S. cerevisiae*, used in the manufacture of beer, and *S. ellipsoidea*, in the manufacture of wine. *S. mycoderma* is the so-called vinegar plant. If a small quantity of yeast is introduced into a fermentable liquid, the yeast cells increase and the liquid actively ferments. The fermenting liquid is covered with a frothy mass, known as top yeast, which is compressed and used by bakers. See Enzyme; Fermentation.

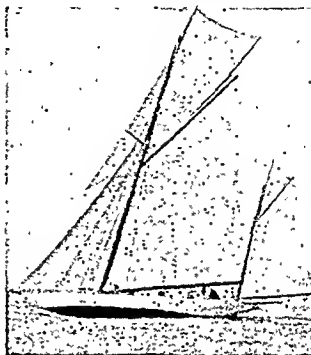
YEATS, WILLIAM BUTLER (b. 1865). Irish poet and dramatist. A son of the portrait painter, J. B. Yeats (1839-1922), he was born at Sandymount, near Dublin, June 13, 1865. His verse combines the beautiful with the weird and fantastic. Among his many publications are The Countess Kathleen, 1892; The Celtic Twilight, 1893; The Secret Rose, 1897; The Shadowy Waters, 1900; Cathleen ni Hoolihan, 1902; Deirdre, 1907; J. M. Synge

and the Ireland of His Time, 1911; Reveries, 1916; A Vision, 1926; and The Tower, 1928. In 1899 Yeats helped to found the Abbey Theatre in Dublin. In 1922 he was made a senator of the Free State, and he received a Nobel prize for literature in 1923.

YELL. One of the Shetland Islands. It is 25 m. N. of Lerwick, and is separated from Mainland by Yell Sound. The island is 17 m. from N. to S. and its greatest breadth is about 6 m. Pop. 2,300. See Shetland.

YELLOW FEVER. Acute non-contagious fever occurring in endemic form on the Atlantic coasts of Mexico and Central S. America, on the W. coast of Africa, etc. It is spread by a species of mosquito—the *Stegomyia calopus*—the bites of which convey a parasite from the mosquito to human beings.

The symptoms generally appear from two to six days after infection has occurred. There is a rise of temperature to 103° F. or more, with chilliness, severe headache, pain in the back and limbs, and increase in the pulse rate. In most cases, after a few hours' remission, the temperature again rises and jaundice appears, the yellow tint of the skin gradually increasing. It is this symptom which has given the disease its name. In some cases the symptoms decrease in from three to four days, in others the patient dies.



Yawl. A racing yawl sailing close to the wind
Cribb, Southsea

YELLOWHAMMER (*Emberiza citrinella*) Species of bunting, common in Great Britain and N. Europe. The head, neck, and under parts are bright yellow, while the upper parts are reddish brown. It occurs chiefly on commons and waste ground, and feeds upon insects during summer and seeds in winter.

YELLOWHEAD. Pass in the Rocky Mts., Canada. It connects British Columbia with Alberta, and was discovered in 1858. See Rocky Mountains.

YELLOW PRESS. Name given to American and other newspapers of a sensational kind. It is due to Mr. R. F. Oatcault, who died in Sept., 1928. In 1895 he published in The Sunday World, New York, a comic supplement called the Yellow Kid.

Yellow River. Alternative name for the Chinese river Hwang-ho (q.v.).

YELLOW SEA (Chinese Hwanghai). Arm of the Pacific Ocean, between Manchuria on the N., China on the W., and Korea on the E. It washes the shores of the Chinese provs. of Shantung, Chihli, and Kiangsu, and communicates on the S. with the East China Sea. The northern portion embraces the gulfs of Korea, Liautung, and Chihli, and the most prominent projections are the peninsulas of Liautung and Shantung. The river Hwang-ho brings down enormous quantities of yellow mud, hence the name of the sea.



Yellowhammer,
common British bird,
on a firze bush
W. S. Berridge, F.Z.S.



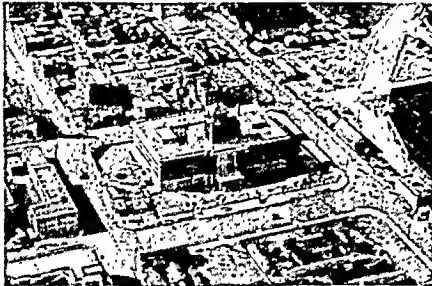
W. B. Yeats,
Irish poet
Lafayette

YELLOWSTONE PARK. Government reservation of the U.S.A. Occupying the N.W. corner of Wyoming, and small adjoining portions of Montana and Idaho, it covers 3,426 sq. m. and was opened to the public in 1872 as a national park with game preserve. It consists mainly of a plateau relieved by mountain groups. Within the reserve are numerous magnificent geysers, and near the centre is Yellowstone Lake. The Yellowstone river, a tributary of the Missouri, enters the lake at the S. end and issues from the N. To the S. and E. of the park is a timber preserve.

YEMEN. Imamate of Arabia. It occupies the S.W. corner of the peninsula, between Asir and the Aden Protectorate, and its capital is Sana. The area is about 75,000 sq. m.; pop. between two and three millions. See Arabia.

YEN. Japanese monetary unit. It is coined in 5, 10, and 20 yen gold pieces. The yen is divided into 100 sen. Its nominal value is 2s. 0½d. See Sen.

YENISEI. River of Soviet Asia. It rises in N. Mongolia, crosses the Siberian area from S. to N., and flows into the Arctic Ocean. It is over 3,000 m. in length.



Yokohama. Part of the city as reconstructed after the earthquake of 1923. Centre, City Hall, surrounded by wide roadways and buildings of Western style

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YEOMAN. English word originally meaning a countryman, and later used for a class of those who cultivate the soil. The yeomen are retainers in Chaucer, but later appear to have become small freeholders, the intermediate class between the gentry and the labourers. The word was also used for farmers, those who rented land

YEOMANRY. Name given in England and Wales to mounted auxiliary troops. They were so called because they were recruited mainly from among yeoman farmers. The force was first raised in 1761 for home defence, but it was not organized until 1794. The men were organized in regiments, on a county basis. In 1900-2 regiments of mounted men were raised for service in S. Africa, and were called imperial yeomanry.

Up to and during the Great War, in which they had a distinguished record, there were 55 regiments of yeomanry. When, in 1921, the territorial army was reorganized, only 10 of the 55 yeomanry regiments were retained. There are now 14. See Territorial Army.

YEOMEN OF THE GUARD. Small military corps, officially styled the King's Body Guard of the Yeomen of the Guard, and popularly known as the Beefeaters. They are members of the royal household and are in receipt of pensions for distinguished conduct in the field. They were founded by Henry VII in 1485, after the battle of Bosworth.

YEOVIL. Borough and market town of Somerset. It stands on the river Yeo, 22 m. E. of Taunton, with stations on the G.W. and Southern Rlys. The church of S. John the Baptist is a fine Perpendicular building. The town is noted for gloves and is also an agricultural centre. Market day, Fri. Pop. 14,994.

Yes Tor. Mt. of Devon. On Dartmoor, 3 m. S. of Okehampton, it is 2,028 ft. high.

Yetholm. Village of Roxburghshire, Scotland, 8 m. S.E. of Kelso. It was the headquarters of the Scottish gypsies. Pop. 772.

YEW (Taxus).

Genus of evergreen trees of the order Coniferae. The common yew (*T. baccata*) is a native of Britain, and other species have been introduced from America and Japan at various dates. The



Yew. Foliage of the common yew, *Taxus baccata*

foliage is poisonous to cattle. The yew is of very slow growth, and reaches an age of 300 to 400 years. Of stately spreading habit, it rarely attains to a height of more than 40 ft. The Irish yew is an ornamental variety.

YIDDISH (Ger. jüdisch, Jewish). Name given to a dialect or dialects spoken by the Jews in various parts of the world. The Jews who migrated from Germany to the east of Europe in the 14th century took with them their mother tongue. This, with an admixture of Hebrew and foreign words, gradually developed into a peculiar jargon. After the return to the west in the 17th century this jargon held its ground, and forms the basis of a popular dialect of German-Jewish in all parts of Europe and also in America. The Hebrew characters are used. See Jews.

YMUUDEN or IJMUUDEN. Town of the Netherlands. It lies at the W. end of the North Sea Canal, 15 m. from Amsterdam. Quays and other shipping facilities make the place a growing outpost for Amsterdam. There are ice and chemical works. A large new lock was erected in 1927-28. Pop. 10,000.

Ynshir. Coal mining centre of Glamorganshire, Wales. It is 4 m. N.W. of Pontypridd and is served by the G.W. Rly. Pop. 11,100.

YOKOHAMA. Principal seaport of Japan. It stands on Tokyo Bay, 15 m. S. by W. of Tokyo, with which it is connected by rly. Its commodious harbour is well equipped. Silk is one of the chief articles of export. On Sept. 1, 1923, Yokohama was almost destroyed by an earthquake, but has since been rebuilt. The area of the city was increased in 1927. Pop. 518,902.

YONGE, CHARLOTTE MARY (1823-1901). British novelist and author. She was born Aug. 11, 1823, at Otterbourne, Hants, where she lived all her life, and died March 23, 1901. The inculcation of the High Church faith is the dominating note of her long series of novels, the first of which to achieve a striking success being *The Heir of Redclyffe*, 1853. She also wrote a number of historical works of a simple character.

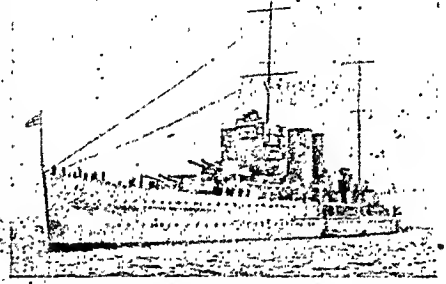
Yonkers. City of New York, U.S.A. It is a residential suburb of New York City, which it adjoins on the N. Pop. 113,647. See New York.

YORK. City, county borough, and market town of Yorkshire, also the co. town and the seat of an archbishop. It stands at the confluence of the Ouse and Foss, 188 m. N.W. of London, and is served by the L.M.S. and L.N.E. Rlys. The industries

include iron founding, rly. carriage building, printing, glass making, and cocoa, chocolate and confectionery manufacture. The old city walls still stand; they retain four of the original gates or "bars." The Eboracum of the Romans, York became the capital of the British province and headquarters of the 6th legion.

The minster, or cathedral church of S. Peter, was built on the site of a 7th century church, and has been several times damaged by fire. Famous especially for its stained glass and chapter house, the existing structure includes examples of Early English, Decorated, and Early and Late Perpendicular. On both sides of the beautiful W. façade rise two towers; in the N.W. tower is hung the bell called Great Peter. The central tower or Great Lantern rises 198 ft. The choir is separated from the nave by a Late Gothic screen. There is a Late Norman crypt. Paulinus was the first bishop of York, 627-33.

There are many other churches of note, some with beautiful old glass. In the grounds of the Yorkshire Philosophical Society are the ruins of S. Leonard's Hospital and the Multangular Tower. Adjacent are the ruins of the 11th



H.M.S. York. Name ship of a class of cruisers. She was begun in 1927
Stephen Cribb, Southsea

century S. Mary's Ahhey, a Benedictine foundation. The castle, of which the oldest part is Clifford's Tower (Norman), is now the site of the assize court and military prison. Among other features of interest are the Gothic guildhall, the hall of the Merchant Adventurers, S. Mary's Convent, and S. Peter's School, refounded in 1557. Market day, Sat. Pop. 86,530. See Chapter.

YORK. British cruiser. The nameship of a class of six cruisers, she was laid down in 1927. Her length is 575 ft. and she displaces 8,400 tons. She carries 12 guns and has six torpedo tubes. Her designed speed is 31.25 knots.



York. The cathedral or minster of S. Peter, which presents one of the most perfect examples of Perpendicular architecture in England

YORK, HOUSE OF. Name given to the descendants of Edward, duke of York. They reigned in England 1461-85, and on their behalf the Wars of the Roses were fought. In 1385 Richard II made his uncle, Edmund of Langley, duke of York. Edmund had two sons. The elder, Edward, became duke of York, but left no sons when he was killed at Agincourt. The younger son, Richard, earl of Cambridge, had been executed for treason against Henry V, 1415. His son Richard succeeded to his uncle's dukedom. After the death of Richard his sons, Edward IV and Richard III, represented the family. See Lancaster; Roses, Wars of the.

YORK, ALBERT, DUKE OF (b. 1895). British prince. The second son of George V, he was born at York Cottage, Sandringham, Dec. 14, 1895, and was baptized Albert Frederick Arthur George. In Jan., 1909, he entered the Royal Naval College, Osborne. In Sept., 1913, he joined the Collingwood as midshipman, and in 1916 was made a K.G. Created duke of York, 1920, he married Lady Elizabeth Angela Marguerite Bowes-Lyon, daughter of the earl of Strathmore, in 1923. A daughter, Elizabeth, was born in 1926, and a second daughter, Margaret Rose, in 1930. In May, 1927, the Duke opened the new Australian Houses of Parliament at Canberra. See Elizabeth; Glamis; Royal Family; Strathmore.



Duke and Duchess of York

Photos: Hertram Park and Hoppel



Frederick Augustus, Duke of York, British soldier After T. Phillips

over, with a number of reverses, and in 1794 was recalled. In 1799 he took another force to the Netherlands. York was made commander-in-chief in 1798, and he died Jan. 5, 1827.

YORK, RICHARD, DUKE OF (1411-60). English nobleman. Born Sept. 21, 1411, he was the son of Richard, earl of Cambridge. His grandfather was Edmund, duke of York, a son of Edward III, and when his uncle, Edward, was killed at Agincourt, in 1415, he became the head of his family. In 1455 the Wars of the Roses began, and York gained the upper hand. In 1459, however, he was worsted, and took refuge in Ireland. He returned to England in 1460, and formally claimed the throne. His foes, however, caught him at Sandal Castle, near Wakefield, where he was killed, Dec. 30, 1460. See Edward IV.

YORK AND LANCASTER REGIMENT. Regiment of the British army. Originally the 65th and 84th Foot, the former raised in 1756,

it saw active service in the West Indies and against the American colonists. In 1794 it helped to capture Martinique, and its other services during the French War include the seizure of the Cape of Good Hope and several battles in the Peninsular War. During the Indian Mutiny the regiment helped to defend Lucknow, and its more recent campaigns include the New Zealand War, 1861-65; the Egyptian War, 1882; and the South African War, where it took part in the relief of Ladysmith. The regiment had, in addition to its regular and special reserve battalions, twelve service and two territorial battalions in the Great War. The depot is at Pontefract.



York and Lancaster Regiment badge

YORK HOUSE. Royal residence in London. Part of St. James's Palace (q.v.), so named since it was the residence of George V when duke of York, it became the home of his son, the prince of Wales.

YORKSHIRE. County of England. It is divided into three ridings (q.v.). Its area is 6,077 sq. m., the west riding containing 2,771 sq. m., the north 2,128, and the east 1,172, and the city of York six. In the W. is the Pennine Chain (Mickle Fell, 2,591 ft.), in the N.E. the moorland dist. of Cleveland and Hambleton Hills, and in the E. the wolds. E. of the Pennines are Wensleydale, Wharfedale, and other dales. The second of its tributaries, Swale, Ure, Wharfe, Aire, Derwent, and Don, and partly by the Ribble, Tees, and Esk. From the mouth of the Tees to Flamborough Head the coast is generally high and rocky, the chief indentations being Robin Hood's, Filby, and Bridlington bays, but thence to Spurn Head it is low and unrelieved.

Next to coal, iron ore, fireclay, limestone, and sandstone are the chief minerals worked. Much of the N. riding is pasture, and sheep farming and horse breeding largely engage attention. Yorkshire is noted for its health

resorts. There are numerous ancient castles, and the monastic ruins include Fountains, Jervaulx, Kirkstall, Bolton, Whitby, and other abbeys. York is the co. town. Pop. (1921) W. Riding, 3,181,174; N. Riding, 456,436; E. riding, 460,880. See Whitby; York.

YORKSHIRE LIGHT INFANTRY.

Regiment of the British army. Officially known since Dec., 1920, as The King's Own (Yorkshire Light Infantry), this regiment is made up of the old 51st and 105th regiments of the line. The 51st was raised in 1755, and was one of the six British regiments which fought at Minden. It fought under Moore at Corunna, and was at Salamanca, Vittoria, and the storming of Badajoz before it formed part of the line at Waterloo. Regular, territorial, and service battalions rendered good service during the Great War. The depot is at Pontefract.



Yorkshire Light Infantry badge

YORKSHIRE REGIMENT. Regiment of the British army. Its official title since Dec., 1920, is The Green Howards (Alexandra, Princess of Wales's Own Yorkshire Regiment). Originally the 19th Foot, dating from 1688, it served under William III and Marlborough in Flanders, and at the siege of Douai it showed the utmost gallantry. In 1745-46 it fought at Fontenoy and Lawfield. The Yorkshires served in the Crimea, went to the Tirah in 1897, and in S. Africa were at Paardeberg. In the Great War this regiment had six service and two territorial, in addition to its regular and special reserve battalions. The regimental depot is at Richmond.

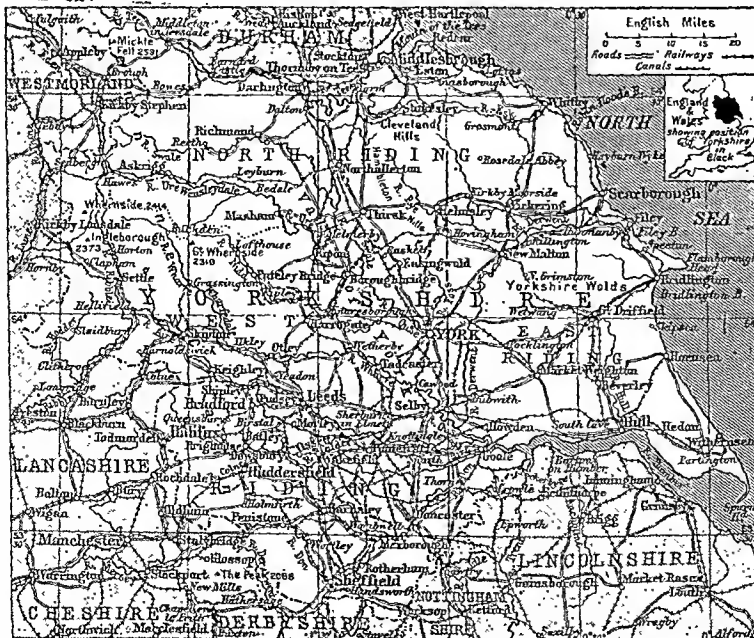


Yorkshire Regiment badge

YORKSHIRE TERRIER. Small breed of dog descended from the Scotch terrier, but with longer and more silky hair. Similar in general shape to the smooth terrier, the body is longer and the limbs much shorter. The coat is of three colours—the back being blue-slate, the head and legs silvery fawn, and the under parts tan. The nose is perfectly black and the small ears are carried half-erect. See Dog; Terrier; also p. 1453.

YORKTOWN. Town of Virginia, U.S.A. It stands on York River, 65 m. S.E. of Richmond. Yorktown has twice been besieged. In 1781, during the American War of Independence, Lord Cornwallis had withdrawn into it his whole force, about 7,200 men. The investment by 16,000 Americans and French began on Oct. 5, and Cornwallis surrendered on Oct. 19. The second siege occurred in April-May, 1862, during the American Civil War, when the Confederates held the town from April 4 to May 3.

YOSEMITE VALLEY. Gorge in California, U.S.A. It is situated at the S.W. base of the Sierra Nevada. Remarkable for its wildly picturesque scenery, it is between 7



Yorkshire. Map of the largest English county, famous for its manufactures and coal mines

and 8 m. long, and from $\frac{1}{2}$ m. to more than 1 m. in breadth. It is enclosed on three sides by almost vertical walls of granite. The Merced river, which traverses the valley, forms a number of magnificent waterfalls. The valley forms part of the Yosemite National Park, covering 1,126 sq. m. Pron. Yo-sem-mity.

YOUGHAL. Seaport and urban dist. of co. Cork, Irish Free State. It stands on the estuary of the Blackwater, 27 m. from Cork, and is served by the G.S. Rlys. The collegiate church of S. Mary dates from the 13th century. The town has a good harbour and a trade in agricultural products, etc. It is a centre for salmon fishing. Sir Walter Raleigh lived near, at Myrtle Grove. Pop. 5,339. Pron. Yawl.



Yorkshire Terrier, a silky-haired breed. See article p. 1452

YOUNG, ARTHUR (1741-1820): British writer. Born in London, Sept. 11, 1741. He wrote a number of works which gave a great impetus to scientific agriculture in England. They include A Tour Through the Southern Counties, 1768; A Tour Through the North of England, 1771; A Tour in Ireland, 1780. His Travels in France during 1787-89 has great historical value for the accurate pictures of that country just before the Revolution. He died April 20, 1820.

YOUNG, BRIGHAM (1801-77). Mormon leader. Born at Whitingham, Vermont, June 1, 1801. He entered the Mormon Church in 1832, and was chosen president in 1847. By his skill and perseverance he established his people at Salt Lake City in 1847. In 1852 he published the Mormon doctrine of polygamy, and enjoined its practice on all his followers, himself marrying over 20 wives and becoming the father of 57 children. He died at Salt Lake City, Utah, Aug. 29, 1877. See Mormons; Salt Lake City.



Brigham Young, Mormon leader

YOUNG ENGLAND. Name given to an English political party that appeared about 1842-46. Its members were young Tories who in many ways followed the policy of the party leader, Sir Robert Peel. Drawn chiefly from the aristocracy, its members advocated friendlier relations between rich and poor. Disraeli belonged to the party, whose ideas he described in Sybil, or The Two Nations.

YOUNGHUSBAND, SIR FRANCIS EDWARD (b. 1863). British soldier and traveller. Born at Murree, India, May 31, 1863, he joined the 1st Dragoon Guards in 1882. In 1890 he was transferred to the Indian service, and he held various political appointments, being British commissioner to Tibet, 1902-4, and British resident in Kashmir, 1906-9. His travels included a journey from Peking to India through Chinese Turkistan in 1887. His writings include The Relief of Chitral. His brother, Sir George John Younghusband (b. 1859), had also a long career of active service in India and elsewhere. He wrote The Story of the Guides, 1908.



Sir F. E. Younghusband, Lafayette

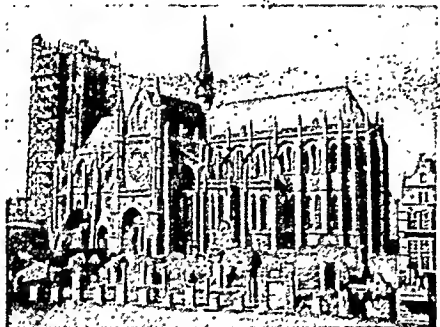
YOUNG MEN'S CHRISTIAN ASSOCIATION. International organization for promoting the spiritual, social, physical, and educational welfare of young men. In its present form it was founded by Sir George Williams (q.v.) in 1844. The movement spread rapidly, and associations, as they were called, were formed all over the country, as well as on the continent of Europe. In 1851 it was started in America, in 1853 in Australia, New Zealand, and S. Africa, and in 1854 an alliance of associations of the U.S.A. and Canada was established.

During the Great War the British Y.M.C.A. rendered invaluable service by its welfare work at home and in the battle areas. It organized huts and canteens for war workers and soldiers in camp and billets. The national headquarters are at Tottenham Court Road and 12-13, Russell Square, London.

The Young Women's Christian Association is a similar organization. It was founded in 1857 in England and in the following year in America. The British headquarters are at 17, Clifford Street, W.1.

YOUNGSTOWN. City of Ohio, U.S.A. It stands on Mahoning river, 64 m. E. by S. of Cleveland, and is served by the Baltimore and Ohio and other rlys. There are blast furnaces, iron and steel works, and rolling mills. Pop. 180,680.

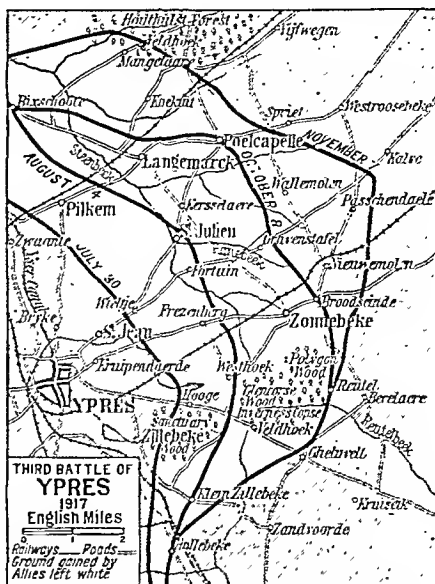
YPRES (Flemish Yper). Town of Belgium, in West Flanders. It lies in flat country, overlooked by low ridges to the E. and by the higher hills of the Kemmel chain, 36 $\frac{1}{2}$ m.



Ypres. The cathedral, in course of rebuilding after its destruction by bombardment in 1914-18

by rly. S.W. of Bruges. During the Great War the town was almost completely destroyed, by German bombardment, only a few fragments of the Cloth Hall and of S. Martin's church remaining. The Cloth Hall, on the Grand Place, built in the 13th and 14th centuries, was one of the most remarkable buildings of its kind in Belgium. The church of S. Martin, formerly the cathedral, was chiefly built in the 13th century, with 15th century tower. Most of the buildings have been restored. In 1927 a memorial arch, known as the Menin Gate (q.v.), was erected on the Menin Road at Ypres in honour of the fallen.

YPRES, BATTLES OF. The four battles of Ypres were fought between the Germans and the Allies in the Great War. The first battle, Oct.-Nov., 1914, was a great German offensive, with the Channel ports as its objective. On the British left were French and Belgian troops. On Oct. 21 the British 1st corps (Haig) took up its position on the left of the British 7th division in what afterwards became known as "The Salient" of Ypres, and advanced towards Passchendaele just at the moment when the 4th German army was opening its great offensive. The Germans drove back the French under Mitry and threatened the British left flank. On Oct. 29, at the centre of the salient the Germans broke through the British front near Gheluvelt on the Ypres-Menin road. British reserves counter-attacked



and recovered almost all the lost ground. On Oct. 30 the Germans were repulsed at Messines, but carried Zandvoorde and Hollebeke, and the British were pushed back to near Wytshaete and St. Eloi. On the following day the Germans made a furious attack on Gheluvelt, held by only 2,000 infantry, and carried it. Beyond that point they were stopped by a most gallant counter-attack of the 2nd Worcesters, but Messines fell to them. After a day's fighting died down.

The second battle began with a serious attack which was delivered by the Germans on Nov. 22, 1915, along the N. section of the front from Steenstraete to near Langemark. In this battle the Germans used chlorine gas for the first time, and, being defenceless against it, French Colonial troops gave way, leaving the flank of the 3rd Canadian Brigade in the air. On April 23, with fearful casualties, two Canadian battalions counter-attacked and carried the Allied front 1,000 yards N. Further German attacks forced back the British line.

The third battle consisted of a series of fierce and costly engagements in which the British attacked the German positions held by the 4th army round the salient. The opening attack took place on July 31, 1917, and fighting continued until Nov. 6, when Canadian troops stormed Passchendaele. The British casualties reached 400,000.

The fourth battle, which is sometimes called the battle of the Lys, opened on April 9, 1918. It was the continuation in the N. of the great German offensive described as the second battle of the Somme (q.v.). It opened on April 9 with a strong infantry attack on the Portuguese front in the sector on both sides of the Lys, from Richebourg l'Avoué to Picantin. The Portuguese, after a brief resistance, were overpowered. Thus a great gap was torn in the British front, and through it poured the Germans. At Merville, on April 11, the Germans broke through the British front as far as a point S.W. of Bailleul. On April 12 Australian troops went into action and harried the German road to the sea. Later in the month the Germans stormed Kemmel Hill and gained more ground, but by the 28th they had definitely been held. See Bixchoote; Gheluvelt; Hill 60; Kemmel; Passchendaele, etc.

YPRES, JOHN DENTON PINKSTONE FRENCH, 1ST EARL OF (1852-1925). British soldier. He was born at Ripple, Kent, Sept. 28, 1852. After four years in the Britannia he joined the militia, and in 1874 obtained a commission in the 8th Hussars. He received his majority

in 1883, and the following year was attached to the force sent to relieve Gordon. In 1893 he became assistant adjutant-general of cavalry. In the South African War French commanded the cavalry division in Natal, won the battle of Elandslaagte, and relieved Kimberley.



1st Earl of Ypres
British soldier
Russell

On his return he was knighted and was given the command at Aldershot. In 1911 he was made chief of the imperial general staff in 1912, and in 1913 a field-marshal.

When the Great War began he was selected to lead the expeditionary force. He fought the battle of Mons and was in command of the famous

retreat and the later advance to the Aisne. He fought the first two battles of Ypres, and the battle of Festubert in May, 1915, and banded over the command to Haig in Dec., 1915. In 1916 a viscounty was conferred upon him. He took command of the forces in Britain until, in 1918, he was appointed viceroy of Ireland. In 1921 he retired and was created earl of Ypres. He died May 22, 1925. His book entitled 1914 was a justification of his war record.

YSER (Flemish IJzer). River of France and Belgium. Rising W. of Cassel, dept. of Nord, France, it flows past Dixmude, and enters the North Sea near Nieuport. Its length is 55 m.

BATTLE OF THE YSER. This battle, fought Oct. 15-31, 1914, was the successful defence of the line of the river Yser from Nieuport to Dixmude by the Belgian army with French support against the 4th German army. On Oct. 18 the Germans stormed Mannekeasvere (E. of the Yser) and Kewem; at Nieuport they were repulsed by the Belgians, and at Dixmude all their assaults shattered on the strong brigade of French marines. But the Allies had been forced back to the W. bank of the Yser except at Nieuport and Dixmude.

On Oct. 21 the assaults were renewed at these two points, and also against the centre of the Yser line at Schoorbeke. On the 29th the Germans made preparations for a final attack. They penetrated to Ramsappelle, beyond the embankment, but on the 31st the Belgians and the French drove out the Germans, hundreds of whom perished in the area flooded by the Belgians. In Oct., 1930, a monument commemorating the battle was unveiled at Nieuport.

YSSEL or **ISSSEL.** River of the Netherlands. A distributary of the lower Rhine, it branches off 2 m. above Arnhem, and flows N. and N.E. through the provs. of Gelderland and Overijssel (Overijssel) to enter the Zuider Zee near Kampen. On its banks are Zutphen, Deventer, and Kampen. Its length is 87 m.

YSTALYFERA. Iron working centre of Glamorganshire, Wales. It is 7½ m. N. of Neath, and is served by the L.M.S. Rly. Pop. 7,200.

YSTRADGYNLAIS. Coal mining centre of Brecknockshire, Wales. Standing on the Tawe, 12½ m. N.E. of Swansea, it is served by the G.W. Rly. Pop. 10,761.

YTHAN. River of Aberdeenshire, Scotland. It rises at Ythan Wells, 7 m. E. of Huntly, and flows past Fyvie and Ellon to the North Sea, where it discharges 12 m. N. of Aberdeen. Its length is 36 m.

YTTERBIUM. Rare element discovered in 1878 by Marignac in the mineral gadolinite. In 1907 Urbain announced that he had been able to separate ytterbium by fractional

crystallisation into two elements, which he called neoytterbium and lutecium. Its symbol is Yb, atomic weight 173.6, and atomic number 70. See Lutecium.

YTTRIUM. One of the metallic elements. Its chemical symbol is Yt, atomic weight 88.9, and atomic number 39. It is a dark grey powder, and is found in the mineral gadolinite and other rare earths.

YUCATAN PENINSULA. Land mass of Central America. It comprises parts of Mexico, British Honduras and Guatemala, and separates the Gulf of Mexico from the Caribbean Sea. It is about 400 m. long and some 200 broad. It contains forests of mahogany, rosewood, and other valuable woods, and produces henequen or sisal hemp, maize, rice, and tobacco. The peninsula is rich in antiquities. It remained a Spanish possession until 1821, and in 1852, after periods of independence, became part of Mexico.

The Mexican state of Yucatan covers 15,939 sq. m. Mérida is the capital. Pop. 358,221. See Aztec; Maya.

Yucca. Genus of plants of the order Liliaceae. See Adam's Needle.

YUGOSLAVIA. Kingdom of S. Europe. It came into being after the Great War as a result of the collapse of Austria-Hungary and the union of its Yugoslav (S. Slav) territories with the former kingdoms of Serbia and Montenegro. It includes Bosnia and Herzegovina, Croatia-Slavonia, Dalmatia, parts of Baranya, Bačka, and the Banat, and some small areas detached from Bulgaria. The frontier with Italy was determined by the treaty of Rapallo (q.v.), except as regards Fiume, which in 1924 was awarded to Italy, Baros going to Yugoslavia. In 1923 Serbia obtained from Greece a free zone in the harbour of Salonica. Belgrade is the capital and the largest city. The area of the kingdom is 96,134 sq. m. Pop. 13,290,000.

Yugoslavia is mainly an agricultural and pastoral country. The chief crops are maize, wheat, barley, oats, and rye, others including

the Croats began to agitate for autonomy, and so high did feeling run that in June four Croat deputies were shot during a debate in the National Assembly (Narodna Skupština).

On Jan. 6, 1929, King Alexander abolished the constitution, suspended parliament, and took the executive power into his own hands, choosing a ministry from persons outside political life. On Feb. 17, 1929, a royal decree brought into being a supreme legislative council of 17 nominated members (11 Serbs, 4 Croats, and 2 Slovenes); the old chamber had consisted of 315 representatives. The name of the state was changed in the following Oct. from the kingdom of the Serbs, Croats and Slovenes to the kingdom of Yugoslavia. See Belgrade; Serbia.

YUKON. Territory of Canada. Previously part of the North-West Territories, it was made into a separate political unit in 1898, after the discovery of gold on the Klondike. It is bounded by the Arctic Ocean, Alaska, British Columbia, and the North-West Territories. Mt. Logan is 19,540 ft. high; Mt. St. Elias and several other peaks are over 15,000 ft. The chief river is the Yukon, which flows N.W. into Alaska, and, after a total course of 2,300 m., enters the Bering Sea.

The territory is governed by a Gold commissioner and a territorial council of three members. Dawson is the capital; White Horse, in the S., is a mining settlement. The chief industry is mining, the minerals including gold, silver, lead, coal, and copper. Big game and fur-bearing animals are plentiful. There is a rly. from Skagway, in Alaska, to White Horse. The area is 207,076 sq. m. Pop. (1921) 4,157; in 1901 it was 27,219.

YUNCA (Quichua Yucacuna, inhabitants of a hot land). Name of an ancient Peruvian nation. They lived on the Pacific coast, with their capital near the modern city of Trujillo. Yunca culture produced some of the greatest prehistoric works of S. America. See Peru.

Yuriev. Russian name of the Estonian town Tartu (q.v.)



fruit and sugar beet. Minerals include coal, iron, copper, lead, chrome, and antimony. There are over 6,000 m. of rlys., mostly controlled by the state. A passenger air line was opened in 1928 between Belgrade and Zagreb (Agram). Yugoslavia unites under one rule the majority of the S. Slavs, who, early in 20th century, were living under six different governments and were represented in 14 different national or provincial parliaments. In 1928

Yugoslavia Map of the kingdom composed of the former states of Serbia and Montenegro and parts of Bulgaria and the former Austrian empire

Z. Twenty-sixth letter of the English and twenty-fifth of the Latin alphabet. It is a soft sibilant. In the Latin alphabet its use is reserved for Greek words. Its usual English value is that of *s* in *rose*. The words in modern English beginning with *z* are of foreign origin. See Alphabet; Phonetics.

ZADKIEL. Pseudonym of Riebard James Morrison (1795-1874), writer on astrology and astronomy. Born June 15, 1795, he entered the navy in 1806, becoming lieutenant in 1815, served in the coastguard, 1827-29, and in 1831 founded *The Herald of Astrology*, known later as *Zadkiel's Almanac*. He died April 5, 1874.

ZAGHLUL, SAAD OR SAADALLAH (1852-1927). Egyptian nationalist leader. Born at Biana, he was educated at the university of Al Azhar, and took part in Arabi's rebellion. He then became actively associated with the Egyptian national movement, and in 1906 was minister of education and later of justice. Dismissed from office, he began to show anti-British tendencies and inaugurated a furious anti-British campaign. He was arrested in Dec., 1921, but, allowed to return to Egypt, was prime minister, Jan.-Nov., 1924. He died Aug. 23, 1927.

Zagreb. Alternative name for the Yugoslavian town Agram (q.v.).

ZAHAROFF, SIR BASIL (b. 1850). Greek financier. A prominent member of the Greek community in London, he was naturalised in France, where he also lived. His munificent donations to charity and science included £25,000 to the British Government to endow a professorship of aviation attached to the Imperial college of science. He was created G.B.E. in 1918 and G.C.B. in 1919.



Sir Basil Zaharoff, Greek financier

ZAMA. City in the Roman prov. of Numidia. Five days' march W. of Carthage, near Sicca Veneria (El Kef), it was the scene of the defeat of Hannibal by the younger Scipio in 202 B.C. which ended the second Punic War. See Hannibal.

ZAMBEZI. River of Africa. It rises in Angola near the headstreams of the Kasai, an affluent of the Congo, and flows with a great double curve to its mouth in Mozambique on the E. coast of the continent. It is navigable for 400 m. to its mouth, where is a delta covering 2,500 sq. m. The chief affluent is the Shire (q.v.). Its length is some 1,600 m. The Trans-Zambezia rly., 175 m. long, connects Dondo, on the Beira Junction Rly., with Murraça, on the S. bank of the river. It has been decided to build a bridge across the river to give rly. connexion between Nyasaland and Beira. See Victoria Falls.

ZAMIA. Genus of perennial palm-like or fern-like plants of the order Cycadaceae. They are natives of tropical America and the West Indies. The leaves are produced one at a time, and form a crown. In some species they are 8 ft. or more in length. The fruit of the zamia is in the form of cones.

ZANGWILL, ISRAEL (1864-1926). British novelist. Born in London, the foundation of his literary reputation was his series of masterly studies of Jewish life, of which *Children of the Ghetto*, 1892, is the best known. His other works include *Ghetto Tragedies*, 1893; *The King of Schnorrers*, 1894; *The Master*, 1895;



Israel Zangwill, British novelist
Russell

Dreamers of the Ghetto, 1898; *They That Walk in Darkness*, 1899; *The Mantle of Elijah*, 1900; *Ghetto Comedies*, 1907. Among his plays are *Merely Mary Ann*, 1903; *The Melting Pot*, 1908; *The War God*, 1911; *Too Much Money*, 1918; *The Voice of Jerusalem*, 1920. He died Aug. 1, 1926.

ZANTE. One of the Ionian Islands, a department of Greece. Currants are exported. The chief town is also named Zante. Pop. dept., 40,492; town, 11,609.

ZANZIBAR. British protectorate in E. Africa. It consists of the islands of Zanzibar and Pemba (q.v.) and adjacent small islands. Zanzibar island lies off the N.E. coast of Tanganyika Territory, 25 m. N. of Dar-es-Salaam. The clove industry is the most important, the protectorate yielding the bulk of the world's supply. There is cable communication with Europe, and both Zanzibar and Pemba have wireless stations. The area of Zanzibar island is 640 sq. m. Zanzibar town, on the W. coast of the island, has a magnificent harbour. Pop. island, 128,099; town, 38,700.

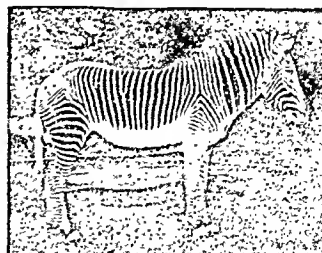
In 1832 the Imam of Muscat made Zanzibar town his capital, but on his death in 1856 his dominions were divided between his sons, and the African possessions were declared independent of the parent state. They included the island of Pemba and a coastal strip on the mainland. In 1890 the islands were declared a British protectorate, the mainland territory being divided between Germany, Italy, and Great Britain. The British mainland portion is now the Kenya Protectorate. In 1926 executive and legislative councils were set up, presided over respectively by the sultan and the British resident. See Africa.

ZARA. Seaport of Dalmatia, assigned to Italy by the treaty of Rapallo (q.v.). It is on the Adriatic Sea, 72 m. N.W. of Spalato (Split), and contains Roman remains and relics of Venetian rule. The round church of S. Donatus was built in the 9th century over the pavement of the Roman forum. The Romanesque cathedral dates from the 13th century. Pop. 18,779.

Zarathustra. Founder of the religion of ancient Persia and the Parsees, known as Zoroaster (q.v.).

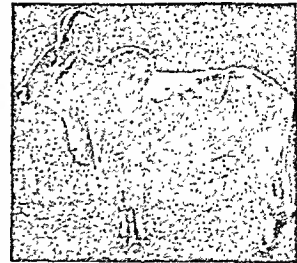
ZEALAND (Dan. Sjaelland). Island of Denmark (q.v.), containing most of the capital, Copenhagen. It lies between the Great Belt and the Sound, its N.E. part being barely 3 m. from the coast of Sweden. To the N. is the Kattegat, and to the S. are the islands of Laaland, Falster, and Møen, which separate it from the Baltic Sea. The area is 2,680 sq. m. Pop., including Møen, Amager, and adjacent islets, 1,270,000.

ZEBRA. Group of animals of the horse family, found only in Africa. They are distinguished by the elaborate black striping on their tawny coats. The common or mountain zebra (*Equus zebra*) occurs in S. Africa. Grévy's zebra, found in Somaliland and Shoa, is larger than the mountain species. The ground colour of its pelt is almost white, and the stripes are very narrow and numerous. A rare species, Foà's zebra, confined to the mountains of the Zambezi dist., is distinguished by a peculiar arrangement of its narrow stripes. Burchell's zebra (*E. Burchelli*) which is found on the South African plains, resembles the variety known as the quagga, and has a tail like a horse. See Quagga.



Zebra. Grévy's species, distinguished by its large size and closer stripes

ZEBU (*Bos Indicus*). Humped race of horned cattle. They are bovine mammals centring in India, but represented by numerous



Zebu. Domesticated ox used in India for draught purposes
Gambier Bolton, F.Z.S.

varieties in all tropical countries. They are mainly kept for work, for which their ability to withstand the tropical sun, tropical parasites and infectious diseases, and their wiry frame, render them suitable.

ZECHARIAH. Minor prophet of the Old Testament. He prophesied from the second to the fourth year of Darius Hystaspis. The first six chapters of his book consist of a series of visions dealing with the circumstances of his own time. The remainder is obscure in meaning and of uncertain date; but it appears to be the work of some anonymous writer shortly after the time of Alexander the Great.

ZEDEKIAH. Last king of Judah. The youngest son of Josiah, he was placed on the throne by Nebuchadnezzar when Jehoiachin was taken captive to Babylon. He was 21 years old when he became king, and his reign lasted for 11 troublous years. Against the warnings and advice of Jeremiah he joined in an intrigue against the king of Babylon. His eyes were put out, and he spent the rest of his life as a prisoner at Babylon.

ZEDOARY (*Cureuma zedoaria*). Perennial herb of the order Zingiberaceae. A native of the East Indies, it has tuberous roots, and broad leaves which are silky beneath. The red, tubular flowers are produced in spikes. The tubers are used for making a perfume and as an aromatic tonic; *C. aromatica* is used for similar purposes. The tubers of *C. longa* yield turmeric.



Zedoary. Aromatic tuberous roots and spike of flowers

ZEEBRUGGE. Town of Belgium, in the prov. of W. Flanders. It lies on the coast, 8 m. by rly. N. of Bruges at the mouth of the canal which links Bruges with the sea. A train ferry service with Harwich was opened in 1924. In the Great War the Germans made it a centre of the coastal defences and a submarine base for war on allied shipping.

ATTACK ON ZEEBRUGGE. This was a British naval operation undertaken with the object of blocking the exit of the Bruges canal at Zeebrugge so as to prevent the passage of German submarines. On the night of April 22-23, 1918, a British naval contingent under vice-admiral Sir R. Keyes (q.v.) crept across the Channel and dashed into the harbour of Zeebrugge. A landing was effected on the mole to distract attention, while three blockships, filled with cement, were sunk in the canal. The old cruiser, *Vindictive*, and the ferry boats *Iris* and *Daffodil* carried the landing parties, who blew up the viaduct. See Carpenter, A. F. B.; Ostend; *Vindictive*; also illus. p. 1393, 1456.

Zeerust. Town in the Transvaal. It is 149 m. by rly. N.N.W. of Johannesburg, and lies in the fertile Marico valley. Pop. 2,000.

ZENANA (Persian, xanana, from zan, woman). Term used for a Hindu harem, i.e. for the apartments in which the women of a family are secluded, and also for the women.

ZEND-AVESTA. Name by which the sacred books of the Parsees are known in the West. Correctly, the name should be Avesta and Zenda, Law and Commentary. Written originally in Zend, a language allied to Sanskrit, translated into Pahlavi about the 3rd cent. A.D., and later into Parsee, what exists is regarded as a fragment. The work is attributed in part to Zoroaster (q.v.).

ZENO (b. 490 B.C.). Greek philosopher. He lived at Elea in Italy. Friend and associate of Parmenides, he is chiefly remembered as the author of the famous paradoxes of Achilles and the Tortoise and the Arrow.

Another Zeno (c. 340-264 B.C.) was a Greek philosopher, founder of the Stoic school of philosophy, and known as Zeno of Citium, a town in Cyprus. In succession an adherent of the Cynic, Megarian, and Academic schools, but dissatisfied with each, about 310 he founded a new system and a school of his own at Athens. He opened his school in the Stoa Poikile (painted porch), and was its president for fifty-six years. See Stoicism.

ZENO (426-491). East Roman emperor, 474-491. An Isaurian by birth, he became chief of the bodyguard of Leo I, whose daughter Ariadne he married and whom he succeeded. Through the intrigues of Verina, widow of Leo I, her brother Basiliscus was proclaimed emperor. Zeno fled to Isauria, but the people soon tired of Basiliscus and Zeno was re-instated, and reigned until 491.

ZENOBLIA. Queen of Palmyra; A.D. 267-272. Famed for her beauty and strength of character, she was the wife of Odenathus and after his assassination became regent for her son, Vaballath. While Claudius II was repelling an invasion of the Goths, she occupied Egypt, A.D. 270, and after Aurelian had been defeated by the Goths, she proclaimed her son Augustus. Aurelian, however, defeated her at Emesa, and took Palmyra, 273. Zenobia was taken prisoner, and spent her remaining years in retirement at Tibur. See Aurelian; Palmyra.

ZEOLITE. In mineralogy, an important group of hydrous silicates of aluminium, sodium, and calcium. The group includes the minerals analcite, laumontite, natrolite, stilbite, and chabazite. They are nearly all secondary minerals, and are found in fissures and cavities of basalts and similar rocks.

ZEPHANIAH. Minor prophet of the O.T. in the days of King Josiah. A son of Cushi, probably of the royal house, his short book has been called a compendium of prophecy, dealing first with universal judgement for sin, and then briefly with universal salvation.

ZEPHYRUS. In Greek mythology, the personification of the west wind. He was a son of Eos, the Dawn, and was regarded as beneficent to sailors, as opposed to such violent winds as Aquilo, the N.E. wind.

ZEPPELIN, FERDINAND, COUNT (1838-1917). German airship designer. Born at Constance, July 8, 1838, he joined the army at the age of 20. Retiring in 1891, he devoted the remainder of his life to constructing airships of a rigid type. In 1906 he made a successful airship flight of 60 miles in two hours. The German government then came to his help, and in 1908 his fourth airship, passed the government tests. A national Zeppelin fund was started, and thereafter numerous airships were built. He died March 8, 1917. See Aeronautics; Air Raid; Airship.



Count Zeppelin, German airship designer

ZERMATT. Village and tourist centre of Switzerland. It stands in a valley surrounded by mountains, at an alt. of 5,315 ft., 22 m. by rly. S. of Visp. Near the base of the Matterhorn (q.v.) and Monte Rosa, it is the starting point of the rly. to the top of the Gornergrat. Pop. 750.

ZERO. Mathematical symbol which signifies the absence of quantity or number. It is written 0. In thermometry it is used as one of the fixed points of temperature.

Absolute zero (-273° C.) is the temperature at which the molecules of a gas exert no pressure on the sides of a containing vessel. Absolute zero has not been reached, but by 1922 a scientist had got within three degrees of it by allowing liquefied helium to boil. See Heat.

ZETLAND, MARQUESS or. British title borne since 1892 by the family of Dundas. In 1762 Lawrence Dundas, a contractor and an M.P., was made a baronet. The family obtained estates in Shetland, and Sir Thomas, the 2nd baronet, was made a peer as Baron Dundas in 1794. His son, the 2nd baron, was made earl of Zetland in 1838, this being a variant spelling of Shetland. Lawrence (1844-1929), the 3rd earl, was lord-lieutenant of Ireland, 1880-92, being made a marquess on his retirement.

His son Lawrence, the 2nd marquess (b. 1876), made a reputation as a traveller, politician, and writer. As earl of Ronaldshay he was Unionist M.P. for Horsey, 1907-16, and governor of Bengal, 1917-22.

ZEUS. In Greek mythology, the supreme god, identified by the Romans with Jupiter (q.v.). A god of the weather, especially thunder and rain, he was associated with Thessaly, especially Mt. Olympus. His chief shrine and oracle were at Dodona, where the oak was sacred to him. Son of Cronos and Rhea, he dethroned his father, and overthrew the Titans and Gigantes. His chief consort is Hera, and among his many children are Athena and Apollo. See Hera; Olympia; Pergamum; Titans; also illus. above.

ZIGGURAT. Temple-tower constructed in diminishing stages, in Babylonia and Assyria. The word means a high place. The external ascent, usually spiral, was sometimes an upright stairway. See Ur; also illus. p. 1373.

ZIMBABWE (Karanga, houses of stone). Bantu name for various ancient stone strongholds, especially in S. Rhodesia. Great Zimbabwe denotes three adjacent groups of ruins 17 m. S.E. of Victoria.

Explored by J. T. Bent in 1891, they were found to comprise an irregular oval 331 ft. in circuit, enclosed by a wall of unmortared granite blocks, in parts 31 ft. high and 15 ft. thick at the base. An inner parallel wall 190 ft. long forms a narrow passage from one entrance to a confined area containing a solid conical tower 31 ft. high and 57 ft. round the base. Within the ruins were found steatite carvings, especially of hawk-like birds, bowls, phallic emblems, crucibles, an ingot-mould of an old Phoenician type, and gold objects. In 1928 the British Association organized an expedition to examine the ruins, and in 1930 fresh discoveries were made.

ZINC. One of the metallic elements. Its chemical symbol is Zn, atomic weight 65.38; atomic number 30. When pure it is a bluish-white crystalline metal, brittle at ordinary temperatures, but malleable between 100°-200° C., after which it becomes extremely brittle. It is a fair conductor of electricity, and is known in the trade as spelter.

The metal is not found native in any quantity. The chief sources are the sulphide, sphalerite or blende, and the carbonate, calamine. Red zinc ore is the monoxide. Zinc ores occur in Cumberland, Derbyshire, Cornwall, and N. Wales in Britain; in Belgium, Poland, Germany, Spain, Sardinia, etc., on the Continent; in the U.S.A., etc. In 1929 the world's output was 1,611,610 tons, of which the U.S.A. furnished 628,062 tons, and Belgium 220,315 tons.

Zinc is prepared by conversion of the ores into the oxide, which is afterwards distilled with carbon. Zinc is used for galvanising iron wire, and iron sheets for roofing, as it tarnishes only slowly in the air. It is one of the alloys of brass, German silver, etc., and is widely employed as a chemical reagent and in electric batteries.

ZINNIA. Small genus of annual and perennial herbs of the order Compositae. Natives of Central America, they have opposite, undivided leaves, and brightly coloured flower heads. Zinnias, from which most of the garden varieties have been derived, is an annual.



Zinnia. Bright-coloured flower heads and leaves

ZION, MOUNT. One of the hills on which Jerusalem was built. S. of Mt. Moriah, on which the Temple stood, it was called the City of David. The name Zion is sometimes used in a general sense for Jerusalem (q.v.).

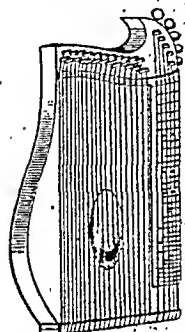
ZIONISM. Jewish movement founded by Theodor Herzl (1860-1904). It arose from a pamphlet, Der Judenstaat, 1896, in which Dr. Herzl advocated the establishment of an autonomous Jewish state in Palestine. Orthodox Messianic Judaism condemned it. Under

the present mandatory government of Palestine the Zionist Organization is an officially recognized public body which advises and cooperates with the government in all that concerns Jewish interests. In 1929 the third of three serious outbreaks in Palestine between Moslems and Jews took place. A commission was appointed to investigate the cause of the riot. See Jerusalem; Jews; Palestine.

ZIRCONIUM. One of the metallic elements. Its chemical symbol is Zr, atomic weight 91, atomic number 40. It occurs either as a black amorphous powder or a lustrous grey crystalline solid. Its chief source is the mineral zircon, and it is found in certain of the rare earths. The metal is alloyed with steel to make armour plate and high speed tool steels.

ZISKA OR **ZIZKA**, JOHN (c. 1360-1424). Bohemian soldier. Born at Trocznov, Bohemia, he served as a soldier of fortune in the German, Hungarian, and English armies. Returning to Bohemia in 1419, he turned the Hussite army into a disciplined host, his followers being called Taborites. He defeated the Germans at Prague, 1420, and though blinded, 1421, won many more victories. He died Oct. 11, 1424.

ZITHER. Musical stringed instrument. Popular in the highlands of Bavaria, Styria, and Tirol, it is a shallow box of about 20 ins. long, 10 ins. wide, and 8 ins. deep, and having a round opening in the upper sound-board. The strings fall into three categories: (1) five melody strings of wire tuned like the viola (q.v.), but having the A duplicated; (2) a varying number of accompaniment strings of gut; and (3) twelve bass strings, an octave lower in pitch than the accompaniment strings on the side which is farthest from the player.



Zither. Stringed musical instrument.

ZOAR. One of the five cities of the Plain near the Dead Sea. At the destruction of Sodom and Gomorrah it was spared as a refuge for Lot (Gen. 18, 19).

ZODIAC. In astronomy, a belt of the sky 16° wide containing the apparent paths of the sun, moon, and the chief planets. The zodiac was divided into twelve signs of 30° each. All these signs have their own names and symbols and are as follows: Aries; Taurus; Gemini; Cancer; Leo; Virgo; Libra; Scorpio; Sagittarius; Capricorn; Aquarius; and Pisces. The first six of these signs are N. of the equator, the remainder S. See Aries; Equinox; Precession; Sagittarius.

ZODIACAL LIGHT. This is a faint luminosity that appears in the W. sky after twilight or in the E. before dawn. It is thought to be caused by the reflection of sunlight from meteoric masses still in the original plane of the solar system.

ZOOTROPE. Mechanical invention, sometimes termed a wheel of life, conveying an impression of figures in actual motion. It consists of a rotating drum or cylinder perforated with slits. On the inside surface of the drum are represented figures in different progressive actions of running, jumping, etc. The drum being made to revolve, a visual impression of continuous motion is imparted to the various objects which are represented therein, when viewed through the slits. Pron. zoy-trope.



Zoetrope, consisting of rotating drum perforated with slits.

ZOFFANY, JOHANN (1725-1810). German painter. Born at Ratisbon, he studied in Rome, and in 1758 came to England, where he established a reputation for portraits of actors in character and conversation pieces. He became R.A. in 1769, worked in Italy, 1772-79, and in India, 1783-90, and died at Kew.



Johann Zoffany, German painter.

ZOLA, EMILE EDOUARD CHARLES-ANTOINE (1840-1902). French novelist. Born in Paris, April 2, 1840, in 1861-64 he started literary work with journalism, and the Contes à Ninon, issued in 1864, followed by the novel, *Thérèse Raquin*, 1867. Zola was one of the school of naturalist or realist novelists. His main contribution to this theory was the Rougon-Macquart series of twenty novels. In the trilogy of Lourdes, 1894; Rome, 1896; and Paris, 1898, Zola traced the movements of a priest from Catholicism to free thought. Zola's great popularity was affected by his violent championship of Dreyfus (q.v.). In Jan., 1898, he published the denunciation of the anti-Dreyfus conspiracy, beginning with *J'accuse* in *L'Aurore*, and was sentenced to a year's imprisonment. He was accidentally poisoned by tea in Paris on the night of Sept. 28-29, 1902.



Emile Zola, French novelist.

ZONE (Gr. zōnē). Division of the earth's surface determined by astronomical considerations. The zones are bounded by parallels of latitude and include two frigid, two temperate, and one torrid zone. The last lies 23° 28' each side of the equator, and the first two between the poles and 66° 32' N. and S., the temperate zones lying between the frigid and torrid zones. See Time.

ZOOLOGICAL GARDENS. Area set apart for the exhibition and study of living animals. The Jardin des Plantes, Paris, the zoological garden, Berlin, the National Zoological Park at Washington and the zoological gardens at Dublin are some of the largest. Those of the Zoological Society of London in Regent's Park, founded 1828, include mammals, birds and reptiles from all parts of the world. By the building of the Mappin Terraces a greater amount of freedom has been given to many of the animals. In 1927 the trustees bought a tract of land at Whipsnade (q.v.).

ZOOLOGY (Gr. zōon, living creature; logos, discourse). That branch of the science of biology concerned with the structure, life, habits, and classification of animals as distinguished from the other branch, botany which deals with plants. See Animal Biology; Mammal, etc.



Zodiac. Representation of the signs of the zodiac, from a 16th century MS.

habits, and classification of animals as distinguished from the other branch, botany which deals with plants. See Animal Biology; Mammal, etc.

ZOROASTER OR **ZARATHUSTRA** (Pers. Zaradusht). Founder or prophet of the old Persian religion. He figures as an historical person in the oldest portion of the Zend-Avesta (q.v.). He is believed to have been born in NW Persia, not later than 660 B.C.

ZOROASTRIANISM. Religion of ancient Persia. Named after its founder, it aimed at a reformation in the life of the people. It was monotheistic, and inculcated hospitality, philanthropy, and benevolence as against Turanian brigandage and the polytheistic idolatry, and licentiousness of the primitive Aryans. Its central idea was of a world contest between forces of good and evil, or between light and darkness, personified as Ormuzd and Ahriman. Flourishing between the 6th and 4th centuries B.C., it was made the state religion under the Sassanids, A.D. 227-651, and suffered partial extinction by Mahomedanism. Great reverence was paid to the elements.



Zouave in Moorish uniform.

ZOUAVE. Name given to a certain class of African infantry in the service of France, originally recruited from the Zwawa, a tribe of Berbers, in 1831. To-day they consist exclusively of Frenchmen, and are regarded as a corps d'élite. The uniform is an adaptation of Moorish dress, consisting of the short blue Zouave jacket, the baggy red trousers being distinctive.

ZUCCHERO, FEDERIGO (1543-1609). Italian painter. Born at St. Angelo in Vado, he studied under his brother Taddeo. After cooperating with the latter in the decoration of the Vatican, Belvedere, and other buildings, he visited France and the Netherlands, and, in 1574, England, where he painted portraits of Queen Elizabeth and Mary Queen of Scots. See illus. pp. 174, 556, 1018, 1194.

ZUG. Lake in Switzerland. Formed by the river Aa, and situated mostly in canton Zug and partly in Schwyz, it is 9 m. long and 2½ m. broad. It gives its name to a canton, the capital of which is Zug, to the S of Zürich. Pop. 9,500. Pron. Toop.

ZUIDER ZEE OR **ZEYDER ZEE** (Dutch, South sea). Inland sea of the Netherlands. The islands of Texel, Vlieland, Terschelling, and Ameland lie across the N. opening. Its greatest length is about 83 m., and its greatest width about 34 m. The chief islands are Wieringen, Marken, Urk, and Schokland, and the North Sea Canal joins it with the North Sea at Ymuiden (Ijmuiden). Ports include Amsterdam, Nieuwediep, Kampen, Harderwijk, and Harlingen. The fishing is important.

The Zuider Zee in early historical times was forest land, the enclosing islands being part of the mainland. During the 12-14th centuries enormous encroachments were made by the sea. Since the 17th century the prov. of N. Holland has regained several thousands of acres. In 1918 a bill was passed providing for the drainage of the Zuider Zee, and work was begun in 1924 on the construction of a great dyke from the N. Holland coast to Wieringen, and thence to Friesland. Pron. Zoider zay. See Netherlands.

ZULOAGA, IGNACIO DE (b 1870) Spanish painter. Born at Eibar, Vizcaya, he came of a family noted in Spanish art. He studied in Paris, 1888-93, and exhibited at the Salon in 1898. His portrait group Daniel de Zuloaga and his Daughters, 1891, firmly established

his reputation. Then followed a period of travel, as a result of which his later works acquired a new vigour and characterisation, chief among his subjects being bull-fighters, fruit-sellers, and various other Spanish types.



I. de Zuloaga.
Spanish painter.
See portrait.

ZULULAND. Division of Natal, South Africa. N. and N.W. it is bounded by Mozambique, Swaziland, and the Utrecht and Vryheid dists. of Natal, E.

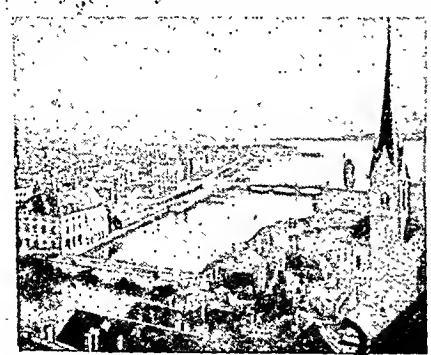
by the Indian Ocean and W. by the rest of Natal.

Beyond the coastal plains the country consists of ranges of hills and plateaux. It is well watered. The inhabitants are mainly Zulus, with a sprinkling of Basutos and other races.

ZULU WARS. The Zulus about 1820 became a powerful kingdom. Chaka was succeeded by Dingaan, who was deposed in 1839. In 1873 Cetshwayo became king, and in 1879 he came into conflict with the British forces. Several engagements took place, notably at Isandhlwana, Jan. 22, 1879, at Rorke's Drift on the same day, and at Ulundi, July 4. At the last battle the power of the Zulus was completely broken. Zululand was declared British territory in 1887. The area is 10,427 sq. m. Pop. about 260,000. See Cetshwayo; Isandhlwana; Natal; South Africa.

ZÜRICH. City of Switzerland. Capital of the canton of Zürich, it stands at the N. end of the lake of Zürich 41 m. by rly. and 25 m. direct N.N.E. of Lucerne. The Limmat separates the Grosse from the Kleine Stadt. The Grossmünster is a Romanesque church with Gothic features, built 1090-1150, 1225-1300, in which Zwingli preached. Other fine churches include the Frau Münster, built in the 13th and 14th centuries, and modernised in 1912, and S. Peter's, dating partly from the 13th century. The Swiss National Museum, a magnificent building opened in 1898, occupies the tongue of land between the Limmat and its affluent, the Sihl. The university was founded in 1832. The lake of Zürich is 25 m. long, and its breadth is 2½ m. Pop. 222,900.

ZUTPHEN. Town of the Netherlands, in Gelderland. It lies on the IJssel (Yssel), 19 m. by rly. N.E. of Arnhem. There is trade in timber and dairy and agricultural produce. The Great Church (S. Walpurgis) is a 12th century foundation; it has a pre-Reformation library. The Wyngaert tower and the remains



Zurich. General view looking towards the lake and the snow-clad Albis Alps. See above.

of the town walls are notable. The battle of Zutphen, between the English and Spaniards, was fought Sept. 22, 1586. Pop. 20,000.

ZWINGLI, ULRICH (1484-1531). Swiss religious reformer. Born at Wildhaus, Jan. 1, 1484, he became a parish priest in 1506, publicly denounced the authority of the pope

in matters of faith, and opposed the sale of indulgences. In 1518 he became pastor at Zürich, and under a Protestant government was able to teach reformed doctrines freely. He broke with Luther over the doctrine of the Eucharist. He was killed fighting for Zurich, Oct. 11, 1531.

ADDENDA AND CORRIGENDA

Later information and events, occurring while the Encyclopedia was at press are noted below together with corrections of the few errors which had escaped editorial vigilance before printing.

ABBREVIATIONS. The army ordnance corps has become a royal corps (R.A.O.C.). C.B.E. is a commendation of the British Empire. L.O.C. is a commendation of the Order of Good Hope. R.A.O.C. is a Royal Antediluvian Order of Danatians.

ABERGAVENNY. Bridge-Castle, the seat of the Marquis of Abergavenny, is in Sussex.

ABERNETHY. Station is on L.N.E. Rly.

ACCIDENT. Limit of salary or wages under the Workmen's Compensation Acts has been raised to £350.

ADAMS, A. ST. J. Died June 9, 1930.

ADDAMS, C. Minister for agriculture, 1930.

ADAMS, ORVILLE. Wright's flight in 1903 was 852 ft.

AIRSHIP, R101 was wrecked near Beauvais.

Oct. 5, 1930, on flight to India.

ALBERT MEDAL. For the navy the ribbon is blue and white.

ALEXANDRA PALACE. The organ is in the Grand Hall.

ALTON TOWERS. This is now a pleasure resort.

AMERICA CUP. Enterprise defeated Shamrock V, Sept. 18, 1930.

ANDRÉE, S. His body and those of two companions found Aug. 6, 1930.

ANAM, EUGENE. For Lymn Regis read Lymn Regis (King's Lymn).

ANSELM. In 1930 the Arsenal won the Association Cup.

ARUNDEL. This is no longer a market town.

ATLANTIC FLIGHT. Capt. Boyd and Capt. Connor flew to England, Oct. 10, 1930, in 24 hours.

AUTOMOBILE. The A.A. has over 400,000 members.

AUSTRALIAN FLIGHT. Wing-Commander Kingsford-Smith reached Port Darwin in 10 days, Oct., 1930.

BAND OF HOPE. The address of the Scottish union is now Bath Street, Glasgow.

BANNOCK (N. Ireland). Pop. (1926) 13,316.

BARROW-IN-FURNESS. The hangars for airships and dirigibles have been demolished.

BENES, E. The Little Entente was founded in 1920.

BENNETT, R. B. In July, 1930, he succeeded Mackenzie King as premier of Canada.

BENKSHIRE REG. The attack on McNeill's zebra took place Mar. 22, 1885.

BERNHARDI, F. VON. Died July 10, 1930.

BETHUNE, SIR E. C. Died Nov. 22, 1930.

BEVENLEY. The aerodrome is at Heath.

BIRKENHEAD, EARL OF. Died Sept. 30, 1930.

BOAT RACE. Cambridge won in 1930.

BOLIVIA. The map of Bolivia which appears in most of our impressions has the position of La Paz, the principal city, clearly indicated on the railway line, with the extension in progress to Coroico, but by a mistake of the cartographer name of town was omitted.

BOY SCOUTS. The minimum age for rover scouts is 17.

BRANCKER, SIR S. Killed in R 101 disaster, Oct. 5, 1930.

BRIDGES, ROBERT. Died April 21, 1930.

BRUNSWICK, DUKE OF. In line 6, for daughter read sister.

BUXTON, NOEL. Made a peer as Lord Noel Buxton, 1930, and resigned office as minister for agriculture. His wife succeeded him as M.P. for N. Norfolk.

CANADA. At the general election of July, 1930, the Conservatives were in the majority and R. B. Bennett became premier.

CANVEY ISLAND. Pop. 6,000.

CARUSO, ENRICO. Took the part of Rudolfo in La Bohème.

CATALYSIS. This is a reaction which is accelerated in presence of a foreign substance, called the catalyst.

CHARING CROSS. Proposal to build new bridge was rejected by House of Commons.

CHESAPEAKE. This frigate had 38 guns.

CLARKE, SIR E. Called to the bar in 1864.

COMMONS, HOUSE OF. In table for Ireland read Scotland.

CONVEYANCING. In the case of conveyances under £500 stamp duty is half the scale given.

COOK, J. He sailed for the South Seas in 1772.

CORPORAL. Chevrons worn on right sleeve also.

CRICKET. In 1930 Lancashire won the county championship.

DEPTFORD. Here Drake docked Golden Hind.

DENBY, TIE. In 1930 it was won by Blenheim (the Agha Khan).

DESTROYER. These are now organized in flotillas of eight.

DISCOVERY, TEE. Mawson went to the Antarctic in 1929 in Scott's Discovery.

DISTRIBUTION. In line 11 for the second A read C.

DIVORCE. By English law a divorce can only be obtained for adultery.

DOYLE, SIR A. C. Died July 7, 1930.

DURLEY. Cycles not now made here.

EARN. For Strathmore read Strathern.

EKATERINBURG. Is in the Urals.

FIFE, DUKE OF. Princess Louis' widow of 1st duke, died Jan. 4, 1931.

GNEISENAU. This was an armoured cruiser.

GOSLING, H. Died Oct. 24, 1930.

HEALTH INSURANCE. The total weekly payments are 1s. 6d. for men and 1s. 1d. for women, which includes the payments towards the pensions scheme. In Northern Ireland they are 1s. 4d. and 1s. 1d.

HOWARD, SIR ESTHER. Took the title of Baron Howard of Penrith.

HUSBAND. Although a woman cannot, as stated, bring a civil action for maintenance against her husband, she can apply to the police court for a maintenance order.

IDENTITY. In line 9 for always read some times.

INDIA. Round Table Conference to determine future system of government opened in London, Nov. 12, 1930.

JEFFRE, MARSHAL. Died Jan. 3, 1931.

LEOPOLD OF BAVARIA. Died Sept. 28, 1930.

LIEUTENANT. The badge of rank is now worn on the shoulder, not on sleeve as shown in illustrations.

LIPTON, SM. T. The firm is not merged in Allied Stores.

LONDON. This cruiser has eight 8-in. guns.

LONGREACH. For 248 miles read 428.

MADDER, SIR C. E. Received O.M., Jan., 1931.

MAJOR. The rank in the navy is lieutenant-commander.

MANCHESTER. Grammar School founded 1515.

MARLBOROUGH. Is not served by the L.M.S.

MASSAGE. The governing body is now known as the Chartered Society of Massage and Medical Gymnastics.

MELCHETT, LORD. Died Dec. 27, 1930.

MUNRO, NEIL. Died Dec. 22, 1930.

NEWCASTLE-UPON-TYNE. In caption for King Edward VII. bridge read High Level Bridge.

NORTHERN IRELAND. In second line, for Ireland read Northern Ireland.

PARNOR, 1ST BARON. His son, R. S. Cripps, K.C., became solicitor-general, Oct., 1930.

PHILLIPS, THOMAS. Dudley is in Worcestershire.

PONTEFRAC. Illustration is a Tudor hall.

ROMNEY, G. The portrait of Perdita Robinson is by Gainsborough.

RUTHERFORD, SIR E. Created a peer, Jan., 1931.

SAXE. This is the French form of Saxony.

SCHARLIEB, DAME MARY. Died Nov. 21, 1930.

SHEFFIELD. For cathedral (R.C.) read church.

SHOTLEY. Is in Suffolk.

TARDIEU, A. Resigned premiership, Dec., 1930.